ARCHER Reporting

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Reporting

- Monthly Reports
  - Automatically generated by SAFE; stats and usage charts
- Quarterly Reports
  - More descriptive, metric analysis, stats, highlights and forward look
  - meet with EPSRC to review and ensure service is Operating
- Annual Report
  - Highlights and review of the Service over the year
- Annual User Survey
- All available on ARCHER

  See: https://www.archer.ac.uk/about-archer/reports/

Monthly Report

Report from 01 January 2017 to 31 January 2017

Report for Resource Pool XC on ARCHER

A total of 1,317,772.797 kAU were available during this period.

Use and Allocations (by Project)

In the following table, Charged refers to usage which was charged against the project Allocation; whereas Used refers to usage including uncharged time. Uncharged time can arise from use of the Low Priority queue and/or during times when charging is disabled on the service.

The (Allocation) column is the time allocated to the project, scaled according to the reporting period and shown as a fraction of the available resources. If this report period is a sub-period of the Allocation period then the SAFE calculates the Allocation for this sub-period based on a linear spend profile of the total Allocation. If the usage for a project is not linear across the full Allocation period the the Use can be larger than the extrapolated Allocation.

Project	Project Class	Number of Jobs	Charged kAUs	Charged Utilisation	Used kAUs	Utilisation	Allocated kAUs	Allocation
e01	Consortia	604	41,954.6	3.18%	43,296.3	3.29%	75,576.4	5.74%
e05	Consortia	9,292	310,371.9	23.55%	313,206.0	23.77%	245,302.2	18.61%
e89	Consortia	10,554	130,460.9	9.90%	130,960.9	9.94%	135,334.5	10.27%
e280	Consortia	24,152	33,202.4	2.52%	33,202.8	2.52%	39,491.8	3.00%
e281	Consortia	683	25,093.7	1.90%	25,094.8	1.90%	21,667.1	1.64%
e283	Consortia	347	13,539.8	1.03%	13,618.1	1.03%	17,622.2	1.34%
e305	Consortia	948	27,418.7	2.08%	27,428.1	2.08%	22,162.6	1.68%
e410	Leadership	37	7,613.3	0.58%	7,613.3	0.58%	8,565.5	0.65%

Quarterly Reports

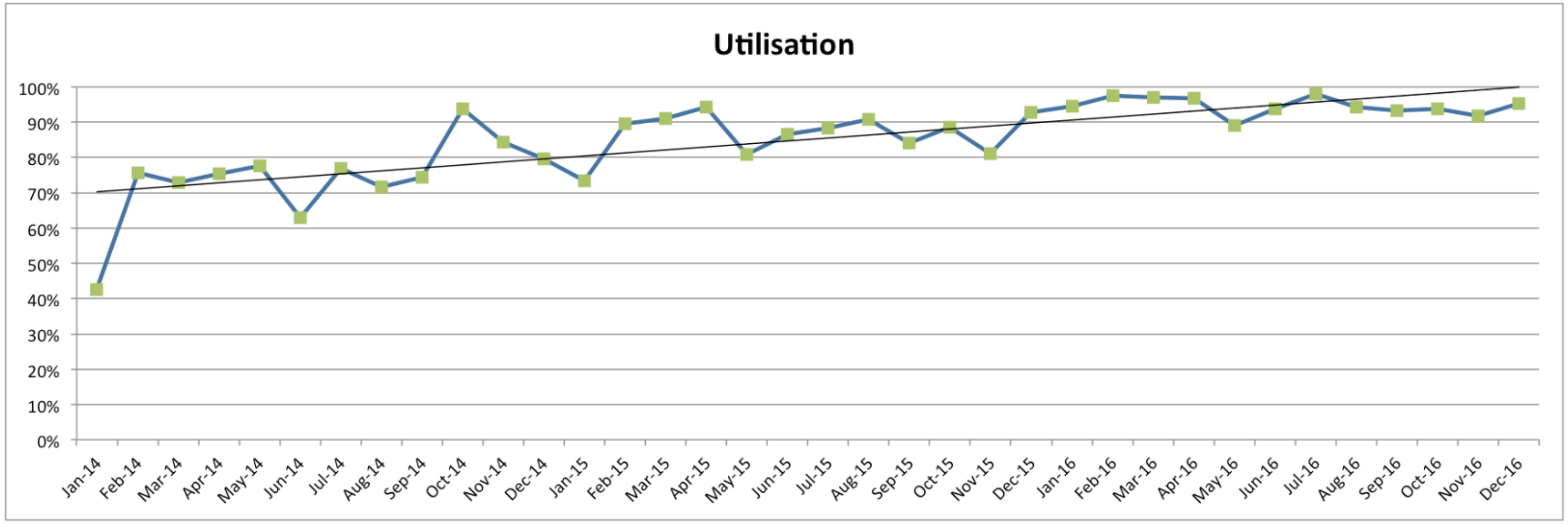
- Three Elements:
  - SAFE Generated report (same as monthly report)
  - ARCHER Service Provider (SP) Report
  - ARCHER Computational Science and Engineering Report

