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

NEC EXPRESS5800

For further information, please contact:

Cat.No. E05-11070011E

Empowered by Innovation

NEC

Blade Server

Express5800/SIGMABLADE

The high-density, energy-saving, solid foundation to leverage virtualization technologies for server consolidation

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

Enable your IT infrastructure to keep pace with changing business requirements

CPU Blade

Find which one matches your needs

2-Socket Blade

Express5800/B120a
Express5800/B120b

The standard blade server features up to two Intel® Xeon® processor 5500 and 5600 series and is suitable for server consolidation, including managing an existing server group.

Ideal applications
- Web
- Mail
- Clustering (scientific computation)
- Database

SAS Max.1.8TB
SATA Max.2TB
Memory Max.128GB

Express5800/B120b-h

This new model adopting a high speed 10GBASE-KR as its standard LAN interface, features high-performance processors and 18 DIMM slots to ensure smooth performance even with large numbers of virtual machines.

Ideal applications
- Large-scale server consolidation
- ERP
- Large-scale server virtualization

SSD Max.200GB
Memory Max.192GB

Express5800/B120a-d
Express5800/B120b-d

The SAN boot server is ideal for migrating from existing servers , featuring Intel® Xeon® processor 5500 and 5600 series, large-capacity memory, and scalable expansion slots.

Ideal applications
- Server consolidation
- Server virtualization

Memory Max.192GB

Optional Blade

Storage and I/O Blade

Express5800/AD106b

The AD106b provides large-capacity storage with support for advanced RAID levels and extensive I/O scalability to combine with CPU blades in the blade enclosure.

Tape Blade

Express5800/AT101a

This LTO4 tape blade provides high-speed, large-capacity backup to deliver cost-, space- and management-optimized data protection for your blade system.

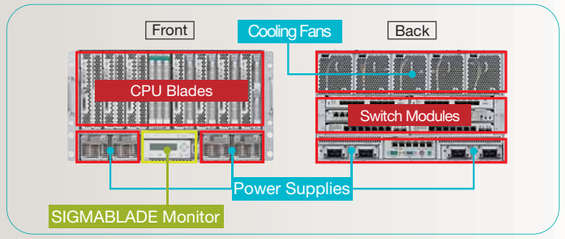
Blade Enclosures

NEC's blade enclosures support any consolidation scenario

For small and medium-scale consolidations of distributed systems

SIGMABLADE-M

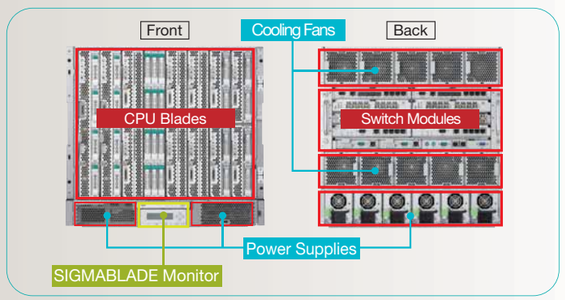
- A high-speed backplane in a 6U form factor (max. 60 Gbps)
- A maximum of 8 CPU blades and 6 switch modules
- Hot-plug redundant power supplies, fans and switches
- Up to 2 EM Cards for remote KVM functionality
- A SIGMABLADE Monitor to display status codes
- 80 PLUS® Gold certified energy efficient power supply



For medium and large-scale consolidations of mission-critical applications

SIGMABLADE-H v2

- A high-speed backplane in a 10U form factor (max. 80 Gbps)
- A maximum of 16 CPU blades and 8 switch modules
- Hot-plug redundant power supplies, fans and switches
- Up to 2 EM Cards for remote KVM functionality
- A SIGMABLADE Monitor to display status codes
- 80 PLUS® Silver certified energy efficient power supply



