Empowered by Innovation

NEC

Server Module hardware specification

Model	NEC Express5800/E120a	
Server Module type	2 server nodes	1 server node
Processor	Intel® Xeon® L5520 (2.26GHz)	
Processor cores	4	
Sockets per server	2	
Maximum memory per server	48GB	
Disk drive (per server) — Disk bays	2 (HDD, SSD*2)	
Disk drive (per server) — Maximum capacity*1	320GB (160GB HDD 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	
Expansion slot (per server)	Low profile PCI Express (x16) x1	
Dimension (W x D x H) (mm)	85 x 650 x 220	
Weight (max.)	9.5kg	6.9kg
Electric Specification — Power consumption (per server)	350W	
Electric Specification — Power source	AC200~240V 50/60Hz	
Environment — Temperature — Operating	15-32°C	
Environment — Temperature — Stand-by	5-45°C	
Environment — Relative humidity — Operating	20-80% (No condensation)	
Environment — Relative humidity — Stand-by	8-80% (No condensation)	
Supported OS	VMware ESX 4.0 Citrix XenServer 5 Microsoft Windows Server 2003 R2, Standard/Enterprise Edition (x86, SP2 or later) Microsoft Windows Server 2008 Standard/Enterprise RedHat Enterprise Linux 5*2	

*1 Calculation of the capacity of hard disk: 1GB=1000^{3}B
*2 Will be supported later.

Server Module Enclosure specification

Maximum Server Modules	10 (20 servers)
Unit height	10.5U
Dimension (W x D x H) (mm)	483 x 658 x 463
Weight (max.)	116kg

ECO CENTER Cabinet specification

Maximum Server Modules	40 (80 servers)
Maximum Server Module Enclosures	4
Cabinet height	42U
Dimension (W x D x H) (mm)	600 x 1042 x 2020 (42U)
Weight (max.)	655kg

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.

NEC Express5800
http://www.nec.com/express/

For further information, please contact:

Energy Saving Server

NEC Express5800/ECO CENTER

Optimize power consumption through advanced hardware, virtualization, and platform management technologies

http://www.nec.com/express/

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. NEC Express5800/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 (E120a)

A server module contains up to two servers that share one power supply. A special rack cabinet is designed to house up to 40 server modules.
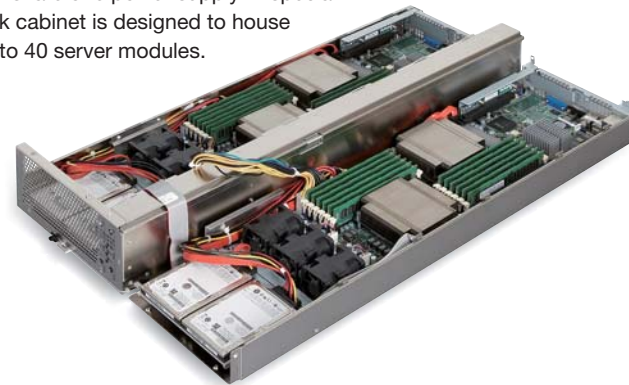
ECO CENTER Key Features

Energy Saving Components

ECO CENTER uses cutting-edge, energy saving components including CPU and memory, and supports Solid State Drive to achieve more power saving.

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 80 PLUS GOLD power supply with a power conversion rate of 92%. This improves efficiency under both peak and off-peak loads.

80 PLUS GOLD

Support for Industry-standard Racks

By using the ECO CENTER enclosure, up to 80 servers can fit not only into the 42U ECO CENTER Cabinet but into the existing standard racks.
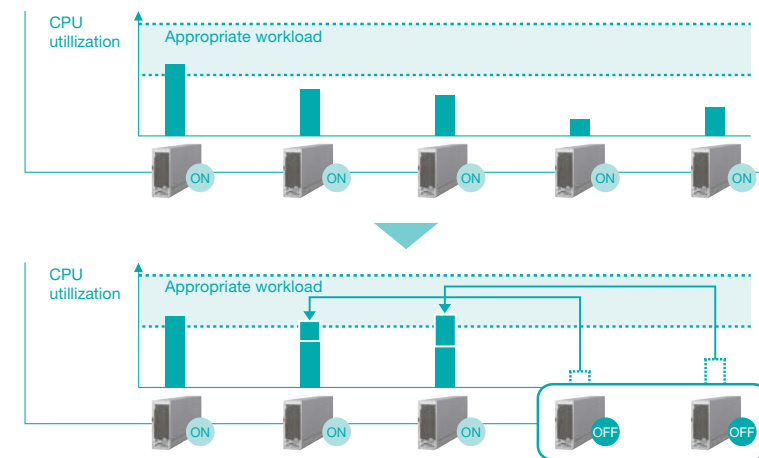
These key features optimize the hardware's power supply and reduce power consumption during operation as well as during stand-by mode.

Virtualization Technology and Platform Management Software Enable Power Efficient Operation

ECO CENTER realizes improved energy savings by leveraging a cutting-edge, energy saving processor and a highly efficient power supply. The typical server power conversion rate is usually 70 - 80% but ECO CENTER enjoys a much higher power conversion rate of 92% while decreasing conversion loss. In addition, ECO CENTER enables efficient operations by managing appropriate workloads with virtualization technology and virtual server consolidation.

<Power conversion rate>
100%
80%
60%
40%
20%
0%

ECO CENTER

Typical server

20% 40% 60% 80% 100% <output>

High power conversion rate
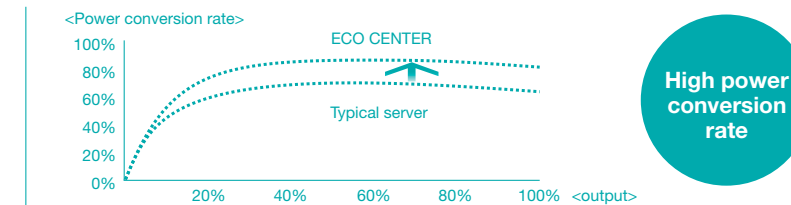
Platform management software enables the virtualization technology to help save more energy. In order to maintain the most appropriate workload as determined by the virtualization technology, ECO CENTER executes continuous and autonomous server deployment. NEC's integrated virtualization and platform 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.

Monitoring workloads → Planning redeployments → Optimizing workloads

CPU utillization — Appropriate workload

ON ON ON ON ON

CPU utillization — Appropriate workload

ON ON ON OFF OFF

Powerful computing in small footprint

NEC's 10.5U enclosure accommodates up to ten E120a server modules (20 servers) and its 42U cabinet can pack up to four enclosures, or up to 80 servers.
Industry-standard racks can also include four enclosures.

Server Module E120a → Server Module Enclosure (10.5U) → ECO CENTER Cabinet