



AMD OPTERON™ PROCESSORS

Q1 2011 Update – Under Embargo until 2/14/11, 12:01 AM

Server Product Marketing



AMD

AMD OPTERON™ PLATFORM MOMENTUM

Outstanding processor technology...



InfoWorld

2011 Technology of the Year Award¹

**AMD Opteron™ 6100
Best CPU for Parallel Processing**

...leads to award-winning products



Dell PowerEdge™ R815



CRN

- Search Data Center 2010 Silver Medal—Server Hardware²
- CRN 2010 Server of the year³

¹ <http://www.infoworld.com/d/infoworld/infoworlds-2011-technology-the-year-award-winners-285¤t=3&last=4>

² <http://searchdatacenter.techtarget.com/review/Dell-PowerEdge-R815-Rack-Server?channelId=ebfc64c24ffc210VqnVCM100000d01c80aRCRD>

³ http://www.crn.com/slide-shows/channel-programs/228800182/the-best-products-of-2010.htm;jsessionid=SbYoWX7SLVwG7dRyitiyQA**.ecappj01?pgno=10



NEW / RECENT AMD OPTERON™ PROCESSOR-BASED PLATFORMS



Dell PowerEdge C6145

Dual 4P AMD Opteron 6100 Series Platform
Maximum compute density - 96 cores in 2U



IBM X3755 M3

4P 2U AMD Opteron 6100 Series Platform
32 cores are 5% less expensive than 2P Intel-based X3650 M3 with only 12 total cores¹



Cray XE6m

Scalable AMD Opteron 6100 Series Platform
Clusters for smaller deployments

And more platforms on the way!

¹ Comparison between similar configurations of IBM 3755 M3 with four AMD Opteron 6128 processors and 32GB DDR3-1333 memory (\$7,777) vs. IBM x3650 M3 with 2 Intel Xeon X5680 processors and 32GB DDR3-1333 memory (\$8,189). Pricing from www.ibm.com as of 2/3/2011



NEW AMD OPTERON™ PROCESSORS AVAILABLE IMMEDIATELY

- AMD is announcing 5 new models of the award-winning AMD Opteron™ 6100 Series processors
 - New 12-core models for highly scalable applications
 - New 8-core models for more clock-speed sensitive applications
- All processors are available immediately through distribution and AMD's OEM partners



New 12-Core AMD Opteron 6100 Series

Model	ACP	Frequency	Cores	Price
AMD Opteron 6166 HE	65	1.8GHz	12	\$873
AMD Opteron 6176	80	2.3GHz	12	\$1,265
AMD Opteron 6180 SE	105	2.5GHz	12	\$1,514

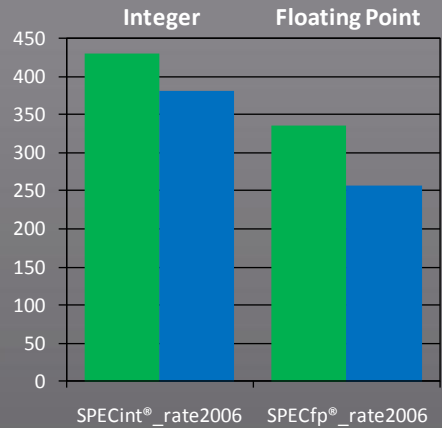
New 8-Core AMD Opteron 6100 Series

Model	ACP	Frequency	Cores	Price
AMD Opteron 6132 HE	65	2.2GHz	8	\$591
AMD Opteron 6140	80	2.6GHz	8	\$989

DELIVERING OUTSTANDING PERFORMANCE AND VALUE

New Products

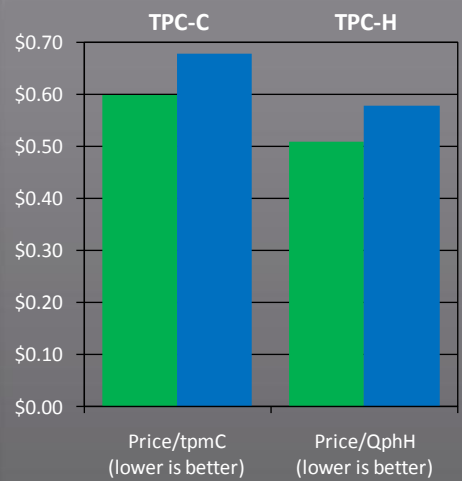
Server Throughput Performance



■ 2 x AMD Opteron™ processor Model 6180 SE (12-core 2.5GHz)
 ■ 2 x Intel Xeon processor Model X5680x (6-core 3.33GHz)

