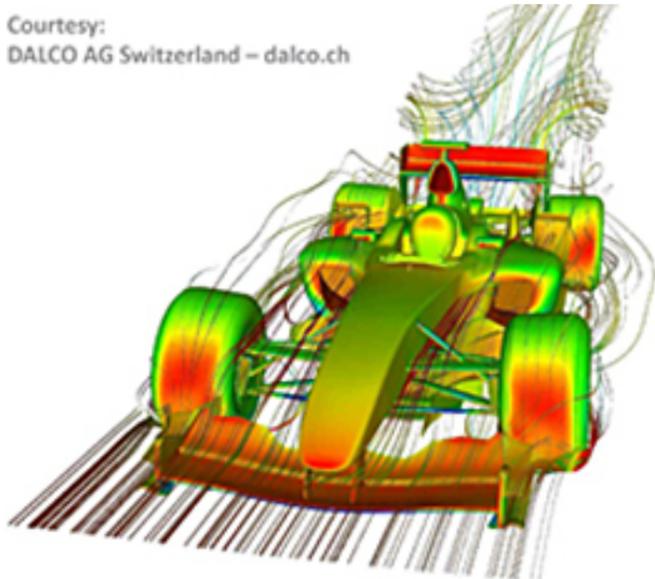


Industry Innovation through HPC: A Focus on Return on Investment and Market Competitiveness

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Businesses increasingly report that they are able to boost their productivity and competitiveness in the global market by deploying computer simulations and digital modeling. Such applications require high-end computing power and storage that are provided by HPC products and services. The ISC'14 two-day Industry Innovation through HPC track is designed to help engineers, manufacturers and designers gain the right set of tools and methods they will need for acquiring and operating HPC systems. This track is all about return on investment and market competitiveness.

The program kicks off with a presentation titled **Evolution of Advanced Clustering**, which presents the latest considerations when designing clustered computing systems. In the past, cluster design was driven by technology in which the CPU, interconnect and the network were the key design factors. Today, a profound understanding of the characteristics of the applications, as well as matching technologies is essential to building optimal systems. The session will give an overview of today's design space in advance clustering techniques, best practice approaches for more common system solutions, as well as an outlook on upcoming technology trends.

The session **CAE Solutions for HPC Clusters** features presentations from independent software vendors (ISVs), who will talk about how their computer-aided engineering products have been adapted for various HPC platforms. The presentations will devote particular attention to scalability issues on multi-core systems, performance improvements, software licensing and cloud availability.

Stranger in a Strange Land: Running Linux Clusters in Microsoft Environments is a presentation that addresses a common scenario faced by many industrial HPC users. Today, most companies rely on Microsoft-based infrastructure in their computing environment, consisting of components such as Active Directory, the Common Internet File System (CIFS), and Windows workstations. Their users take for granted Windows features like network-mapped drives and graphical interfaces. Linux clusters, on the other hand, are based on different concepts and, thus, it is not an easy task to combine these two disparate worlds. The session will address these challenges, suggest solutions and offer practical advice on how to operate a Linux cluster in a Microsoft environment.

The fourth session, **HPC Cloud-Based Simulation Services for Mid Caps & SMEs** — First Results from the EU I4MS Initiative, highlights the work being done under the ICT Innovation for Manufacturing SMEs (I4MS) initiative. I4MS is one of the programs set up by the European Commission for encouraging HPC use in small and medium-sized businesses. The session will present the first results and future opportunities of application experiments for simulation, FORTISSIMO, CloudFlow and CloudSME.

The session **HPC Impact on U.S. Industry Innovation** is in some sense the counterpart to the previous session, as it gives an overview of the efforts to support HPC-accelerated innovation for industry in the United States.

A major goal of our program track is to demonstrate the use of HPC systems in various fields of industry and for different applications. The sessions **Cloud & Big Data: Examples from Industry and Real Life Applications** explicitly address this area, focusing on success stories that demonstrate accelerated innovation using HPC clusters.

Solving Complex Problems with Affordable HPC Systems is a session that concentrates on HPC systems that are moderately priced, fitting into the IT budget of mid-sized companies. The speakers will share their rationales for choosing specific hardware configurations to solve their key simulation codes. Total cost of ownership (TCO) will also be discussed.

Last but not least, the session **Support Structures for HPC in Industry** explores approaches for supporting companies who adopt HPC technology. This discussion promises to be of special interest for those end-users and technology providers looking to bring more industry applications into the HPC fold.

The program requires a Special Focus Pass at a price of 150 € per day. The Special Focus Pass also grants access to the exhibition and to the ISC conference keynotes. The registration fee covers full catering and local transportation within Leipzig.

For more information, visit: <http://www.isc-events.com/isc14/industry-innovation-through-hpc.html> [1]

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