Opening Remarks from the Steering Committee

BCS Review
Christoph Paus
MIT, May 22, 2025

Goals for today

Review the Basic Computing Services (BCS)

- Provide a description of the BCS and its implementation
- Summarize accomplishments and plans
- *No focus on specific physics results**

Evaluate the context BCS lives in

- MIT IS&T provide fundamental infrastructure
- ORCD office: addresses global MIT wide research computing
- MKI and LNS have separate computing support

Provide summary information

- Deepto needs material to show the need for and the usefulness of the BCS during the visiting committee review
- Summary of the review needs to provide that documentation

* Physics research results will be added for the visiting committee

Basic Computing Support

Task #1

Tasks #1 (and #2) were put in place by Dep. Head P. Fisher, 2021

- Starting June 15, 2021, implement a single login computing environment allowing Physics researchers to access heterogeneous high-performance resources. The implementation should include access to available high performance computing systems in the Department and affiliated labs that will be made available on a voluntary basis. The implementation should proceed in a timely fashion and aim to be available during Fall term. This first implementation will not be able to meet all the requirements of the Basic Service.

SubMIT opened for service on December 9, 2021

→ this is our 4th year in service

Structure of BCS

Steering Committee **Faculty led** Chair: C.Paus	

Meeting ~ once a months

Users Group **Researcher led** D.Walter M.Heine, M.D'Alfonso	**Project Team** **Researcher led** D.Walter M.Heine, M.D'Alfonso

Meeting ~ once a months   Meeting weekly

Functions

- Steering: oversight, budget and hiring, large design
- Users group: support forum, discussion of needs and dissemination of status and plans
- Project team: support, develop, monitor, maintain

People

Steering Committee

Prof. Mikhail Ivanov

Prof. Christoph Paus (chair)

Prof. Mark Vogelsberger

Prof. Deepto Chakrabarty

Prof. Rob Simcoe

Prof. Bolek Wyslouch

Membership revisited on the yearly basis.

People transitions

Will Detmold

Prof. Mikhail Ivanov

Steering Committee update

- Will Detmold took a sabbatical
- Mikhail Ivanov is a fresh new member of the committee
- Business has transitioned smoothly
- Will has remained in contact (on email list)

People transitions

Josh Bendavid
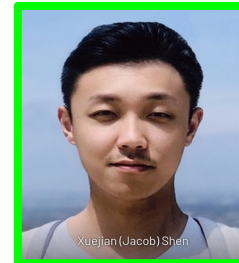

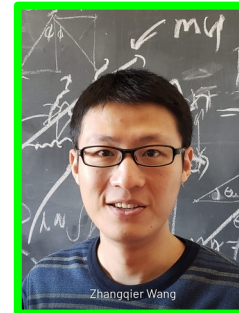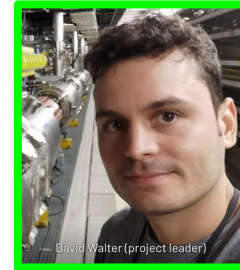David Walter (project leader)

SubMIT project lead

- Joshua Bendavid was appointed a permanent physicist position at CERN, **big congratulations!**
- Josh's leadership was outstanding leading through a number of lasting upgrades of the BCS
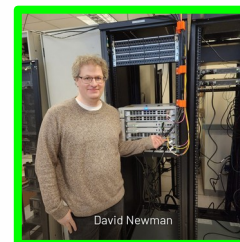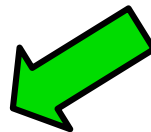- David Walter has taken over and has been doing terrific

People

Users Group

Amer Ahmad Al-Hiyasat

Jordan Lang

Hans Moritz Günther

Jose Miguel Munoz Arias

Josu Aurrekoetxea

Luke Kim

Project Team

Matthew Heine (deputy)

David Walter (project leader)

Mariarosaria D'Alfonso (deputy)

Zhangqier Wang

Luca Lavezzo

Marianne Moore

Xuejian (Jacob) Shen

Paul Acosta

A2rchi

SubMIT Hosting team

Paul Acosta

David Newman
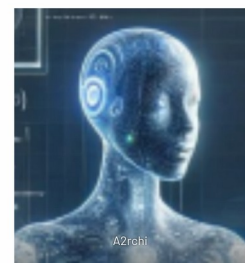
2.0 FTE Project team
0.75 FTE Hosting team
Paid by the Physics Department

