CASE STUDY

INTELLIGENT SOFTWARE FOR SWITZERLAND´S HIGH PERFORMANCE COMPUTING CENTRE: CSCS BANKS ON DATWYLER'S "PANORAMA"

Swiss National Supercomputing Centre opted for a proposal from Datwyler covering both a software solution and services for comprehensive data centre documentation and sophisticated future management tasks.

The Centro Svizzero di Calcolo Scientifico (CSCS) is Switzerland's national High Performance Computing (HPC) centre. An autonomous service and research unit of Swiss Federal Institute of Technology (ETH), Zurich, the CSCS works closely with Swiss higher education institutions, ETH Research Stations, CERN, the national meteorological service and other research institutes, including international ones.

In the field of computer-assisted science the CSCS is considered to be Switzerland's central contact, with both the technical resources and know-how to make HPC possible in the first place. It makes modern supercomputers available to Swiss research, for example to analyse large amounts of data or to calculate simulations of complex processes. It also supports its customers using tailor-made in-house developments and by passing on the requisite technical knowledge. To this end the CSCS maintains Switzerland's largest and most efficient HPC system in Manno.

In spring 2012 the CSCS is moving to its own premises in Lugano, so extensive preparations are necessary. A central component of relocation planning is to fully document every detail of the Manno data centre in advance with the aid of software. Among the things needed to do this are a component library and an object designer to create the master data for equipment and infrastructure.

Future management tasks

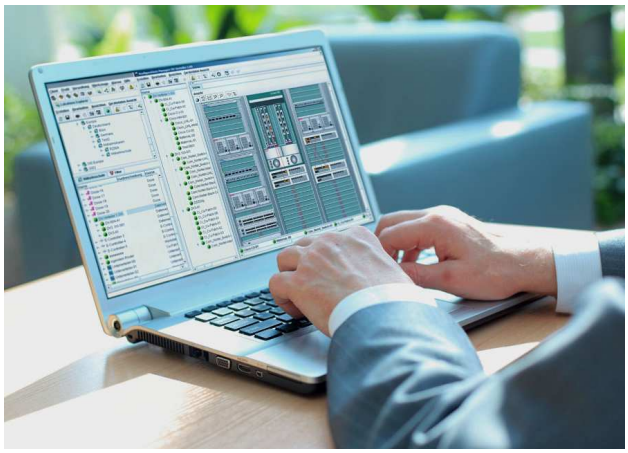
As well as for ongoing documentation, CSCS plans to use the software for other important management tasks on the new site. Numerous other features were therefore required in addition to standard tools – for error checking and a search for available ports, for instance. This meant that the software had to show hierarchies, cable ducts and cable runs, and automatically calculate the cable lengths required. It had to provide the option of triggering orders for essential installations and mapping workflows. Warehouse management called for various functions including the simple administration of cable stocks, particularly patch cables. Simulations of error situations had to allow those responsible to identify potential single points of failure in advance. Not least, the CSCS wanted options for reading the energy consumption data of individual devices and for automatically allocating these and other costs – e.g. services rendered – to individual cost centres.

Attractive total package

In November 2010 CSCS commissioned a specialist engineering consultancy to evaluate a suitable solution. After a standardised evaluation process Datwyler beat all its competitors' offers in April 2011.

The greatest impression of all was made by "Panorama", the web-based, multi-client enabled management software solution, which met the requirements of the CSCS in every respect. What clinched the matter, however, was not only the

Picture on right: HPC Cray XT5 Monte Rosa supercomputer with 22,032 processor cores and 211.51 TeraFlops



software itself, but also the services provided by Datwyler, including customised workshops, and the good price/performance ratio of the total package.

The software was set up at CSCS for several users. Following an initial workshop held on-site in August 2011 those responsible at CSCS created the module database (component library). They are in the process of implementing the modules now.

The second workshop was held in November 2011, before the move takes place.

(November 2011)

