Extending the Productive Life of Scientific Computing Equipment

Results of Survey of CASC Members
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Survey shows the Need/Opportunity to Extend SCE Lifetime

Options are needed that:

- Continue to provide computing services that advance scientific inquiry,
- Meet the real financial constraints around keeping the SCE operational,
- Minimize negative environmental impact (don’t create e-waste, don’t increase carbon emissions).
Survey Mechanics

- April 1 Virtual Meeting of CASC
  - 88 attendees
- Presentation by Prof. Andrew Chien
- Link to SurveyMonkey survey
  - 25% response rate: 22 completed responses (including partial)
- Full Analysis of Survey Results available at: http://zcc-lifetime.cs.uchicago.edu/
90% of Decommissioning => EOL, no more Science!
NSF funds only 30% -- Institutions self-fund 60%
Both Institutions & Government gain value from Extended Life)
Local Limits Drive Decommissioning

- Space Limits
- Power Limits
- Energy efficiency
- Warranty support
- No longer scientifically useful

Hard Constraints vs. Subjective
Universal Interest, Extended Operation Concerns

- Yes: 65.0%
- Maybe: 35.0%

Bar chart:
- Cost of Operation: 100%
- Environmental Impact: 75%
- Data Privacy: 25%
- Transfer of ownership: 0%
Conclusions and Next Steps

Key Takeaways:

● Decommissioned SCE is Large and Growing
  ○ Planned Decommissioning Comparable to #25 Top500 system

● 90% of Decommissioning => EOL, no more Science!
  ○ NSF funds only 30% -- Institutions 60% (twice as much)

● Institution and Government will get more value through Extended Life

● Local Limits drive Decommissioning

● Universal Interest, Variety of Extended Operation Concerns

Project web site: http://zcc-lifetime.cs.uchicago.edu/