Funding concept for BCS

Transitions are critical

- The SubMIT project is build on the idea that people come in learn from the rest of the team and contribute for a limited amount of time to then move on
- Much preferred are postdoc and graduate students that are intensely involved in usage of SubMIT for physics analysis reasons (cost)
- The last year have proven that the concept of temporary appointments is effective
- People transition from the project have reported positive effects of their experience in high level computing organization
- Continuity is intrinsic in the team, but also provided by the Steering Committee

Mass Storage Technology
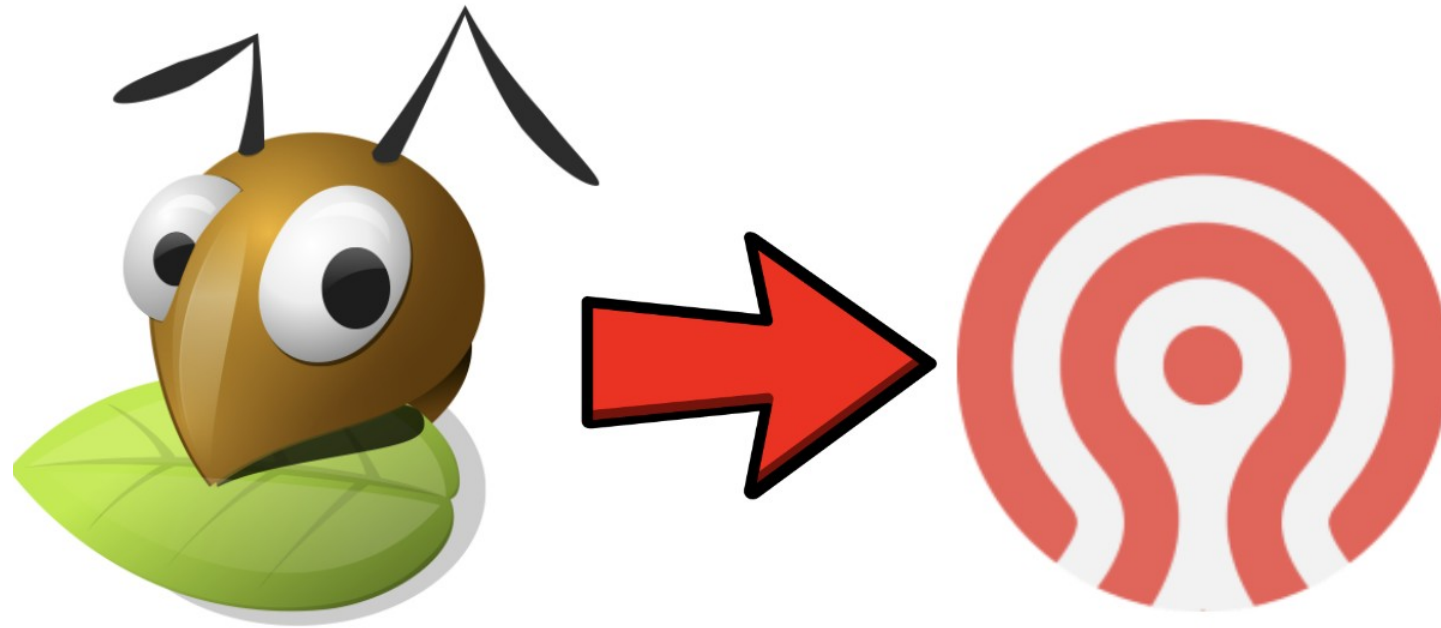
Moving from gluster to cephFS

- Reliability for large number of small files was problematic
- Single user could unintentionally cause problems for all users
- Extensibility was not obvious with gluster
- CephFS has fully addressed these issues (at reasonable cost)
- Possibly home and work directories in cephFS?

Some Organization

Feedback for this review

- Please, interrupt and ask questions during presentations, they will be recorded in the minutes
- Shared document available for written comments/questions:
  link this year (link this year)

Answers to questions

- Recorded questions will be answered in writing and should be available latest by a week after the review

Thank you for taking the time, we appreciate the strong support of the department and hope we can convince you this project continues to be a big asset to the department.