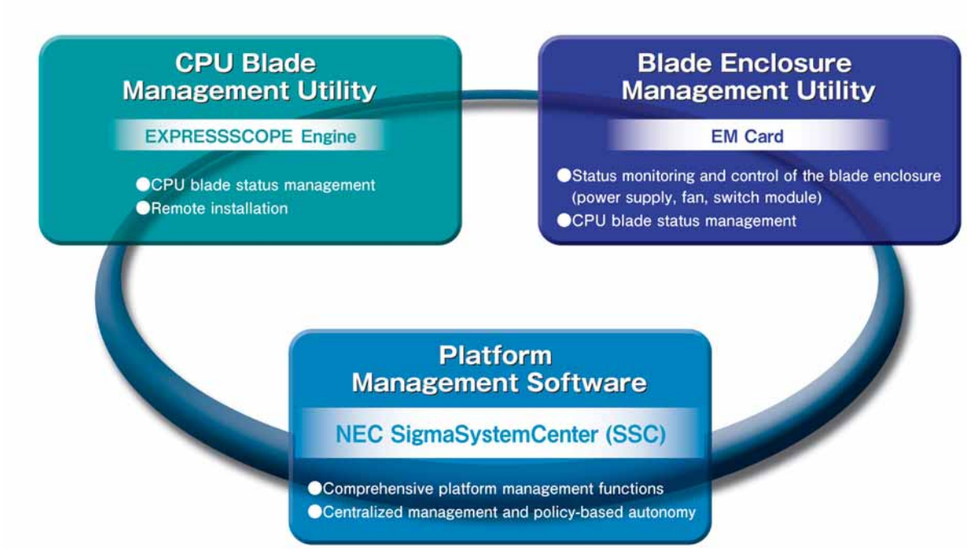
Support for extensive switch modules

The SIGMABLADE solves cabling headache by supporting a variety of FC/LAN pass-through and switch module options. These modules are designed to link the server blades to user ports without cables for better configuration connectivity. Unlike conventional rack-mount servers, the SIGMABLADE requires much fewer LAN and FC cables and frees administrators from cabling hassles.

Server Management

Hardware and software utilities for efficient management

Express5800/SIGMABLADE series include Enclosure Management (EM) Cards in the blade enclosure and an EXPRESSSCOPE Engine on CPU blades. Utilization of NEC SigmaSystemCenter (SSC) platform management software delivers centralized administration, policy-based autonomy, and reduced total operating costs and system administrator workload.



CPU Blade Management Utility

The NEC EXPRESSSCOPE Engine, a chipset on the CPU blade integrating a Baseboard Management Controller, and DianaScope remote management utility allow remote control and monitoring of a managed server even when its OS is not functioning (when the power is off, during BIOS startup, or if the OS stalls). They also enable proactive alerting, automatic operation of the managed server, and error logging and viewing of server settings from a remote web browser, thus creating a highly reliable operating environment. The NEC EXPRESSSCOPE Engine's function untangles the complexity of your remote server management.

Platform Management Software

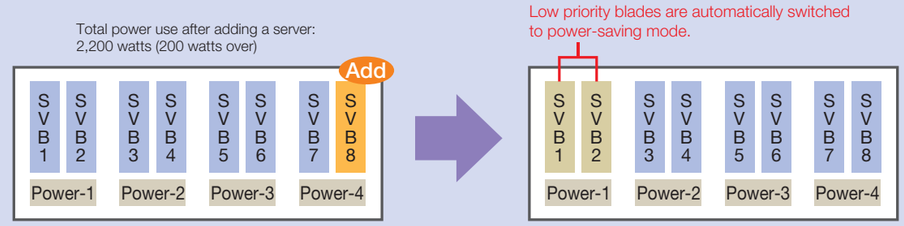
The SSC is an all-in-one platform management solution designed for centralized management and policy-based autonomy. It monitors CPU usage rates and dynamically allocates server resources based on changing operational loads.This single tool offers all of the functionality necessary for platform management without the need to distinguish between physical and virtual resources. Users can check the operational status of each resource, perform everyday operations such as patch distribution, autonomous failure recovery, and expansion or reorganization of servers based on workloads.

Blade Enclosure Management Utility

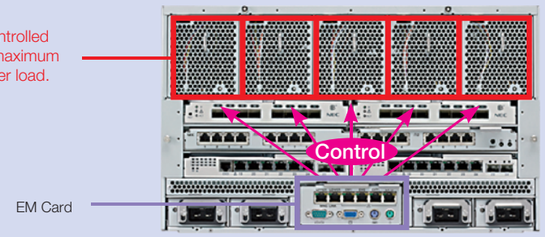
The EM card allows users to monitor the status and change settings of the blade enclosure unit. By simple remote settings from a web console, administrators can control power allocation and reduce management costs. By limiting the amount of power that can be used by a blade enclosure unit and the entire cabinet (setting a maximum power value) and controlling the fan rotation speed to match the operating status of each CPU blade, unnecessary power consumption is reduced.

