

Exascale IO Initiative: Progress Status

The [ELOW](#) intends to architect and implement the open source, upper level I/O middleware system E10, suitable for exascale storage. In this BoF we summarized the past and ongoing effort and discussed it within the community consisting of vendors, storage experts, and users.

First, in an introduction, Hugo Falter from ParTec and Kevin Canady from Parallel Scientific motivated the need for a novel interface in the Exascale era and sketched our approach, which involved users and application requirements during requirement workshops.

Most time of the session has been spend on short presentations given by representatives of different projects and institutions actively contributing to the initiative:

- The difference between E10 and existing solutions as well as ongoing activities has been presented by André Brinkmann from the Johannes Gutenberg-University Mainz.
- Mathieu Boespflug from Parallel Scientific presented the high-availability concept, which is based on an immortal core implemented in Haskell.
- Nikita Danilova talked about the involvement of Xyratex in the DEEP-ER project and the object storage currently developed as backend for E10. An important distinction compared with other object storage systems is, e.g., the fine grained epochs, which strongly simplify recovery operations.
- The progress of the SIOX project which develops a flexible monitoring and machine learning infrastructure that is adjusted towards the needs of the Exascale IO initiative. Julian Kunkel from the Hamburg University presented a prototype that remembers performance of MPI hints and injects the best fitting hints during file open, if a user has not set all hints.

All presentations are available [online](#). On our webpage you will also find further technical material and the opportunity to interact with us. We are looking forward hearing about your I/O requirements and convincing you about the benefit of joining forces in the international partnership of Exascale 10.

Mail from the SC13 Organizers:

I hope that your SC13 Birds of a Feather session went well, and that those of you who are in the USA had a nice Thanksgiving holiday afterward.

One of the things we asked you to do this year was to prepare some type of report regarding your BOF, so that people who could not attend your session might have an idea of what was discussed and/or decided. Consider it both a summary and an opportunity to allow others to join your community. The target length is 1/3 page to 1 page, but use more pages if you really need/want to. Like SC BOF sessions themselves, please keep the reports non-commercial. (I

will push back on reports that appear to be a pitch to sell a product or service.)

To submit your report, first log into <http://submissions.supercomputing.org>. You should be given a link to upload your BOF "presentation." Please use this link to upload your BOF report PDF. Please upload PDFs if at all possible, instead of Word or Powerpoint documents. The deadline for uploading these is December 31, 2013.

For various reasons, I am still working on the details of how these reports will be made available to the public. I will send another email once those details are known, but please don't wait for this second email to upload your report.