Up to 30% higher performance
(higher is better)

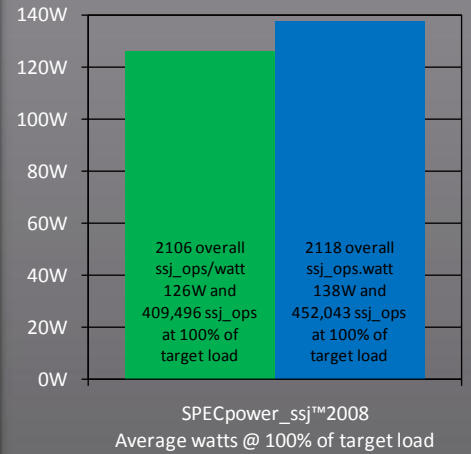
Database Value



■ 2 x AMD Opteron™ processor Model 6176 SE
 ■ 2 x Intel Xeon processor Model X5680

Up to 12% better database value
(lower is better)

Server Power Consumption (Lower is better)



■ 2 x AMD Opteron™ processor Model 4164 EE
 ■ 2 x Intel Xeon processor Model L5630

And still incredibly power efficient

SPEC, SPECint, SPECfp, and SPECpower are registered trademarks of the Standard Performance Evaluation Corporation. The results for AMD Opteron™ processor Model 6180 SE are based upon data submitted to Standard Performance Evaluation Corporation as of February 3, 2011. The other results stated above reflect results published on www.spec.org as of February 3, 2011. The SPECint®_rate2006 and SPECfp®_rate2006 comparisons presented above are based on the best performing two-socket servers using AMD Opteron™ processors Model 6180 SE and Intel Xeon processors Model X5680, operating at each processor's default frequency. The SPECpower_ssj2008 comparison presented above is based on two-socket servers with the lowest average power at 100% of target load. For the latest SPEC results, visit www.spec.org. TPC-C, TPC-H, tpmC, and QphH are trademarks of the Transaction Performance Council. The Price/tpmC and Price/QphH results stated above reflect results published on www.tpc.org as of February 3, 2011. The comparisons presented above are based on the best performing two-socket servers using AMD Opteron™ processors Model 6176 SE and Intel Xeon processors Model X5680. For the latest TPC results, visit www.tpc.org. Please see backup slides for configuration information.



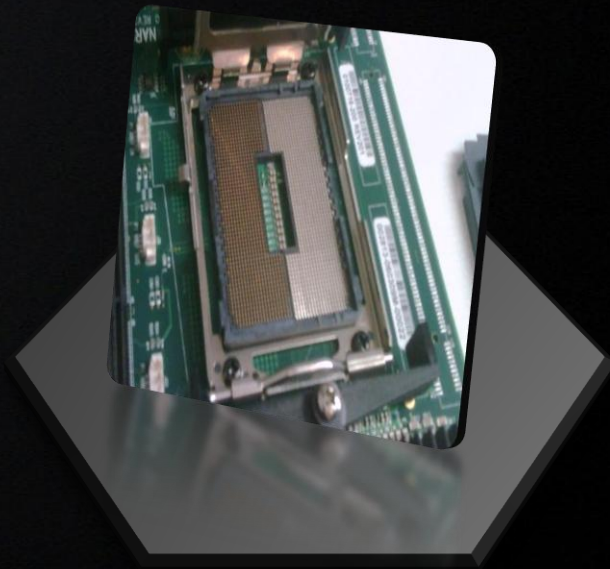
PAVING THE WAY FOR BULLDOZER

■ “Bulldozer” Schedule remains on track:

- Taped out in Q2 2010
- Sampled with partners in Q4 2010
- Production expected to begin in Q2
- Widespread availability and launch expected in Q3 2011

■ 16-core “Interlagos” and 8-core “Valencia” feature:

- Flex FP with 256-bit floating point
- AMD Turbo CORE with up to 500MHz all core boost
- Up to 50% greater compute throughput
- Up to 50% greater memory throughput



**Today’s G34 sockets support
“Bulldozer”-based processors**

- Utilize current designs
- Accelerate time to market

The above reflect current expectations regarding features and performance versus current generation and is subject to change



SUMMARY SLIDE

- New models of AMD Opteron™ 6100 Series processors
- Delivering greater performance, scalability and compatibility for enterprise applications
- Compatible with existing AMD Opteron 6000 series platforms
- AMD's performance lead continues to grow with these new models
- New AMD Opteron platforms extend our reach to new parts of the market



