Model		Type 1	Type 2
Processor		Intel Xeon L5420 (2.50GHz, Low Voltage)	
Maximum processor (max cores)		68 (272 cores)	128 (512 cores)
Cache size	Level 1 cache / core	Instruction 16KB / Data 16KB	
	Level 2 cache / processor	2 x 6MB	
Maximum memory (per server)		24GB	
Expansion slots (per server) [vacant]		Low Profile PCI Express (x16) x 1 [1]	
Disk drive (per server)	Disk bays	2	
	Maximum capacity (*1)	320GB(160GB x 2)	
Network interface (per server)		1000BASE-T (100BASE-TX/10BASE-T) LAN (RJ-45) x 2, Management LAN (100BASE-TX/10BASE-T) LAN (RJ-45) x 1	
Physical specification	Dimension (W x D x H)	600mm x 1024mm x 2020mm	
	Number of server modules capable	1 to 17	1 to 32
	Server module type	1 or 2 server nodes per module	
	Weight (max)	393kg	553kg
Electric specification	Power source	AC200-240V 50/60Hz	
	Power consumption (per server)	260W	
Environment	Temperature — Operating	15-32℃	
	Temperature — Non-operating	5-45℃	
	Relative humidity — Operating	20-80% (Non-condensing)	
	Relative humidity — Non-operating	8-80% (Non-condensing)	
Support OS		VMWare ESX 3.5	
		VMWare ESXi 3.5 (*2)	
		Citrix Xen Server (*2)	
		Windows Server 2003 R2, Standard Edition	
		Windows Server 2003 R2, Enterprise Edition	
		Windows Server 2008 Standard (*2)	
		Windows Server 2008 Enterprise (*2)	
		RedHat Enterprise Linux 5 (*2)	

*1 1GB means 1000³B. Actual capacity will be less.
*2 Will be supported later.

Energy Saving Server

NEC ECO CENTER

NEC continues to promote an Eco Friendly business and product development strategy.

NEC Environmental Charter

NEC will contribute to a sound environment and a livable society through technology that harmonizes with nature and through production that is environmentally friendly. Our vision is a world where our natural environment is preserved, enabling all people to pursue their full potential.

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For further information, please contact:

Empowered by Innovation **NEC**

Cat.No. E08EC2

ECO CENTER Optimizes and Reduces Power Consumption through Advanced Hardware, Virtualization, and Platform Management Technologies

In data centers housing large numbers of servers with vast amount of mission critical data, "energy savings" and "space savings" are becoming more vital issues as data volumes grow. In the past, power supplies were not able to adapt to changes in server configurations and capacity, which led to reduced power efficiency. NEC's ECO CENTER leverages specially designed rack mounted hardware which combines advances in power efficiency, virtualization technology, and platform management capabilities to optimize power consumption. ECO CENTER delivers "energy savings" and "space savings" with high availability systems which minimizes power consumption.

Rack Configuration Saves Energy and Space

When it comes to reducing server energy consumption, it is more efficient to focus on the data center as a whole rather than each individual server. ECO CENTER's design focus is the "rack" – the data center's minimum configuration unit – which maximizes benefits. Thanks to a hardware configuration using server modules with improved power utilization and NEC's virtualization technology which consolidates virtual servers and realizes more efficient operational loads, ECO CENTER enables energy savings through optimized power efficiency.

Server Module
A server module contains up to two servers that share one power supply. A special rack cabinet is designed to house up to 32 server modules.
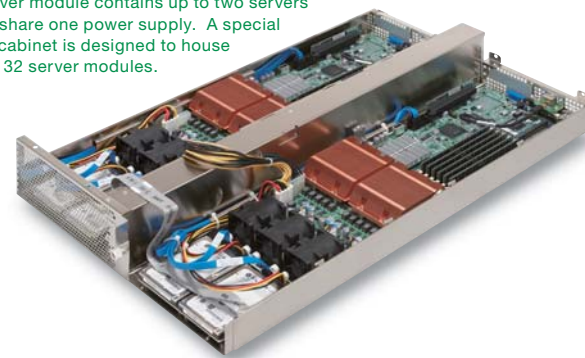
ECO CENTER Key Features

Energy Saving Components
ECO CENTER uses cutting-edge, energy saving components including CPU, chipset, and memory.

Optimized Cooling Efficiency
Cooling performance is improved by enhancing the mounting configurations of server modules, maximizing the front and rear panel aperture ratios, and consolidating external connection cables on the back of the rack in a high density configuration. These improvements minimize power requirements for cooling fans.

Highly Efficient Power Supply
ECO CENTER uses a highly efficient power supply with a power conversion rate of 89%. This improves efficiency under both peak and off-peak loads.

Space and Weight Reductions
ECO CENTER's server loading capacity per unit area is improved to 500kg/㎡ for 512 cores. Using an aluminum chassis and reducing the number of structural components achieves this weight reduction for server modules.

These key features optimize the hardware's power supply and reduce power consumption during operation as well as during stand-by mode.

Virtualization Technology and Platform Management Software Enable Power Efficient Operation

ECO CENTER realizes improved energy savings by leveraging a cutting-edge, energy saving processor/chipset and a highly efficient power supply. The typical server power conversion rate is usually 70 - 80% but ECO CENTER enjoys a much high power conversion rate of 89% while decreasing conversion loss.

In addition, ECO CENTER enables efficient operations by managing appropriate workloads with virtualization technology and virtual server consolidation.

Platform management software enables the virtualization technology to help save more energy. In order to maintain the most appropriate workload as determined by the virtualization technology, ECO CENTER executes continuous and autonomous server deployment. NEC's integrated virtualization and platform management software, "SigmaSystemCenter," provides comprehensive support such as monitoring workloads and operation status, planning appropriate redeployments, and managing virtual machines. With ECO CENTER NEC delivers a platform with both high availability and energy savings.

〈Power conversion rate〉
ECO CENTER
Typical server

High power conversion rate

Monitoring workloads — Planning redeployments — Optimizing workloads

CPU utilization — Appropriate workload — ON ON ON ON ON

CPU utilization — Appropriate workload — ON ON ON OFF OFF