

Exploiting non-volatile memory for large scale computational simulation

Adrian Jackson (The University of Edinburgh) and Hans-Christian Hoppe (Intel)

Abstract

Byte-addressable persistent memory, such as Intel's Optane DCPMM, offers the potential for multiple memory spaces with varying capacity and performance characteristics for future server hardware. Such memory can be used for I/O or for active compute memory, however, the best methods for exploiting such memory for a range of applications need future research. This talk will outline some of the work done in the NEXTGenIO project to exploit persistent memory for computational simulation, data analytics, and machine learning, and discuss some of the application design decisions such memory hierarchies pose application developers and users.

Bio

Mr. Adrian Jackson works in high performance computing, computing hardware, and computational simulation, including being involved with the last three national HPC services. His main areas of research and work are in parallel computing algorithms, parallel programming techniques, new computing hardware, and program/code optimisation. He also represents EPCC on the OpenACC technical and marketing committees, and he is a full member of EPSRC peer review college.