BACKUP SLIDES

SYSTEM BENCHMARK CONFIGURATIONS (1 OF 4)

■ SPECint®_rate2006

- 430 using 2 x AMD Opteron™ processors Model 6180 SE in Dell PowerEdge R715 server, 64GB (16 x 4GB DDR3-1333) memory, SuSE Linux® Enterprise Server 11, x86 Open64 4.2.4 Compiler Suite
- 382 using 2 x Intel Xeon processors Model X5680 in ASUS RS700-E6 server, 48GB (12 x 4GB DDR3-1333) memory, SuSE Linux® Enterprise Server 11, Intel Professional Compiler 11.1

<http://www.spec.org/cpu2006/results/res2010q2/cpu2006-20100524-11145.html>

■ SPECfp®_rate2006

- 335 using 2 x AMD Opteron™ processors Model 6180 SE in Dell PowerEdge R715 server, 64GB (16 x 4GB DDR3-1333) memory, SuSE Linux® Enterprise Server 11, x86 Open64 4.2.4 Compiler Suite
- 257 using 2 x Intel Xeon processors Model X5680 in Fujitsu PRIMERGY RX300 S6 server, 48GB (12 x 4GB DDR3-1333) memory, SuSE Linux® Enterprise Server 11, Intel Professional Compiler 11.1

<http://www.spec.org/cpu2006/results/res2010q1/cpu2006-20100301-09735.html>



SYSTEM BENCHMARK CONFIGURATIONS (2 OF 4)

■ TPC-C

- \$0.60 per tpmC using 2 x AMD Opteron™ processors Model 6176 SE in HP ProLiant DL385 G7 server, 256GB (8 x 16GB and 16 x 8GB DDR3-1066) memory, Microsoft® Windows Server® 2008 R2 Enterprise Edition, Microsoft® SQL Server® 2005 Enterprise x64 Edition SP3

http://www.tpc.org/results/individual_results/HP/HP_ProLiant_DL385G7_100408_v3_es.pdf

- \$0.68 per tpmC using 2 x Intel Xeon processors Model X5680 in HP ProLiant DL380 G7 server, 192GB (12 x 16GB DDR3-1066) memory, Microsoft® Windows Server® 2008 R2 Enterprise Edition, Microsoft® SQL Server® 2005 Enterprise x64 Edition SP3

http://www.tpc.org/results/individual_results/HP/hp_DL380_TPCC_051110_ES.pdf



SYSTEM BENCHMARK CONFIGURATIONS (3 OF 4)

■ TPC-H

- \$0.51 per QphH using 2 x AMD Opteron™ processors Model 6176 SE in HP ProLiant DL385 G7 server, 192 GB (24 x 8GB DDR3-1333) memory, Microsoft® Windows Server® 2008 R2 Enterprise Edition, Microsoft® SQL Server® 2008 R2 Enterprise Edition

http://www.tpc.org/results/individual_results/HP/HP_DL385G7_100GB_2P_2.3GHz12C_071410_ES.pdf

- \$0.58 per QphH using 2 x Intel Xeon processors Model X5680 in HP ProLiant DL380 G7 server, 192GB (12 x 16GB DDR3-1066) memory, Microsoft® Windows Server® 2008 R2 Enterprise Edition, Microsoft® SQL Server® 2008 R2 Enterprise Edition

http://www.tpc.org/results/individual_results/HP/HP_DL380G7_100GB_2P_3.3GHz6C_100702_ES.pdf



SYSTEM BENCHMARK CONFIGURATIONS (4 OF 4)

- SPECpower_ssj™ 2008

- 126W at 100% of target load using 2 x AMD Opteron™ processors Model 4164 EE in ZT Systems 1253Ra Datacenter Server, 16GB (4 x 4GB DDR3-1333 1.35V) memory, 128GB Western Digital SATA SSD disk drive, Emacs V1E-5250V power supply, Microsoft® Windows Server® 2008 R2 Enterprise Edition

http://www.spec.org/power_ssj2008/results/res2010q2/power_ssj2008-20100601-00265.html

- 138W at 100% of target load using 2 x Intel Xeon processors Model L5630 in NEC Express5800/E120b-1 server, 16GB (4 x 4GB DDR3-1333 1.35V) memory, 50GB SATA SSD disk drive, Delta TDPS-360AB E power supply, Microsoft® Windows Server® 2008 Enterprise x64 Edition

http://www.spec.org/power_ssj2008/results/res2010q3/power_ssj2008-20100907-00288.html



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