

IT Strategy Committee
20th June 2024 at 2 p.m. via Microsoft Teams

MINUTES

Present:

Simon Moore (SM) – Chair
Malcolm Scott (MS)
Daniel Porter (DP)
Rafal Mantiuk (RM)
Mateja Jamnik (MJ)
Andreas Vlachos (AV)

1. Apologies for absence

Mark Cresham, Abraham Martin (UIS), Helen Francis, Thomas Sauerwald.
Mark was due to take minutes, so in his absence the Chair attempted to take minutes and chair the meeting.

2. Approval of the Minutes of the Previous Meeting

Unconfirmed Minutes of the meeting held on 8th February 2024 were approved

3. Matters Arising

None

4. Actions from the Previous Meeting

(a) *Matters Arising (Item 3)*

- SM reported that the new Chair of ITSC is Richard Mortier.

(b) GPU Resources for Teaching (Item 4a)

- MS and AM to update on setting limits on AWS student accounts to restrict cloud GPU hours.

MS – strategy to get students to use HPC GPUs and only our local ones for testing. Queueing times on HPC is an issue at times due to high demand across the university. 40 students using the paid HPC with 16 not using any but 15 went over their limit (over £700 for one student). GPU VMs – underused this year. Shared GPU server was over-used. GPU server upgraded to 4 GPUs, which has helped, but GPUs themselves need updating to newer ones.

AV – what the high GPU resource usage result in exceptional results? Or is it poor practise? We need to investigate.

RM – students contacted about usage?

MS – Malcolm kept an eye on things but just a few went over their initial 300 hours.

SM – could we fine students who are irresponsible?

DP – Is there an easy way to detect when students are over their limit?

MS – HPC doesn't help with automation!

MJ – asked about checking.

MJ – 300 hour limit, over 600 hours need supervisor involvement.

SM – can we ask HPC to provide easier access to usage information?

MS – large number of GPUs available to student can rack up large number of hours in a short space of time.

MJ – student perspective: in a crisis over computational resources. They find the HPC unworkable, e.g. HPC was out for 2 weeks.

MS – HPC better for projects than course work.

MJ – we should move to cloud resources. Staff have been surveyed to find out how much resource they need for their teaching. We're losing students from our MPhil due to lack of computing resource.

MJ – students seem to find that requesting a VM was too big a barrier since a good rationale is required.

DP – echoed the above concerns from the postgraduate student forum.

RM – was it a bad coincidence that the HPC became unusable for 2 weeks? Unclear.

DP – student would like access to some of the paid tiers for free.

MS – we have a pot of EPSRC funding for HPC hours for PhD students – but little advertised.

MJ – standard package for computation for all MPhil and PhD students.

SM – pushed back on funding GPU resources for research, where he believes that the funding should come from grant. MJ and AV argued that a base-level of provision was required for teaching and research.

RM – agrees that we should be able to provide a basic provision but those requiring vast resources for research (PhD students, postdocs),

RM – need for some GPUs for graphics projects – need PCs in the Intel Teaching Lab.

DP – would like to see a better base-line package of computational resources, with extra special resources from research funding.

MJ – we have the basic baseline but the Tier 2 package from HPC is inadequate.

MS – no higher tier is available to us except paying for dedicated GPUs for a time. PhD students have come to him for cloud support and there has been scope to fund out of research grants.

MS – desktop machine with a GPU – somehow, we'd need to police that they are only being used for graphics projects.

RM – it can be an older card for graphics but need at least 12GiB of memory.

MS – ACS machines are lab managed Linux; Intel Lab are UIS managed and Windows only.

SM – how do we move this forward? Revised proposal?

MJ – reminded us about the previous GPU proposal.

DP – baseline package – not all of it needs to be covered by the department.

SM – who's volunteering to do a revised costing for a GPU resource.

MS – departmental GPUs coming to end of life.

ACTION: Proposal to HoD Team to upgrade the departmental GPUs over the summer. MS noted that the order needs to be submitted in the next couple of weeks.

ACTION: MJ and Nic Lane - revise their GPU for teaching proposal and send to HoD Team.

(c) Recovering of finances (Item 6)

- DP and HF to report on discussions with Sarah Bainsfair, Finance Analyst.

DP – mainly need to improve cost recovery of equipment on grants.

5. Standing Items

(a) MS and DP to provide an update on improvements made and current issues.

MS – issues – GPUs

MS – replacement for MCS Linux – provided a ssh server + a dedicated one for the ECAD course. Lots using the shared machines. It appears to have been a success. UIS now requiring different login requirements.

MS – replacing the archive server since it is end of life. Reusing some of the disks in the new machines. Upgrade to filer is also in progress: around £37k.

MS – new RT ticket system. Seems to be a success.