Power allocation between CPU Blades in an enclosure

In case the maximum power limit for the enclosure is set to 2,000 watts:

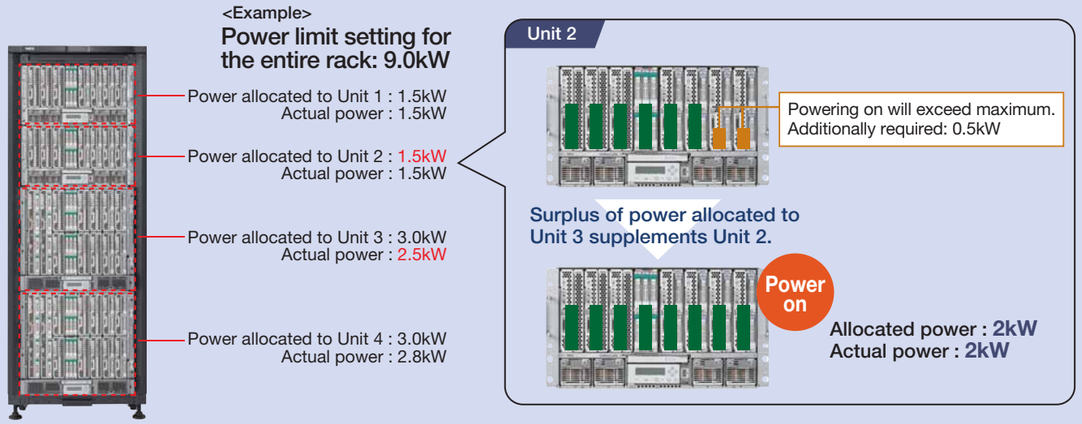


Fan speed control function



Power allocation between enclosures in a cabinet

The EM Cards interact with each other across the enclosures for optimal power allocation and keep overall power consumption below the maximum.



Specifications

CPU Blades

		B120a	B120b	B120b-h	B120a-d	B120b-d
						
Processor		Intel® Xeon® processor			Intel® Xeon® processor	
	Processor number	E5502 (1.86 GHz), E5504 (2 GHz), L5520 (2.26 GHz LV), X5550 (2.66 GHz), E5606 (2.13 GHz), L5640 (2.26 GHz LV), E5645 (2.40 GHz), X5650 (2.66 GHz), X5670 (2.93 GHz)		L5630 (2.13 GHz LV), L5640 (2.26 GHz LV), E5645 (2.40 GHz), X5650 (2.66 GHz), X5680 (3.33 GHz)	E5502 (1.86 GHz), E5504 (2 GHz), L5520 (2.26 GHz LV), X5550 (2.66 GHz), L5640 (2.26 GHz LV), X5670 (2.93 GHz)	
	Max.	2			2	
	Core count	2, 4	4, 6	4, 6	2, 4, 6	
Memory		DDR3-1066 Registered or DDR3-1333 Unbuffered DIMM	DDR3-1066/1333 Registered DIMM		DDR3-1066 Registered or DDR3-1333 Unbuffered DIMM	DDR3-1066/1333 Registered DIMM
	Max.	128GB		192GB	192GB	
Storage	HDD	SAS (1.8TB max.), SATA (2TB max.) RAID 0, 1*1		–	–	
	SSD	–		SATA-SSD (200GB max.) RAID 0, 1*1 / SATA-SSD (100GB max.)	–	
Mezzanine slots		1 x Type-1, 1 x Type-2*2			1 x Type-1, 1 x Type-2*2	
Network		2 x 1000BASE-X		2 x 10G BASE-KR	2 x 1000BASE-X	
Supported OS		Microsoft® Windows Server® 2003 R2, Standard Edition Microsoft® Windows Server® 2003 R2, Enterprise Edition Microsoft® Windows Server® 2003 R2, Standard x64 Edition Microsoft® Windows Server® 2003 R2, Enterprise x64 Edition Microsoft® Windows Server® 2008 Standard Microsoft® Windows Server® 2008 Enterprise Microsoft® Windows Server® 2008 Standard (x64) Microsoft® Windows Server® 2008 Enterprise (x64) Microsoft® Windows Server® 2008 R2 Standard Microsoft® Windows Server® 2008 R2 Enterprise Red Hat® Enterprise Linux ES 4 (x86) / ES 4(EM64T) Red Hat® Enterprise Linux AS 4 (x86) / AS 4(EM64T) Red Hat® Enterprise Linux 5 (x86) / (EM64T) Red Hat® Enterprise Linux Advanced Platform 5 (x86) / (EM64T) Red Hat® Enterprise Linux 6 (x86) / (x86_64)*3		Microsoft® Windows Server® 2003 R2,Standard Edition Microsoft® Windows Server® 2003 R2,Enterprise Edition Microsoft® Windows Server® 2003 R2,Standard x64 Edition Microsoft® Windows Server® 2003 R2,Enterprise x64 Edition Microsoft® Windows Server® 2008 Standard Microsoft® Windows Server® 2008 Enterprise Microsoft® Windows Server® 2008 Standard (x64) Microsoft® Windows Server® 2008 Enterprise (x64) Microsoft® Windows Server® 2008 R2 Standard Microsoft® Windows Server® 2008 R2 Enterprise Red Hat® Enterprise Linux 5 (x86) / (EM64T) Red Hat® Enterprise Linux Advanced Platform 5 (x86) / (EM64T) VMware ESXi 4.1	Microsoft® Windows Server® 2003 R2, Standard Edition Microsoft® Windows Server® 2003 R2, Enterprise Edition Microsoft® Windows Server® 2003 R2, Standard x64 Edition Microsoft® Windows Server® 2003 R2, Enterprise x64 Edition Microsoft® Windows Server® 2008 Standard Microsoft® Windows Server® 2008 Enterprise Microsoft® Windows Server® 2008 Standard (x64) Microsoft® Windows Server® 2008 Enterprise (x64) Microsoft® Windows Server® 2008 R2 Standard Microsoft® Windows Server® 2008 R2 Enterprise Red Hat® Enterprise Linux ES 4 (x86) / ES 4 (EM64T) Red Hat® Enterprise Linux AS 4 (x86) / AS 4 (EM64T) Red Hat® Enterprise Linux 5 (x86) / (EM64T) Red Hat® Enterprise Linux Advanced Platform 5 (x86) / (EM64T) VMware ESXi 4.1	