- SP Report:
  - More descriptive, metric analysis, statistics, highlights and forward look, Maintenance sessions
  - meet with EPSRC to review and ensure service is Operating as expected

Quarterly Reports...

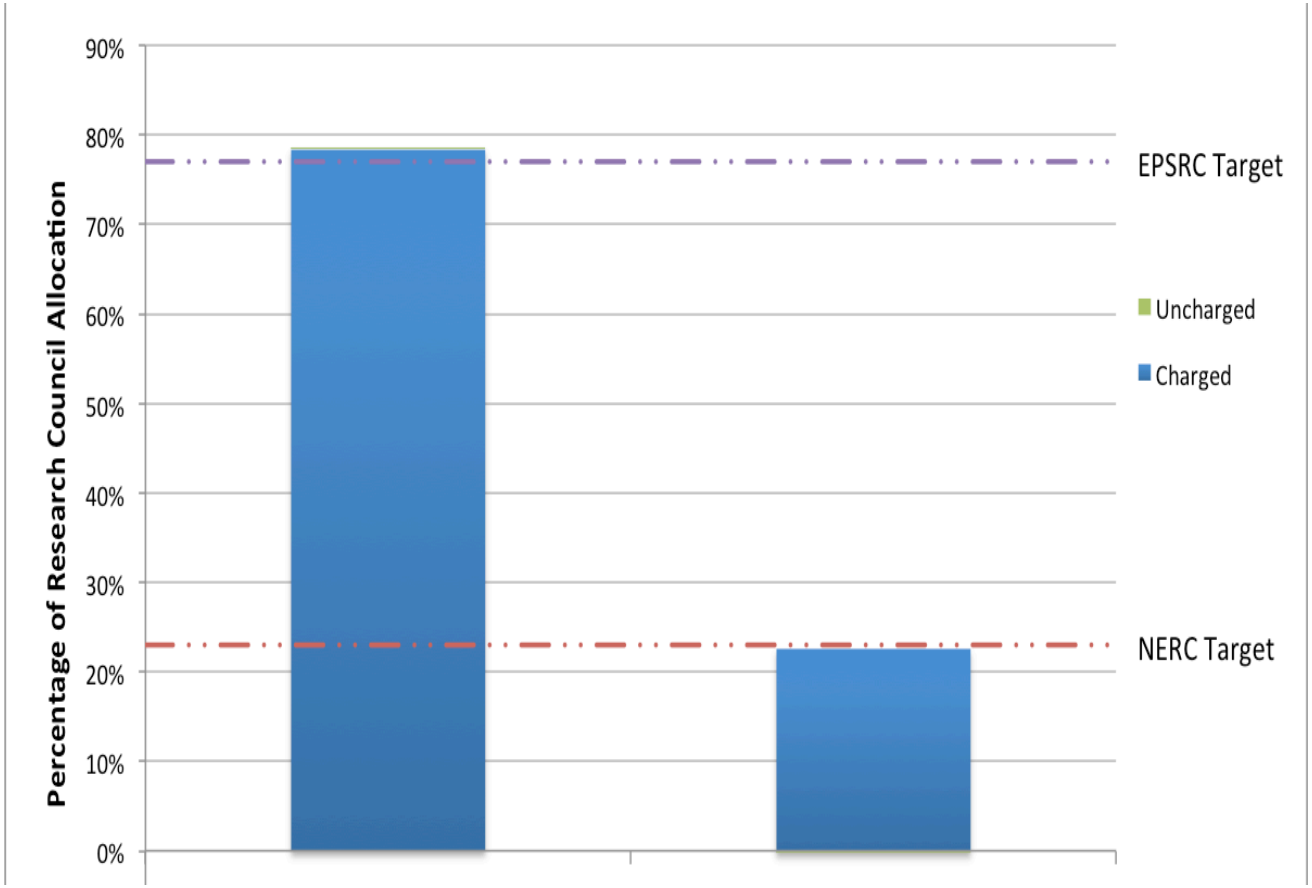
- Service Highlights
  - Highlights changes or developments over the quarter
- Forward Look
  - Short to longer term view of planned develpoments
- Contractural Performance Report
  - Looks at all of the metrics applied across the SP Contract
- Maintenance
  - Report on planned and any unplanned outages of the service
- Service Statistics

