



e-Seminar #18 High Performance Containers?

6 October 2021 3pm CEST / 2pm BST (1h duration)

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Containers are a convenient means of encapsulating complex software environments, but can this convenience be realised for parallel research codes?

Running such codes costs money, which means that code performance is often tuned to specific supercomputer platforms. Therefore, for containers to be useful in the world of HPC, it must be possible to capture this specialisation within a single container. Indeed, a container should be dedicated to one research code and have the ability to run efficiently on multiple HPC platforms.

This presentation will explore a workflow that attempts to achieve this aim using Singularity containers that bind to the MPI libraries on the host.

This is the 18th in a series of online e-Seminars organised by CompBioMed.

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Michael Bareford has a background in theoretical solar physics. He joined EPCC in August 2014 and his day-to-day activities involve helping researchers run their parallel codes on the ARCHER2 and Cirrus machines.

Bareford's remaining time is spent doing computational science research, such as investigating the benefits of using one-sided communications and exploring the suitability of FPGA devices for HPC workloads. At EPCC, he has contributed to the ExaFLOW and NEXTGenIO projects. The former concerned the need to prepare CFD codes for the move to exascale platforms; this work involved the in-depth profiling of the Nektar++ code using a variety of profiling tools such as CrayPat, Score-P and Arm MAP.

Moderated by Tim Weaving, UCL



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