*1 Linux does not support on-board disk array *2 Type-1 mezzanine card supported *3 Supported by B120b

Storage and I/O Blade

		AD106a	AD106b
			
Storage	HDD	SAS (3.0Gb/s) (5.4TB max.) SATA (6TB max.) RAID 0, 1, 5, 6, 10, 50	SAS (6.0Gb/s) (5.4TB max.) SATA (6TB max.) RAID 0, 1, 5, 6, 10, 50
	SSD	–	SATA (3.0Gb/s) (600GB max.)
Mezzanine slots		1 x Type-1 1 x Type-2*2	
Network		2 x 1000BASE-X	

Tape Blade

	AT101a
	
Recording technology	LTO4
Capacity	800GB, uncompressed with a LTO4 cartridge (a single cartridge slot provided)
Mezzanine slots	1 x Type-1 1 x Type-2*2
Network	2 x 1000BASE-X

Blade Enclosures

		SIGMABLADE-M	SIGMABLADE-H v2
			
Max. configuration	CPU Blade	8	16
	Switch module	6	8
	EM Card	2	2
	Power supply	4	6
	Cooling fan	5	10
Height		6U	10U
Max. power consumption		5,136W	10,231W
Dimensions (W x D x H mm)		484.8 x 829 x 264.2	483 x 823 x 442
Max. weight		119kg	209kg

LAN Options

	GbE Intelligent Switch (L3)	1:10GbE Intelligent Switch (L3)	GbE Pass-Through Card	GbE Pass-Through Card	10GbE Pass-Through Card	10GbE Pass-Through Card
						
Downlink ports (Blade switches)	16				8	16
Uplink ports (User ports)	5	6	16	16	8	16
SIGMABLADE-M installation	○	○	○	–	○	–
SIGMABLADE-H v2 installation	○	○	–	○	–	○

FC Options

	8G FC Switch (12 ports)	8G FC Switch (24 ports)	2/4G FC Pass-Through Card	2/4G FC Pass-Through Card
				
Downlink ports (Blade switches)	8	16	16	16
Uplink ports (User ports)	4	8	16	16
SIGMABLADE-M installation	○	–	○	–
SIGMABLADE-H v2 installation	○	○	–	○