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Fact Sheet

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The Intel® Xeon® Processor 7500 Series: Transforming Mission-Critical Computing

SANTA CLARA, Calif., March 30, 2010 - With the arrival of Intel's newest server chip – the eight-core, 16-thread Intel® Xeon® processor 7500 series or "Nehalem-EX" as it's been called until now – the buzz around Intel's Xeon server chip line-up has never been louder. Described by Intel as "the biggest performance leap ever in Xeon history," there are high expectations for this new processor family.

The EX in Nehalem-EX stands for expandable – the processor sockets, memory and I/O all scale (or expand). For example, it can scale from two sockets up to 256 sockets. Its scalable and modular architecture allows an unprecedented range of system designs, enabling the processor to span all the way from medium up to large-scale enterprise computing environments.

In the traditional enterprise server market, the Xeon 7500 is ideal for platforms handling databases, customer relationship management applications and large-scale virtualization environments. But the processor's scalable performance and advanced reliability capabilities mean it can handle mission-critical workloads that have historically been the domain of proprietary servers. This includes computationally heavy tasks such as large-scale databases, data warehouses, large-scale ERP and business intelligence solutions. With the unprecedented levels of performance, reliability and scalability in these server platforms, there is growing sense that Xeon expandable systems are poised to take a bigger chunk of the high-end server market.

The Continued Trend from Proprietary to Intel Xeon Processors

The last decade has seen Intel make great strides in winning server market from proprietary architectures. The RISC market is in decline and according to IDC^1 ; Intel-based machines today account for 58 percent of server revenue. In fact, IDC figures indicate that through 2009, the revenue share of x86 systems continued to grow compared to non-x86 boxes. IDC expects this trend to continue as users became more cost conscious than ever this year and look to x86 servers for relief from capital and operational expenditures.

Intel believes the Xeon 7500 processor has a pivotal role to play in these changing server market dynamics. The introduction of the new chip will accelerate the shift away from proprietary architectures, changing the face of mission-critical computing as we know it today. The drivers of these trends are:

The Economy

The economic downturn has been a major impetus for change. Proprietary systems can be more expensive to both purchase and manage than x86 systems, with some commanding a million-dollar price tag. Companies have become more cost-conscious over the last decade and the economy of the last few years has further heightened this pressure. As a result, many IT departments have switched some of their workloads from proprietary to x86-based systems in a bid to reduce their capital and acquisition costs. The new Xeon 7500 processors make an even better business case for migration from proprietary machines. While many believe the worst of the economic downturn is over, companies will undoubtedly remain cost conscious throughout 2010 and beyond.

Intel Xeon Processor 7500 Series – Foundation for a Complete Mission-Critical Package

With the introduction of the Xeon processor 7500 series, Intel has delivered a quantum leap in performance. The new processor provides an average of 3x performance across a broad range of performance metrics², 8x the memory bandwidth than the previous-generation chip (the Intel® Xeon® processor 7400 series), and it also boasts impressive mainframe-inspired reliability, availability and scalability (RAS) features, considered by many as essential for mission-critical applications. For example, one of the more than 20 new RAS features is machine check architecture (MCA) recovery, which works with the operating

¹ IDC's Worldwide Quarterly Server Tracker, February 2010

² Source: Published/measured results 29 March 2010. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel products, go to: http://www.intel.com/performance/resources/benchmark_limitations.htm.

system to allow recovery from otherwise fatal memory errors. The MCA recovery capability in the Xeon processor 7500 series represents a first for x86-based systems.

By transforming the RAS capabilities of this processor, Intel has gone a long way in making Xeon much more relevant for the high-end server market. Companies can now choose a Xeon-based system which delivers the capabilities they need for their mission-critical workloads, at a fraction of the price of a proprietary system.

Software Ecosystem

In the past, a big concern for companies considering migrating from a proprietary architecture to a Xeon-based platform has been whether the operating system (be it Linux, Windows* or Solaris* on Xeon) will provide the same level of experience as before. Intel has had strong collaborations with all the operating system vendors to ensure their operating environments are optimized to take advantage of Intel platforms, in particular all the RAS features built into Xeon 7500 based servers. Embedding the RAS features into the silicon and chipsets isn't enough, for true reliability the entire solution stack needs to work together so Intel is working with the industry to ensure this happens. Thanks to fundamental performance and reliability improvements, operating systems like Redhat Enterprise Linux* and Microsoft Windows* Server are today enjoying renewed popularity at the expense of proprietary operating systems. In addition, Intel has worked for several years to ensure Solaris* on Intel architecture is now a mission critical UNIX offering fully supported on the Intel Xeon family of platforms. Intel has also collaborated closely with the software solution and application vendors resulting in a collective force of software vendors ready to expedite the shift to Intel-Xeon based mission-critical computing.

Closing the Gap Between Xeon and Proprietary Solutions

Intel Xeon 7500-based systems deliver exceptional performance, additional reliability and availability features that are critical to businesses and all within an economic value proposition that is a fraction of equivalent proprietary solutions. By eliminating much of the perceived advantages of a proprietary system, the processor will continue moving up the computing stack and provide businesses with a great opportunity to replace their aging proprietary installed base.

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