July 22, 2013

Intel Aims to “Re-Architect” Datacenters to Meet Demand for New Services

New Era of Services-Oriented Datacenters Gives Opportunities for Expansion

NEWS HIGHLIGHTS

- Reveals new details of the forthcoming 22nm Intel® Atom™ processors C2000 product family, enabling the company to target a larger portion of the datacenter market.
- Unveils future roadmap of 14nm datacenter products including a system-on-chip (SoC) that for the first time will incorporate Intel’s next-generation Broadwell architecture to address an even broader range of workloads.
- Rackspace Hosting* announces that it will deploy a new generation of rack designs as part of its hybrid cloud solutions aligned with Intel’s Rack Scale Architecture vision.

SAN FRANCISCO--(BUSINESS WIRE)-- As the massive growth of information technology services places increasing demand on the datacenter, Intel Corporation today outlined its strategy to re-architect the underlying infrastructure, allowing companies and end-users to benefit from an increasingly services-oriented, mobile world.

The company also announced additional details about its next-generation Intel® Atom™ processor C2000 product family (codenamed “Avoton” and “Rangeley”), as well as outlined its roadmap of next-generation 14nm products for 2014 and beyond. This robust pipeline of current and future products and technologies will allow Intel to expand into new segments of the datacenter that look to transition from proprietary designs to more open, standards-based compute models.

“Datacenters are entering a new era of rapid service delivery,” said Diane Bryant, senior vice president and general manager of the Datacenter and Connected Systems Group at Intel. “Across network, storage and servers we continue to see significant opportunities for growth. In many cases, it requires a new approach to deliver the scale and efficiency required, and today we are unveiling the near and long-term actions to enable this transformation.”

As more mobile devices connect to the Internet, cloud-based software and applications get smarter by learning from the billions of people and machines using it, thus resulting in a new era of context-rich experiences and services. It also results in a massive amount of network connections and a continuous stream of real-time, unstructured data. New challenges for networks, computing and storage are emerging as the growing volume of data is transported, collected, aggregated and analyzed in datacenters. As a result, datacenters must be more agile and service-driven than ever before, and easier to manage and operate.

The role of information technology has evolved from being a way to reduce costs and increase corporate productivity to becoming the means to deliver new services to

businesses and consumers. For example, Disney* recently started providing visitors with wirelessly connected-wristbands to enhance customers' in-park experience through real-time data analytics. Additionally, a smart traffic safety program from Bocom* in China seeks to identify traffic patterns in a city of ten million people and intelligently offers better routing options for vehicles on the road.

'Re-Architecting' Network, Storage and Servers

To help companies prepare for the next generation of datacenters, Intel revealed its plans to virtualize the network, enable smart storage solutions and invest in innovative rack optimized architectures.

Bryant highlighted Intel's Rack Scale Architecture (RSA), an advanced design that promises to dramatically increase the utilization and flexibility of the datacenter to deliver new services. Rackspace Hosting*, an open cloud company, today announced the deployment of new server racks that is a step toward reaching Intel's RSA vision, powered by Intel® Xeon® processors and Intel Ethernet controllers with storage accelerated by Intel Solid State Drives. The Rackspace design is the first commercial rack scale implementation.

The networking industry is on the verge of a transition similar to what the server segment experienced years ago. Equipping the network with open, general purpose processing capabilities provides a way to maximize network bandwidth, significantly reduce cost and provide the flexibility to offer new services. For example, with a virtualized software defined network, the time to provision a new service can be reduced to just minutes from two to three weeks with traditional networks. Intel introduced Open Network Platform reference designs to help OEMs build and deploy this new generation of networks.

Data growth is a challenge to all datacenters and transferring this large volume of data for processing within a traditional, rigid storage architecture is costly and time consuming. By implementing intelligent storage technologies and tools, Intel is helping to reduce the amount of data that needs to be stored, and is improving how data is used for new services.

Traditional servers are also evolving. To meet the diverse needs of datacenter operators who deploy everything from compute intensive database applications to consumer facing Web services that benefit from smaller, more energy-efficient processing, Intel outlined its plan to optimize workloads, including customized CPU and SoC configurations.

