CALXEDA™

Ultra-Efficient Computing
For Hyper-Scale Applications

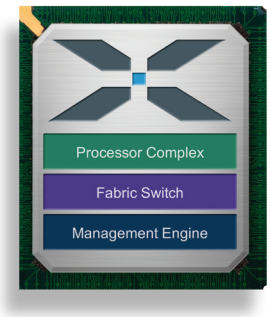
Revolutionizing the Data Center

Calxeda is bringing revolutionary efficiency to the data center, leveraging ultra-low power ARM processors as the foundation for next generation server designs. Innovative companies such as Hewlett-Packard are developing Calxeda-based servers, which will be available in volume later this year. Enabled by a rapidly expanding ecosystem of software partners and integrators, Calxeda is targeting large scale-out applications such as web serving, scalable analytics, and cloud storage. These applications will consume as little as 1/10th of the power and space of today's best-in-class installations, and can lower TCO by up to 50% or more, when deployed on Calxeda-based servers.

The Server, Redefined.

The Calxeda EnergyCore architecture delivers the right balance between system processing, networking, memory, and I/O subsystems needed for throughput efficiency. Like most modern-day processors, Calxeda EnergyCore Server-on-a-Chip (SoC) products integrate server-class memory and I/O controllers, reducing the number of chipsets – and the energy needed to power them – required within a server.

But unlike traditional processors, each EnergyCore processor is also designed with an integrated fabric switch for extreme scalability, and a dedicated management engine for out-of-band control and autonomic operation through intelligent power optimizations. By tightly integrating these hardware and software capabilities together, Calxeda delivers the performance needed for building the industry's most power- and space-efficient server clusters. The net result of this approach is a reduction in overall power consumption and space by up to 90%, allowing rapidly growing data centers to quickly realize dramatic operating and capex savings.



About Calxeda

Calxeda was founded in 2008 and funded with a $48M investment from ARM and seasoned venture capital investors in 2010. Based in Austin, Texas, Calxeda also provides focused support through its Asian subsidiary, Calxeda Asia Ltd., and a network of local distributors.

Calxeda introduced its EnergyCore SoC in November 2011 and demonstrated a Calxeda cluster running Ubuntu 12.04 and several workloads at Ubuntu Developer's Summit in Oakland, CA, in May 2012. As the first supplier to deliver a server-class ARM-based solution, Calxeda is leading the industry-wide transition to power- and cost-efficient datacenters.

The revolution starts with the industry's most popular Linux platform, the ARM processor architecture. ARM has been tuned for decades to become the most energy efficient platform for mobile devices, supporting a rich ecosystem of software and tools.

ARM®

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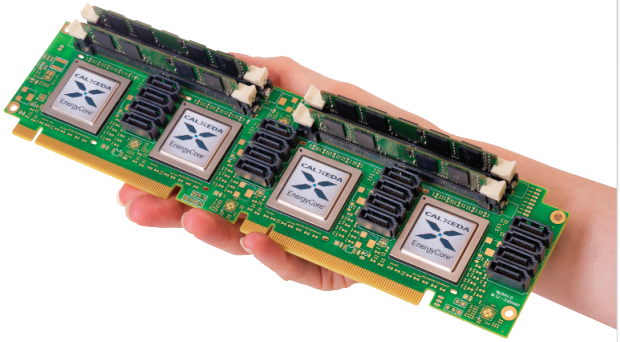
The Data Center Energy Crisis

The operating expense associated with power and cooling now dominates a server's cost of ownership, and will eclipse the hardware itself by a factor of 2X in 2012. IDC estimates that all servers worldwide consumed $44.5 billion of electricity in 2010.

In fact, the supply of electricity is often the constraining factor in a datacenter's ability to supply the needed compute power to keep businesses productive and satisfy consumer demand for services.

Enter Calxeda

With Calxeda, system vendors can replace an entire rack of traditional commodity servers with a simple 2U server containing at least 120 quad-core processors.



A 2U Calxeda-based server delivers the throughput of today's 40U server rack while consuming only 600 Watts.

The Calxeda Advantage

1/10 the power
1/2 the cost
All the performance

EnergyCore Technology

Calxeda's unprecedented energy and cost savings are made possible by the company's revolutionary EnergyCore Server-on-a-Chip (SoC) processor technology that is:

Efficient

Calxeda EnergyCore SoCs leverage field-proven ARM® Cortex™ cores. With four cores directly integrated with an on-chip fabric switch and management engine, this ultra-efficient platform enables full server designs that consume less than 5W of energy at typical max utilization and ½ watt when idle.

Scalable

An integrated network fabric switch within every EnergyCore SoC connects thousands of Calxeda server nodes into clusters capable of handling distributed applications at extreme scale.

Smart

Every EnergyCore SoC also contains an on-chip management engine – running on a separate, dedicated processor – that performs real-time power optimizations within the chip while simultaneously providing "always-on" remote management capabilities through standard interfaces.

CALXEDA™
Power Your Tomorrow

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