AMD and Dell:
Industry-Leading Platforms for Cloud/Web Environments

With more than two million AMD processors engaged in cloud computing environments worldwide,[1] Dell and AMD have come together to design and deliver the performance, scalability and efficiency needed in server technology to address the cloud/web market.

AMD Opteron™ Processors – Fueling the Cloud

AMD Opteron™ processors provide cloud architects with a powerful foundation to build installations that are energy efficient and easy to manage with all the performance needed to deliver a great user experience. AMD has redesigned its core architecture to optimize execution paths that help reduce the total power consumption. With the new architecture, featuring 4-core through 16-core processors, Cloud and web deployments can benefit from more core density, handle growing numbers of transactions, and have up to 160% more real cores per server than the competition.[2]

AMD Opteron™ Series Platforms	
AMD Opteron™ 6000 Series processors – The world's first 16-core x86 processor, delivering a rich mix of performance, scalability and efficiency for today's highly threaded computing environments.	**AMD Opteron™ 4000 Series processors –** The world's lowest power processor – at fewer than five watts per core[3] – designed for power efficiency, yet able to handle demanding workloads.

Why More Cores Matter for Cloud/Web Computing

Cloud and web are transaction-heavy environments that often have need for "elastic" computing resources or rapidly scaling up the number of cores for peak environments, while still maintaining low power environments in times of low activity.

AMD Opteron™ Processor

Features	Benefit
More Cores[2]	Help cloud environments keep response times low because the server can efficiently handle a large number of transactions simultaneously.
Power Efficiency	The power efficiency of our processors means that AMD can deliver 2X the cores in 2P without doubling the power rating.[4] AMD Opteron™ processors also include new AMD-P 2.0 technology, a suite of advanced features that can help to significantly reduce energy usage. Including C6 power state, which reduces processor power consumption by up to 46%[5] during low utilization periods adding the capability to handle peak workloads and stay within established service level agreements.
Scalability	Better core density per server allows for scaling during peak workloads, while generating the maximum amount of processing power per foot of datacenter floor space.
More Memory Channels[6]	Provides increased paths to access the information in memory and can read and write more information simultaneously over the channels.

The AMD and Dell Difference: Innovative Features

Delivering a Unique Balance of Performance, Scalability and Efficiency

- The most scalable x86 processors[2] deliver unmatched flexibility to keep up with changing business needs
- Advanced power efficiency to help reduce power and cooling costs
- Cost-effective, consistent building blocks for scale-out server environments
- Comprehensive features to address your growing business needs: AMD-V™, AMD-P, AMD Turbo CORE technology and Direct Connect Architecture 2.0

AMD and Dell Cloud/Web Portfolio

✔ = Good ✔✔ = Better ✔✔✔ = Best

	PowerEdge R815	PowerEdge R715	PowerEdge R415	PowerEdge R515	PowerEdge C5125	PowerEdge C6105	PowerEdge C6145	PowerEdge M915
Form Factor	4 socket, 2U rack	2 socket, 2U rack	2 Socket, 1U rack	2 Socket, 2U rack	Twelve 1 socket servers in 3U dense rack chassis	Four 2 socket servers in 2U dense rack chassis	Two 4 socket servers in 2U dense rack 4 chassis	4 socket blade
Processor	AMD Opteron 6000 Series processor	AMD Opteron 6000 Series processor	AMD Opteron 4000 Series processor	AMD Opteron 4000 Series processor	AMD Athlon™, AMD Phenom™ processors	AMD Opteron 4000 Series processor	AMD Opteron 6000 Series processor	AMD Opteron 6000 Series processor
Public Cloud	✔✔✔	✔			✔✔	✔✔✔	✔✔✔	✔✔
Private Cloud	✔✔✔	✔✔✔	✔	✔		✔✔	✔✔	✔✔✔
Top Hosters	✔✔✔	✔✔	✔✔	✔✔	✔✔✔	✔✔✔	✔✔✔	✔✔
Regional Hosters	✔✔✔	✔✔	✔✔✔	✔✔✔	✔✔✔	✔✔✔	✔✔✔	✔

Learn More!

Additional information on AMD and Dell solutions for cloud computing include:

- AMD Opteron™ 6200 Series Processors and the Cloud – **http://server.amd.com/LP=237**
- ITPRO: Dell PowerEdge™ R815 Review – **http://www.itpro.co.uk/625213/dell-poweredge-r815-review**
- AMD Opteron™-based Dell PowerEdge™ Servers – **http://www.dell.com/poweredge/amd**

1 Source: AMD internal estimates as of Q4 2011
2 Comparison of 16-core AMD Opteron™ 6200 Series processor with 6-core Intel Xeon® 5600 Series processor and 10-core Intel Xeon E7 Series processors as of November 2011. SVR-30
3 As of November 2011, AMD Opteron™ processor Models 4200 EE have the lowest known power per core of any x86 server processor, at 35W TDP (35W/8 = 4.375W/core). Intel's lowest power per core server processor, Intel Xeon L5630, is 40W TDP (40W/4 = 10W/core). See http://www.intel.com/content/www/us/en/processors/xeon/xeon-processor-5000-sequence.html. Previous record held by AMD Opteron™ processor Models 4100 EE at 35W TDP / 6 cores = 5.83 W/core. SVR-58
4 TDP for the 6-core Intel Xeon X5680 is 130W (see http://www.intc.com/priceList.cfm). TDP for the 12-core AMD Opteron™ 6176 SE is 140W (see http://www.amd.com/us/products/server/processors/Pages/model-numbers.aspx#2). SVR-47
5 Based on testing in AMD Performance Labs as of August 2011, an AMD Opteron™ processor model 6174 (12-core 2.2GHz) consumes 11.7W in the active idle C1E power state while an AMD Opteron™ processor model 6276 (16-core 2.3GHz) consumes only 6.4W in the active idle C1E power state with new C6 power gating employed. System configuration: "Drachma" reference design kit, 32GB (8 x 4GB DDR3-1333) memory, 500GB SATA disk drive, Microsoft® Windows Server® 2008 x64 Enterprise Edition R2. SVR-60
6 AMD Opteron™ 6000 Series platform supports 4 memory channels, while the Intel Xeon 5600 and 7500 Series platforms only supports 3 memory channels. See http://www.intel.com/p/en_US/products/server/processor/xeon5000 and http://www.intel.com/p/en_US/products/server/processor/xeon7000. SVR-52

AMD