As part of its strategy, Intel revealed new details for the forthcoming Intel® Atom™ processors C2000 product family aimed for low-energy, high-density microservers and storage (codenamed "Avoton"), and network devices (codenamed "Rangeley"). This second generation of Intel's 64-bit SoCs is expected to become available later this year and will be based on the company's 22nm process technology and the innovative Silvermont microarchitecture. It will feature up to eight cores with integrated Ethernet and support for up to 64GB of memory.

The new products are expected to deliver up to four times[1,3] the energy efficiency and up to seven times[1,2] more performance than the first generation Intel Atom processor-based server SoCs introduced in December last year. Intel has been sampling the new Intel Atom processor server product family to customers since April and has already more than doubled the number of system designs compared to the previous generation.

Roadmap for Expansion

The move to services-oriented datacenters presents considerable opportunities for Intel to expand into new segments. To help bolster the underlying technologies that power much of the next generation of datacenters, Intel outlined its roadmap of next-generation products based on its forthcoming 14nm process technology scheduled for 2014 and beyond. These products are aimed at microservers, storage and network devices and will offer an even broader set of low-power, high-density solutions for their Web-scale applications and services.

The future products include the next generation of Intel Xeon processors E3 family (codenamed “Broadwell”) built for processor and graphic-centric workloads such as online gaming and media transcoding. It also includes the next generation of Intel Atom processor SoCs (codenamed “Denverton”) that will enable even higher density deployments for datacenter operators. Intel also disclosed an addition to its future roadmap – a new SoC designed from the ground up for the datacenter based on Intel’s next-generation Broadwell microarchitecture that follows today’s industry leading Haswell microarchitecture. This SoC will offer higher levels of performance in high density, extreme energy efficient systems that datacenter operators will expect in this increasingly services-oriented, mobile world.

About Intel

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For more information go to http://www.intel.com/performance.

[1]vs Intel® Atom™ S2100. Intel Atom C2000 pre-production silicon measurements. Intel internal measurements as of July 2013.

[2]Dynamic Web Benchmark: Atom S1260 (8GB,SSD,1GbE), Estimated Score=1522. Atom C2xxx (32GB, SSD,10GbE), Estimated Score=11109. Atom S1260: DBC SDP w/Intel® Atom™ S1260 (2.0GHz, 2C), Hyper-Threading Enabled, 1x8GB DDR3-1333 MHz UDIMM ECC, BIOS version D134.4, Fedora* 17, Linux Kernel 3.3.4-5fc.x86_64, Apache 2.2.22, PHP 5.4.7, Boot Drive 1x 150GB SSD, Addl Drive 2x 150GB SSD, 2xGbE, Score: 1522

Atom C2xxx: MPK SDP w/Intel® Atom™ C2xxx (8C), Turbo Disabled, 4x8GB DDR3-1600 MHz UDIMM ECC, BIOS version 18D05, Fedora* 17, Linux Kernel 3.3.4-5fc.x86_64, Apache 2.2.22, PHP 5.4.7, Boot Drive 1x150GB SSD, Addl Drive 1x 800GB SSD, 1x10GbE, Score: 11109

[3]Results are estimated by Intel using the SPEC benchmark software cited and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.
Atom™ S1260: FOR.INTEL.cpu2006.1.2.ic13.1.linux64.01june2013, Supermicro* 5017A-EF with one Intel® S1260 processor (2-core 2.0GHz), EIST Enabled, Hyper-Threading Enabled, 8GB memory (1x 8GB DDR3-1333 UDIMM ECC), 250GB SATA 7200RPM HDD, Red Hat Enterprise Linux 6.4 . Score:Estimated SPECint*int_rate_base2006=18.7. Est. Node Power=20W
Atom™ C2xxx: FOR.INTEL.cpu2006.1.2.ic13.1.linux64.01june2013, Intel® Mohon Peak Alpha platform with one Intel® Avoton processor (8-core), Turbo Boost Disabled, 16GB memory (2x 8GB DDR3-1600 UDIMM ECC), 250GB SATA 7200RPM HDD, Red Hat Enterprise Linux 6.4. Score: Estimated SPECint_rate_base2006=69, Est. Node Power=19W

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Source: Intel Corporation