



Contribution ID: 28

Type: **Oral presentation**

Supporting NVRAM storage with active systemware

Thursday, 26 September 2019 11:30 (30 minutes)

NVRAM technology used for storage and memory within compute nodes of a HPC system has the potential to bring large performance benefits and enable new functionality, especially for computing scientific workflows and processing scientific data. However, safely and efficiently utilising such technology on a large scale, multi-user, HPC system presents challenges using existing applications and systemware. Within the NEXTGenIO project we have developed a number of systemware component, including a multi-node filesystem that utilises in-node NVRAM, data schedulers to move data on and off compute nodes, and batch system integration to ensure user workflows and jobs can safely exploit compute node NVRAM. This presentation will outline these components and discuss some of the performance and functionality benefits such components can bring to HPC systems and users.

Keywords

NVRAM, Systemware, Scheduler

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Track Classification: NEXTGenIO Workshop on applications of NVRAM storage to exascale I/O