Extreme Computing on the Distributed European Infrastructure for Supercomputing Applications – DEISA

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Abstract. Scientists' dream of accessing any supercomputer in the world, independently from time and space, is currently coming true, to perform even larger and more accurate computer simulations, at their finger tip. Today, high-speed networks transport data at the speed of light, middleware manages distributed computing resources in an intelligent manner, portal technology enable secure, seamless, and remote access to resources, applications, and data, and sophisticated numerical methods approximate the underlying mathematical equations in a highly accurate way. With the convergence of these core technologies into one complex service oriented architecture, we see the rise of large compute and data grids currently being built and deployed by e-Infrastructure initiatives such as DEISA, EGEE, NAREGI, and TERAGRID.

With the aid of one example, in this keynote presentation, we will elaborate on the Distributed European Infrastructure for Supercomputing Applications, DEISA, which recently entered its second phase. We will describe the system architecture, called the DEISA Common Production Environment (DCPE) and the DEISA Extreme Computing Initiative DECI attracting scientists all over Europe to use the networked supercomputing environment, and we will highlight a few impressive success stories from scientists who achieved breakthrough results so far which would not have been possible without such an infrastructure. Finally, we will summarize main lessons learned and provide some useful recommendations.

Biography: Wolfgang Gentzsch is Dissemination Advisor for the DEISA Distributed European Initiative for Supercomputing Applications. He is an adjunct professor of computer science at Duke University in Durham, and a visiting scientist at RENCi Renaissance Computing Institute at UNC Chapel Hill, both in North Carolina. From 2005 to 2007, he was the Chairman of the German D-Grid Initiative. Recently, he was Vice Chair of the e-Infrastructure Reflection Group e-IRG; Area Director of Major Grid Projects of the OGF Open Grid Forum Steering Group; and he is a member of the US President's Council of Advisors for Science and Technology (PCAST-NIT). Before, he was Managing Director of MCNC Grid and Data Center Services in North Carolina; Sun's Senior Director of Grid Computing in Menlo Park, CA; President, CEO, and CTO of start-up companies Genias and Gridware, and professor of mathematics and computer science at the University of Applied Sciences in Regensburg, Germany. Wolfgang Gentzsch studied mathematics and physics at the Technical Universities in Aachen and Darmstadt, Germany.