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Intel Advances Next Phase of Big Data Intelligence: Real Time Analytics

Intel® Xeon® Processor E7 v2 Family Delivers Industry's Most Advanced Technology for In-Memory Analytics to Accelerate Major Business Transformations

NEWS HIGHLIGHTS

- Introduces new Intel® Xeon® processor E7 v2 family designed for mission critical computing, featuring the industry's largest memory support[1] to enable large data sets to be analyzed rapidly and deliver real-time insights based on a vast amount of diverse data.
- Delivers up to 80 percent more performance and up to 80 percent lower total cost of ownership (TCO) than alternative RISC architectures[2].
- The new processor family achieves twice the average performance and has four times the I/O bandwidth of the previous generation[3].

SANTA CLARA, Calif.--(BUSINESS WIRE)-- To help companies in a variety of industries from retail and healthcare to banking and transportation turn data into actionable insights, Intel Corporation today introduced the Intel® Xeon® processor E7 v2 family.

Intel® Xeon® Processor E7 v2 Family (Photo: Business Wire)

Using analytics enables businesses to make decisions that improve top-line and bottom-line results. The Intel Xeon processor E7 v2 family delivers new capabilities to process and analyze large, diverse amounts of data to unlock information that was previously inaccessible.

"Organizations that leverage data to accelerate business insights will have a tremendous edge in this economy," said Diane Bryant, senior vice president and general manager of Intel's Data Center Group. "The advanced performance, memory capacity and reliability of the Intel Xeon processor E7 v2 family enable IT organizations to deliver real-time analysis of large data sets to spot and capitalize on trends, create new services and deliver business efficiency."

Big data and the Internet of Things (IoT) are providing enormous opportunities for many organizations to grow as they create revenue-generating services from the information they are able to derive. The big data technology and services market is expected to grow 27 percent annually through 2017 to reach $32.4 billion[4]. A leading driver of this growth is the immense amount of data coming from connected devices making up the IoT, which is projected to grow to 30 billion devices by 2020[5]. Investments in the highest performing technologies and analysis solutions can also deliver significant cost savings. For example,

Intel's IT organization expects to achieve cost savings and increased bottom-line revenue of nearly half a billion dollars through use of analytics solutions by 2016.

New Big Data Processing and Analytics Capabilities with Relentless Reliability

The Intel Xeon processor E7 v2 family has triple the memory capacity of the previous generation processor family, allowing much faster and thorough data analysis. In-memory analytics places and analyzes an entire data set – such as an organization's entire customer database – in the system memory rather than on traditional disk drives. This method is gaining in popularity due to the increased need for more complex analytics. Industry analyst firm Gartner expects 35 percent[6] of mid- to large-sized companies will adopt in-memory analytics by 2015, up from 10 percent in 2012 and predicts at least 50 percent of Global 2000 companies will use in-memory computing to deliver significant additional benefits from investments in enterprise resource planning (ERP).

eBay, one of the world's largest and most complex online marketplaces, handles massive data sets of more than 50 petabytes (PB) for more than 100 million users. Based on initial testing of the new Intel Xeon processor E7 v2 and SAP's HANA* in-memory analytics software, eBay has seen greater performance[7] and understanding of larger data sets that will help drive additional revenue opportunities for its customers.

Built for up to 32-socket[8] servers, with configurations supporting up to 15 processing cores and up to 1.5 terabytes (TB) of memory per socket, the new processor family achieves twice the average performance of the previous generation[3]. These enhancements help businesses that run mission critical applications including business support systems (BSS), customer relationship management (CRM), and ERP to operate more efficiently, at lower cost and with faster response times[2]. For example, a sales team with these capabilities can maximize revenue by pinpointing the best time to sell a product, or let an oil and gas company better predict when its platforms require preventative maintenance.

To reduce data bottlenecks, the Intel Xeon Processor E7 v2 family features Intel® Integrated I/O, Intel® Data Direct I/O and support for PCIe 3.0*, achieving up to four times the I/O bandwidth over the previous generation[9] and providing extra capacity for storage and networking connections.

System uptime and reliability also remains a key requirement for mission critical applications. The Intel Xeon Processor E7 v2 family continues Intel's tradition of delivering world-class reliability, availability and serviceability (RAS). Intel® Run Sure Technology[10] is designed for "five nines" solutions essential for business-critical data by reducing the frequency and cost of planned and unplanned downtime.