MS – working with research groups to buy replacement servers including GPU servers.

MS – new platform to support web applications.

MS – Piete will retire soon but may go part-time at 20%. In parallel recruiting a new sys-admin.

MS – new projects where some funding is available: GPUs, network (large project: core switches £100k, office switches, £200k, ...), Wi-Fi access points but part funded by UIS. New firewalls using general purpose servers.

DP – notes to come from Daniel.

DP – new member of support staff, helping a lot on RT.

DP – physically reorganising offices to get the team closer together.

DP – new RT ticketing is helping a lot.

DP – finance team now using sharepoint. Dan Hunter (new in Finance) is very skilled.

SM – anything about worktribe?

DP – no problems

MS – training was a problem due to some issues with our VPN.

DP – lecture theatre upgrade in progress; looking at new support processes for that.

DP – hybrid meetings; need to upgrade meeting rooms starting with a pilot room.

DP – DSS print – more laser printers to be using it. Our printers are now very old.

SM – are printers now used less?

DP – we don't have clear stats.

MJ – they could monitor paper usage to monitor printer usage.

DP – access control project is underway. Our department is being used as the proof of concept.

DP – improving Windows domain security.

DP – Drupal migration project appears to be unworkable – too much manual work, so that is being discussed.

MS – Drupal doesn't allow intranet sites.

MS – new sys-admin very helpful.

SM thanked DP and MS for their hard work to improve services and cope with the large gap left by our two lead senior computer officers retiring. SM was also pleased to see that a new sys-admin had been appointed.

(b) Report on the School's IT Strategy Committee (AV) and update from UIS (AM).

AV reported the following in a message since he had to depart for family commitments.

There are two points from the School committee:

- Cybersecurity training: I have asked for a report on the uptake and I will coordinate with HoD on how to act on it
- UIS is moving to Drupal 10 or 11 but we are on 7. I will keep checking on what support we can get from school and notified Stewart Carswell know this is coming

MS – cyber training focused on reputational damage mitigation and lacks much useful information to keep us safe.

6. Any other business

SM's departing words before stepping down: he highlighted that there may well be a push to centralise all computing services to save costs but that we need to ensure that we maintain departmental services in order to undertake research since we are, after all, an internationally leading computer science department and computers are at the centre of our research.

7. Date of next meeting

Appendix: infrastructure report (MS)

Teaching

- ACS:
 - 40 students used HPC, 16 of whom used zero chargeable hours, whereas 15 went over the standard allocation of 300 hours.
 - There have been complaints about HPC queueing times, mainly due to temporary problems, but queues remain long regardless – no good solution.
 - Due to our strategy of encouraging users to use HPC primarily, only four students needed GPU VMs this year (plus five needed CPU-only VMs)
 - ACS shared GPU server was heavily used as a development platform for HPC, and was upgraded mid-year from a 1-GPU VM to a 4-GPU server
- New undergrad SSH server: 106 users (including non-students), some using it quite extensively
- New ECAD course SSH server: 38 users
- UIS require urgent changes to the authentication mechanisms on these servers, probably to require each user to upload a SSH key – we must not allow password-based login as they do not have a solution for multi-factor Kerberos authentication

Recent and ongoing work

- Replacing archive server (to improve security and reliability, and as a prerequisite for other improvements)
- NetApp (filer) capacity upgrade in the planning stage
- RT major upgrade complete
- Worked with research groups to buy several new dedicated servers for them, mainly small GPU servers
- New web application server, a platform on which we can start to replace legacy dbwebserver applications, is in the proof-of-concept implementation stage
- Ongoing rolling refresh of some infrastructure hardware (UPSes) and software
- Piete's semi-retirement is upcoming
- Recruitment of a sysadmin is imminent

Upcoming projects needing budget prioritisation

- A considerable amount of funding needs to be spent, though some of the projects needed over the next few years will be substantially bigger
- ACS GPU upgrade: what should we buy? Should we spend all of the available SIF £100k on it?

- A decision was taken to replace the current servers with like-for-like modern equivalents
- Filer capacity upgrade will cost approximately £37k (not yet committed)
- Network refresh will be needed soon
 - Wifi TBD (survey done, recommending some upgrades, but not yet costed; probably largely paid for centrally if we take their recommendation)
 - Firewall replacement ASAP and will cost approximately £34k (using generic servers and in-house implementation)
 - Core switches reach end-of-life in Oct 2025; replacement will cost ~£100k
 - Office switches reach end-of-life in Oct 2027; replacement will cost ~£200k for a like-for-like replacement but there is some demand for upgraded speeds, which would increase the cost by 2-3x if rolled out everywhere – or UIS may part-fund if we adopt their defragmentation programme
 - Datacentre 1Gbps switches reach end-of-life in Oct 2027; replacement will cost ~£170k