Overall Utilisation



The plot below shows a steady increase in utilisation over the lifetime of the service to Dec 2015 and since then the service has effectively been operating at maximum capacity as shown by the steady utilisation value.

Utilisation by Research Council



Usage of ARCHER presented as a percentage of the total Research Council allocation on ARCHER

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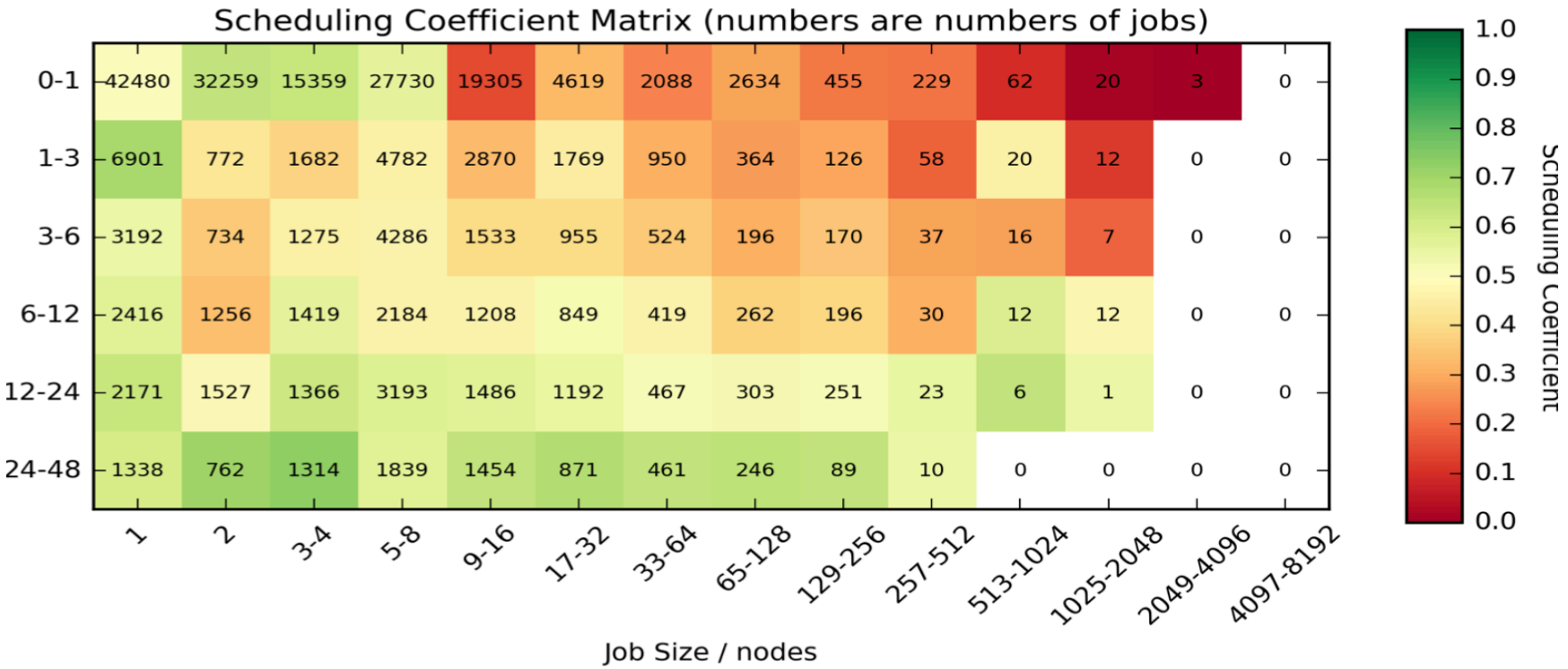
Scheduling Coefficient Matrix



The colour in the matrix indicates the value of the Scheduling Coefficient. This is defined as the ratio of runtime to runtime plus wait time. Hence, a value of 1 (green) indicates that a job ran with no time waiting in the queue, a value of 0.5 (pale yellow) indicates a job queued for the same amount of time that it ran, and anything below 0.5 (orange to red) indicates that a job queued for longer than it ran.

