

REPORT ON bof166: OpenACC API User Experience, Vendor Reaction, Relevance, and Roadmap

The President of OpenACC Duncan Poole kicked off the BoF by presenting an overview of the current status OpenACC, its support for varied architectures including upcoming DOE CORAL systems. The model's current support for IBM's Power processors, hybrid Power CPUs with NVIDIA's Tesla GPUs; this marks OpenACC's support for OpenPOWER.

Dr. Haohuan Fu, the deputy director of NSCC-Wuxi presented newer OpenACC implementation that maps CAM code on world's #1 supercomputer Sunway Taihulight's ShenWei processors. This was one of the major highlights of the BoF.

Michael Wolfe from PGI gave a technical overview on proposed feature set to be added to OpenACC 2.6, which is work in progress. Features including Deep Copy, Device Query Routines, Error Handling among several others. He also discussed some clarifications and corrections to the existing standard.

Randy Allen from Mentor Graphics gave an update on OpenACC's support in GCC and discussed implementation of some of the features in the standard, challenges encountered, the feedback they received from users and how they are marching forward with the rest of features' implementations.

Fernanda Foertter from ORNL presented the success stories of the year's GPU Programming Hackathon effort that was hosted in Germany, USA and Switzerland in 2016. Over ~ 25 teams including NASA, NCI, BNL, Naval Research Laboratory, KTH and Universities migrated their legacy codes to TITAN and other supercomputers using OpenACC directives.

The attendees echoed the two most critical and tangible outcomes from the hackathon that included (a) Creation of a professional HPC workforce and (b) Improvement of compilers' quality.

Sunita Chandrasekaran from UDEL kicked-off an OpenACC user-group meetup where the primary goal is to involve the OpenACC users in the creation of the standard. OpenACC as a standard is heavily user-driven and feedback from the users is highly critical for the standard to evolve in the right direction. To that end the first OpenACC User Group Kick-off meeting was announced at the BoF stating the group's mission and goals.

Questions from the audience included timeline to release the next version of the standard, where to obtain code samples of OpenACC to teach in classes or use to evaluate OpenACC compilers and so on.

The book on Parallel Programming with OpenACC, 1st Edition, edited by Rob Farber was given away to the attendees on a first-come-first-serve basis at the end of the BoF.