

# National HPC Facilities at EPCC: Exploiting Massively Parallel Architectures for Scientific Simulation

*Keynote Presentation*

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**Abstract.** This presentation gives an overview of the challenges facing scientific software developers in exploiting current and upcoming massively parallel HPC facilities. The different levels of parallelism available in the architectures will be discussed, together with their impact for software design and what the trend is for the future. The discussion will be illustrated with examples from the two national facilities currently hosted at EPCC: HECToR (a Cray XE6) and the DiRAC IBM BlueGene/Q.

**Keywords.** massively parallel, architecture levels, scientific software, software design, Cray XE6, IBM BlueGene/Q

