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Snapshot

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X Marks the Spot for IBM

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Consolidation for industry standard servers has been more of a desire than reality as the concept was well ahead of the technology. However, Microsoft's Virtual Server and EMC's VMWare products for the Windows environment, and XenSource's products for Linux in conjunction with forthcoming virtualisation support capabilities from the chip vendors, mean the technology is finally here. The introduction of the new IBM x3 architecture and the new eServer models x366 and x460 mark a sea change for the x86-based server market. These servers are two members of a family that permit scaling for x86 architectures that allows IT managers to undertake server consolidation and virtualisation as never before. IT managers no longer need to think one application for one server; they can consolidate workloads on a platform that has significant price/performance improvements and the ability to scale with the attendant reliability features. IT managers can now treat their x86-based server buying decisions on strategic directions and not just on more immediate tactical needs. The end result could see the x86 market sweet spot moving from the dual-processor to the four-way system as price/performance metrics are altered.

Servers Storm the Data Centre

Seldom is an x86-based server worthy of headline news. Vendors tend to get excited about each addition to their server families, but individual announcements tend to be incremental rather than step changes. This is particularly true in the x86-based market, where many vendors are using variations on the same volume technologies and industry standards. This market has changed recently, driven particularly by changes in chips. In addition to the rapid changes in processor speed and compute capacity, there has also been architectural change. The introductions of dual-core technology, 64-bit extensions, and memory controller technologies have led to confusion and hesitation in the market. Customers are unsure where to standardise, which technologies are best for which workloads, and which model server to standardise on. It is difficult to build a data centre strategically when the underlying technology changes so quickly and in so many vectors. The danger is that some managers will decide it's easier in the short term to just purchase more uniprocessor servers and continue to stack them up in their data centres.

For most IT managers, if adapting a new technology will give you a return within six months, then it is probably worth purchasing that technology. This is fine for tactical purchases, but for many organizations there are already too many tactical servers in the data centre. For mid-market customers in particular, once they begin to hit seven to ten servers, they can start to see complexity become a real issue for their IT department; but even customers with three or four servers can find consolidation attractive. This is the market IBM mean to address with the x366 and the x460 systems. Built on IBM's new x3 architecture, the systems are meant to be strategic members of the data centre, capable of moving in the direction IT chooses at the pace it chooses. They are built to handle current chipsets as well as forthcoming ones. They are designed to be scalable, focusing on the four-way or eight-way markets rather than the traditional two-way market that is the current volume sweet spot. And they come with significant price/performance increases over other systems in their class. Now that virtualisation technologies are emerging on the hardware as well as the operating system side of the architecture, customers can actually take advantage of larger systems to consolidate smaller workloads. IBM's server is designed to meet that need and help organizations get out from under the avalanche of tactical uniprocessor servers clogging the data centre.

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Unleashing the Hurricane

The x3 architecture is a step change in x86 serving for a couple of reasons. First and foremost, systems built on this architecture use the Intel EM64T chips, the Xeon 64-bit extensions that allow for 64-bit computing. They are also ready for dual-core technology as it arrives, which means that the servers will double their scalability as new technology allows while providing for investment protection. IT managers can adapt the technology to fit the needs of their workloads and the strategic direction they want to take, when they are ready. IBM say the architecture is designed for highly scalable, always-on environments and emphasises that the X3 architecture is a result of a three-year, hundred million dollar investment in bringing high-end mainframe capabilities to volume servers. The server also has impressive price/performance metrics due to chip improvements IBM have made that obviate the need for level four cache, making the chip set less expensive as well as faster. Finally, the architecture also uses a building block approach, so additional four-processor blocks can be added to the same system in a modular fashion, allowing bigger systems as needed.

The x366 is the smaller server of the family, designed to meet the needs of an organization needing a four-way server. It is a 3U rack-density model, can scale to 64GB of memory, and supports up to six serial SCSI drives in the chassis with RAID 5 as an option for greater reliability, and has two hot-swappable power supplies.

The x460 is the bigger brother that scales to thirty-two processors now, and sixty-four processors with dual-core technology. It comes with all the features of the x366 and scales further. The sweet spot for this server is the eight-way market. Because IBM were able to reduce processor to memory latencies, they were able to remove level four cache from the system, this reduction in price makes the price/performance of an eight-way system more attractive to customers. Now that virtualisation technologies are becoming available for most x86-based operating systems and future generations of chips, consolidation is becoming a better proposition for decreasing costs and complexity for mid-market customers who have found themselves growing their data centre annually and who worry about the strategic impact of their choices over time. Customers with fewer servers looking to buy one larger server they can grow into or who would like to consolidate a few servers will find the x366 an attractive solution. Once the consolidation number hits seven to ten servers, the x460 becomes a better proposition.

Breaking the Cycle

More and more IT managers feel the need to wean themselves off the mentality of just adding a couple more servers to the data centre as administration, licensing, and management of these growing server pools is creating a server hydra. Mainframes and UNIX systems have been used for consolidation for some time, and now x86-based servers can also feature in the equation. Larger servers for consolidation and future scaling is a more sensible and attractive proposition than lots of boxes with cabling and administrative nightmares. For workloads that require a traditional scale-up server environment, or for customers scaling large databases for Windows or Linux, these products are worth serious consideration. For IT managers who tire of the vicious circle of needing to add yet another server yet find overall utilization levels remain depressing low, the new IBM servers provide an opportunity to break the cycle. The x366 and x460 promise to be the first in a new chapter in taming the IT environment and making IT more effective.

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