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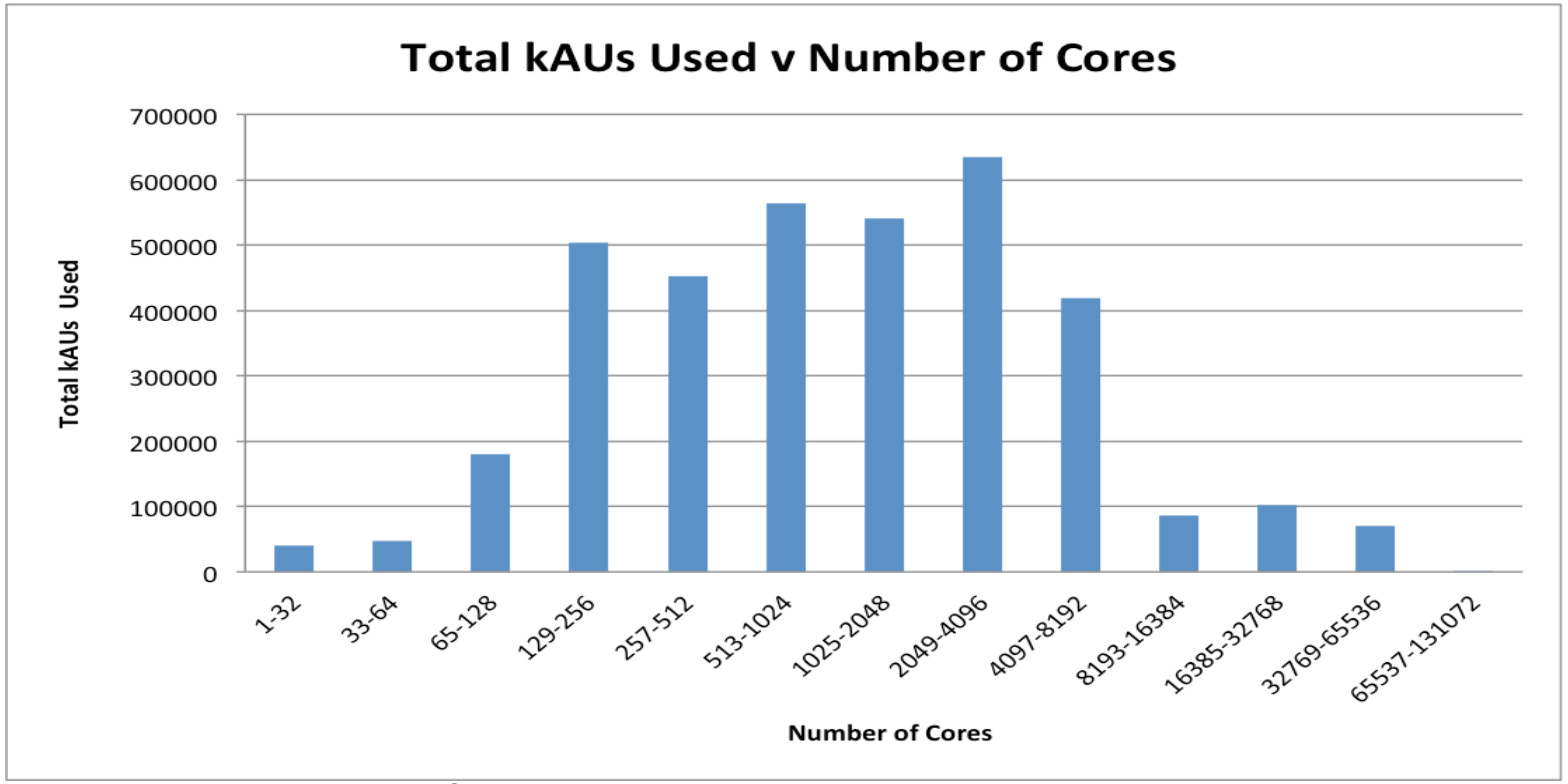
Usage Graphs



This graph reveals that most of the kAUs were spent on jobs between 257 cores and 8192 cores.
The number of kAUs used is closely related to money and shows better how the investment in the system is utilised.