Extensive Industry Support

Starting today, 21 system manufacturers from around the world will announce more than 40 Intel Xeon processor E7 v2 family-based platforms. These manufacturers include Asus*, Bull*, Cisco*, Dell*, EMC*, Fujitsu*, Hitachi*, HP*, Huawei*, IBM*, Inspur*, Lenovo*, NEC*, Oracle*, PowerLeader*, Quanta*, SGI*, Sugon*, Supermicro*, Unisys* and ZTE*. Numerous analytics software vendors also support Xeon processor E7 v2 family-based platforms, including Altibase*, IBM*, Microsoft*, Oracle*, Pivotal*, QlikView*, Red Hat*, SAP*, SAS*,

Software AG*, Splunk*, Sungard*, Teradata*, TongTech*, Vertica* and YonYou*.

About Intel

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The TCO or other cost reduction scenarios described in this document are intended to enable you to get a better understanding of how the purchase of a given Intel product, combined with a number of situation-specific variables, might affect your future cost and savings. Nothing in this document should be interpreted as either a promise of or contract for a given level of costs.

1. Intel Xeon processor E7 v2 family provides the largest memory footprint of 1.5 TB per socket vs 1TB per socket delivered by alternative architectures, based on published specs.

2. Up to 80% leadership performance on Xeon E7 v2 over IBM Power* 7+ at ~80% lower TCO claim based on Intel estimated SPECint*_rate_base2006 results and pricing of comparable 4-socket rack server using Intel® Xeon® processor E7-4890 v2 (37.5M Cache, 2.8 GHz, 15-Cores) to IBM POWER*750 using POWER7+ (80M Cache, 4.0 GHz, 8-Cores) as of December 2013.

3. Up to double the average generational performance based on results of six key industry-standard workloads: SPECint*_rate_base2006^{+}, SPECfp*_rate_base2006^{+}, brokerage on-line transaction processing (OLTP) database workload, warehouse supply chain OLTP database workload, STREAM memory bandwidth and LINPACK GFLOPS. Configurations: 4-socket server using Intel® Xeon® processor E7-4890 v2 (new processor) vs. E7-4870

(previous generation processor). Learn more about Xeon E7 v2 performance at http://www.intel.com/content/www/us/en/benchmarks/server/xeon-e7-summary.html

4. Source: IDC WW Big Data Technology and Services 2013-2017 Forecast, Doc #244979, Dec 2013

5. Source: IDC Market Analysis Perspective: Worldwide Enterprise Servers, 2013 — Technology Market, Doc #245080

6. Source: Gartner "Top Technology Trends, 2013: In-Memory Computing Aims at Mainstream Adoption"

7. eBay's test systems configurations are not disclosed but the observed results are consistent with Intel's internal measurements from November 2013 showing 2x performance increase when using SAP HANA based on these configurations:
Baseline 1.0x: Intel E7505 Chipset using four Intel Xeon processors E7-4870 (4P/10C/20T, 2.4GHz) with 256GB DDR3-1066 memory scoring 110,061 queries per hour. Source: Intel Technical Report #1347.
New Generation 2x: Intel C606J Chipset using four Intel Xeon processors E7-4890 v2 (4P/15C/30T, 2.8GHz) with 512GB DDR3-1333 (running 2:1 VMSE) memory scoring 218,406 queries per hour. Source: Intel Technical Report #1347.

8. Requires node controller (available from 3rd party sources).

9. Up to 4X I/O bandwidth claim is based on Intel estimates on an internal bandwidth tool running the 1R1W test of the Intel Xeon processor E7-4890 v2 performance normalized against the improvements over dual-IOH Intel Xeon processor E7-4870.

10. No computer system can provide absolute reliability, availability or serviceability. Requires an Intel® Xeon® processor E7-8800/4800/2800 v2 product families or Intel® Itanium® 9500 series-based system (or follow-on generations of either). Built-in reliability features available on select Intel® processors may require additional software, hardware, services and/or an internet connection. Results may vary depending upon configuration. Consult your system manufacturer for more details.

Photos/Multimedia Gallery Available:
http://www.businesswire.com/multimedia/home/20140218006534/en/

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