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Bull Blade Servers Aim for the High-Performance Computing Market

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The new bullx family gives Bull a purpose-built high-performance computing architecture that it hopes will distinguish it from commodity clusters, particularly for the divisional and supercomputing end of the market.

NEWS ANALYSIS

Event

On 17 June 2009, Bull introduced the bullx blade. The bullx brand will replace Bull's NovaScale servers, which will continue to be sold to enterprise customers for more standard computing workloads. The new bullx blades have a hybrid architecture that can incorporate both high-density blades and accelerators that use technologies developed for graphical processors. The bullx blade server:

- Is designed to address high-performance computing (HPC) needs
- Includes green IT characteristics, such as a new water-cooled chassis, smart fans and thermal sensors
- Includes the Linux-based bullx Cluster Suite as a software management toolset

The CPU-only version of the bullx blades is currently available. Bull plans to launch a GPU-accelerated version in November 2009. Both versions are based on dual-socket Nehalem EP (Xeon 5500) processors, but the accelerator blades can include up to two NVIDIA Tesla M1060 GPUs. Bull did not disclose pricing, but suggested a range of a few tens of thousands of euros to several tens of millions of euros, depending on system scale.

Analysis

With its bullx family, Bull adds a purpose-built HPC architecture to its portfolio. Seeking a bigger slice of the HPC market, Bull has aimed its new products predominantly at the divisional and supercomputing end of the market, rather than at the workgroup end. Its strategy is to take 10% of this addressable market in Europe by 2010. To this end, Bull has extended its portfolio by acquiring two companies in the last 18 months: Serviware and science + computing (s+c).

The well-thought-out bullx design targets supercomputing requirements for large amounts of computing capacity. The bullx blade server packs a substantial amount of computing power into a small footprint, has a balanced capability for memory and input-output, and minimizes the significant energy and cooling challenges of a high-density system. Bull has opportunities to market this product outside of HPC; for example, to cloud service providers, whose requirements for performance density, energy and heat efficiency, and adequate connectivity are similar to the needs of supercomputer sites. Bull refers to designs aimed at these common needs as "extreme computing solutions." (Other products targeting this category include HP's Extreme Scale-Out products and the IBM iDataPlex family.)

Bull’s green technologies in the new bullx servers are generally evolutionary. For example, the use of smart fans is becoming an industry standard. High-density systems typically need to be water-cooled, which is more efficient that air-conditioning systems. However, the bullx innovative ultra-capacity module could help manage brownouts, reduce energy use and offer cost savings over an uninterruptible power supply (UPS) system. Nevertheless, the ultra capacitor is not yet as proven as UPS technology, although it has been in use in non-IT fields.

RECOMMENDATIONS

Enterprises:

- If you are planning a new supercomputing installation located in and around Europe, consider adding the bullx blade server to your shortlist for consideration, particularly if space, power or heat are an issue.
- Proceed cautiously if you depend on the ultra-capacitor as the only means of avoiding transient power failures. Ensure that it adequately addresses the profile of past power disturbances and planned availability needs.
- Evaluate the bullx blade server even if you have already invested in UPS systems for your data center, as the server will not add to the load on UPS systems and will help slow the increase in energy use.
- If you require extreme performance levels or performance densities, and your system will primarily run one specific application, look to acceleration of the code using graphics cards installed in the bullx servers as a means of multiplying installation performance.

RECOMMENDED READING

- "Heterogeneous Systems Are in Your Future" — Heterogenous systems that mix processor types under one operating system will spread beyond HPC efforts to general-purpose computing. **By Carl Claunch**
- "Green Server Procurement: Assessing Vendors' Green Credentials" — Gartner presents key criteria enterprises should use when assessing the green credentials of server vendors and their products. **By Rakesh Kumar**

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