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Cray is back in Europe

Heidelberg 13 February 2006 *Once Cray was the undisputed king of supercomputing in Europe. At one point, this declined to the level where people were wondering when the last Cray supercomputer would leave the TOP500 list. Instead, a large XT3 sale to CSCS in Switzerland, and a 40 Tlop/s peak system to AWE in the UK, as well as sales of the company's other products to well-known customers, show that Cray is regaining presence in the European market. EnterTheGrid - Primeur magazine talked to Ulla Thiel, vice president of Cray Europe, to understand what led to the recent large successes, and to ask about the Cray plans for Europe in the near future.*

Much to our surprise, as much as the technology of supercomputers has changed over the years, the way you sell them has not. There are still procurements you have to win, and you have to have a technical user community that understands your system and can help in creating trust and confidence in the system.

In 2003, Cray announced plans to productize the Red Storm system, which is a joint development between Cray and Sandia National Laboratories in the USA. This new scalar MPP system was called Cray XT3 and became generally available in mid-2005. The announcement to productize was done well ahead of product availability, as is not unusual in the supercomputer industry with its long investment cycles. However, when Ulla Thiel joined the company in February 2004, there was no Cray XT3 product yet. Hence it took a while before the first XT3 customer in Europe, CSCS in Switzerland, could install its first new, close to 6 Tflop/s Cray XT3 system in 2005.

The reasons for the relatively large time gap between the successful Cray T3E and the successor Cray XT3 are well known in HPC circles. Cray was acquired in 1996 and was not permitted to develop a T3E successor until Cray became an independent company again until 2000. Because of this, having a credible launch customer for the new XT3 product became more important. It was impressive that the XT3 launch customer was CSCS, which has a long-standing reputation as an important supercomputer centre in Europe, with much experience with all kinds of supercomputer architectures and applications.

The second Cray XT3 system which was sold in Europe was even more impressive: Cray is very happy that AWE in the UK has ordered a large (over 40 Tflop/s peak) system. AWE was a Cray customer for many years in the past, starting in 1979 with a Cray 1, followed by a Cray X-MP in 1984. In those days, performance was measured in Mflop/s - 400 Mflop/s peak was available at AWE at that time. That's 100.000 times less than the 40 Tflop/s of today. For a number of years, AWE did not have a Cray, but had an IBM (at that time Ulla Thiel was leading HPC EMEA for IBM). So with the new Cray XT3, an old relationship is re-established. Ulla Thiel stressed that it is not so much the 40 Tflop/s peak that is important for AWE, but the sustained application performance gain. AWE said that on its benchmark suite, the new Cray showed a 30 times increase in sustained performance over AWE's existing system. What's even more important is that the AWE win shows that Cray is once again fully focused on HPC and able to exploit its deep understanding of customers' current and future requirements.

A major part of the strategy to attract new customers for Cray in Europe is to foster a user community, Ulla Thiel said. She started with Cray technical workshops in 2004. At these workshops customers, together with Cray experts from Europe and all over the world, meet to discuss various topics, including programming and applications. These workshops are an important element in re-building a Cray user community in Europe. This year there will be another technical workshop, and the Cray User Group (CUG) will be held in Europe, at CSCS in Manno, Switzerland in May (http://www.cug.org. May 8-11). Ulla Thiel plans to develop the user community further on a basis of mutual trust between Cray and its customers. This is the way supercomputer companies (notably Cray itself) worked with their customers twenty years ago, but most have lost or never had this ability. It is still an effective approach.

Cray intends to actively compete for supercomputer procurements in Europe, as happened with the competitive wins at CSCS and AWE. U.S. customers, including Sandia, Oak Ridge National Laboratory and the Pittsburgh Supercomputing Center, have already announced breakthrough capability-class results using their Cray XT3 systems. There are many companies that can play in the capacity or throughput computing space, but only a few that can successfully compete in capability computing. Cray is currently engaged in several large procurements in Europe, but not surprisingly, Ulla Thiel cannot give more details.

In Europe, Cray has a sales and customer support presence. Ulla Thiel emphasizes that Cray Europe has a technically very knowledgeable pre-sales and application support department. This is important because Cray is an engineering company, driven by research and development. Although there is no R&D in Europe, advanced technical knowledge has to be available to attract and support customers. All the R&D of Cray is done in the U.S. According to Ulla Thiel, it is not viable for a company of Cray's size to maintain a separate European R&D organisation. This is not much of a problem, as the connections to the U.S. are fairly direct and communication paths are fast. There are not many levels of hierarchy in the company. One drawback is that Cray is not able to participate in European R&D projects, as they require a European R&D

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> Dell delivers advanced Blade server connectivity
> Sun plans to put the UltraSPARC T1 processor in the upcoming Netra AdvancedTCA Blades
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organisation to participate.

Another product of Cray is the XD1. This was introduced over a year ago, but Cray has been relatively quiet about this system during the past half year or so. Ulla Thiel explained that Cray as a publicly traded U.S. corporation only announces sales of a certain dollar value, and most sales of the lower-priced XD1 do not cross this threshold. There have been some relatively large customer sales in Europe, for instance at CINECA, Aston University, Daresbury, Juelich and CERFACS.

Ulla Thiel said the XD1s are performing well for customers. The system is sold in Europe mainly through distribution partners in the Linux cluster space. This is a very competitive market, where price is the dominant factor. Selling to this market is different from selling to the high end of the supercomputer market. There are shorter sales cycles and typically smaller projects in this space. The XD1 key selling point is its unique architecture. We may see some new marketing strategies for this system.

The third Cray system is the vector machine, the Cray X1/X1E series. The first announced European customer for this series was ICM at Warsaw University, which uses it for weather forecasting and various scientific disciplines. In 2005, the Spanish National Institute of Meteorology (INM) upgraded their existing Cray X1 to a powerful Cray X1E system, used for operational weather forecasting in Spain. This is a typical user of a vector system. It is a specialized market, often Earth system-related. According to Ulla Thiel, there are applications that will always run much better on a vector system, especially on modern vector architectures that are well balanced with a strong interconnect and that use the same programming style as microprocessor-based HPC systems.

Cray is concentrating on the high-end supercomputer market and has a well-developed marketing strategy in Europe. It will be interesting to see in, say, the June 2007 TOP500 list, whether this leads to an increase in market share. Of course Cray, as a company that designs systems for sustained performance on real applications, is less concerned than some other HPC vendors about Linpack results and Top500 standings.

Ad Emmen

technology

> Dot Hill introduces Green Storage system for the enterprise

> HP outships all other server vendors worldwide for 15th consecutive quarter

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The Grid

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> UK e-Science Programme moves on with new ambassador

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> EGA and GGF to sign non-binding Letter of Intent to merge

> EELA takes off

> Official kick-off meeting of the EUMEDGRID Project: empowering e-Science across the Mediterranean

> Global Grid service for LHC computing succeeds in gigabyte-per-second challenge

> EGEE holds first User Forum event at CERN in Geneva

> Open Science Grid elects Management Team

> Voltaire releases industry's first

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> Wilfrid Laurier University selects SGI technology for computational sciences

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> The UK e-Science Institute wins continued funding

> International Summer School on Grid Computing 2006 to be held in Ischia, Italy

> UCLA's Laboratory of Neuro Imaging (LONI) chooses Sun to help improve the study of healthy and diseased human brains

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Applications

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> Robarts Research Institute chooses SGI technology to enable advanced medical simulation for minimally invasive surgery

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