Annual Reports

- Reports on all elements of the Service
  - SP
    - User Support and Liaison
    - Operations Group (Systems)
  - CSE
    - Computational Support
    - Outreach Activities
  - Cray Service Report
  - Cray Centre of Excellence Report

User Survey

- Survey covered:
  - overall satisfaction, hardware, software, helpdesk, documentation, website, training, webinars

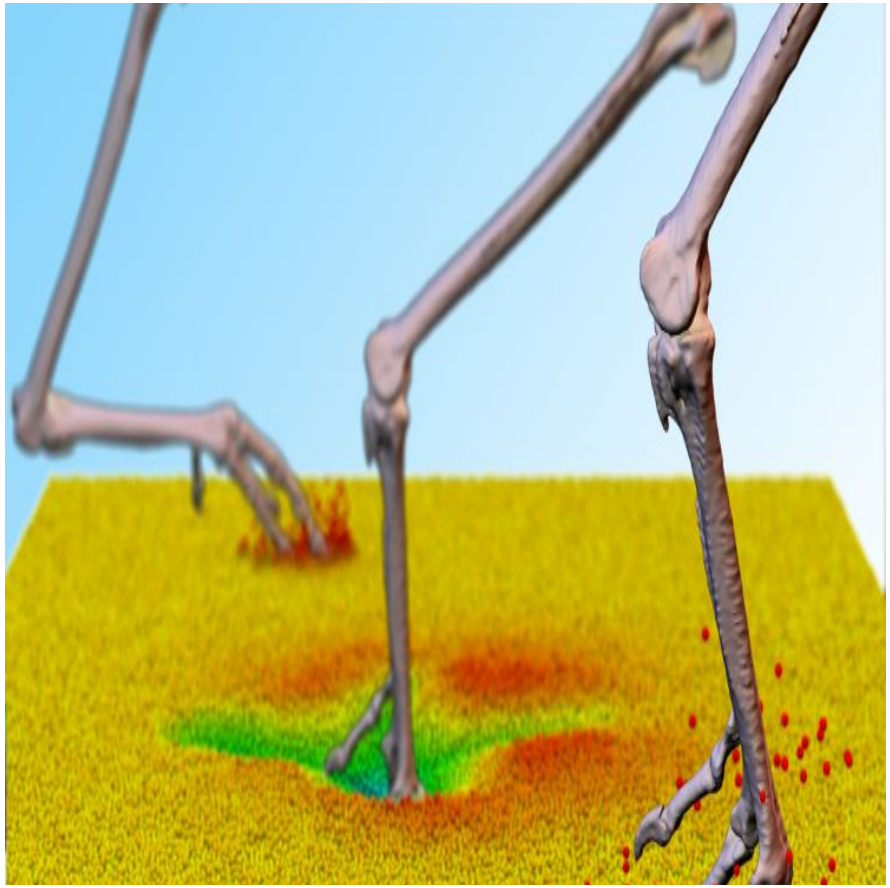
- 2016 Survey taking place now
- (please respond £1 to charity for each response)

- Previous surveys have led to configuration changes such as Short queue hours being extended

ARCHER Image Competition

- Held in the last two years
- Aim is to demonstrate the contribution of ARCHER to research
- ARCHER Users submit an image and a jargon-free 150 word description
- Winning entries feature in the ARCHER calendar and gives us a varied and visual bank of images
- Winning entry £250

Winning Entry 2016



This image is of three stages of footprint formation, simulated by combining bi-planar X-ray data of a guineafowl walking over a sand-like substrate with a Discrete Element simulation of the substrate. X-ray Reconstruction of Moving Morphology (XROMM) was used to capture the motions of the leg and foot in a living animal. LIGGGHTS was then used to model the substrate, simulating grains of 1 mm diameter. Poppy seeds were used as the substrate as they behave like dry sand but are less dense, allowing X-rays to pass through.

This work has allowed us to link features of footprints - both at and below the surface - with motions of the foot, and is now being applied to understanding footprints made by long extinct dinosaurs.

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