

Blade Server

# NEC Express5800/SIGMABLADE



**NEC's superior platform management and virtualization technologies build a solid foundation for server consolidation**

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

For further information, please contact:






**NEC EXPRESS5800**

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# Enable your IT infrastructure to keep pace with changing business requirements

## CPU Blade

### Find which one matches your needs

2-Socket Blade	<p><b>NEC Express5800/B120a</b> <b>NEC Express5800/B120b</b></p> <p>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.</p> <p>Ideal applications</p> <ul style="list-style-type: none"> <li>● Web ● Mail ● Clustering (scientific computation)</li> <li>● Database</li> </ul>	 <ul style="list-style-type: none"> <li>SAS Max. 1.2TB</li> <li>SATA Max. 1TB</li> <li>Memory Max. 128GB</li> </ul>
	<p><b>NEC Express5800/B120b-h</b></p> <p>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.</p> <p>Ideal applications</p> <ul style="list-style-type: none"> <li>● Large-scale server consolidation ● ERP</li> <li>● Large-scale server virtualization</li> </ul>	 <ul style="list-style-type: none"> <li>SSD Max. 100GB</li> <li>Memory Max. 192GB</li> </ul>
	<p><b>NEC Express5800/B120a-d</b> <b>NEC Express5800/B120b-d</b></p> <p>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.</p> <p>Ideal applications</p> <ul style="list-style-type: none"> <li>● Server consolidation ● Server virtualization</li> </ul>	 <ul style="list-style-type: none"> <li>Memory Max. 192GB</li> </ul>
4-Socket Blade	<p><b>NEC Express5800/B140a-T</b></p> <p>This four-socket blade server combines scalability with high performance, making it ideal for mission-critical systems.</p> <p>Ideal applications</p> <ul style="list-style-type: none"> <li>● Database ● ERP</li> </ul>	 <ul style="list-style-type: none"> <li>SAS Max. 1.2TB</li> <li>Memory Max. 128GB</li> </ul>
Storage and I/O blade	<p><b>NEC Express5800/AD106a</b></p> <p>The AD106a provides large-capacity storage with highly reliable RAID configuration capability and scalable expansion support, and is combined with the CPU blades in a blade enclosure.</p> <p>Ideal applications</p> <ul style="list-style-type: none"> <li>● Hard disk drive expansion ● I/O expansion</li> </ul>	 <ul style="list-style-type: none"> <li>SAS Max. 3.6TB</li> <li>SATA Max. 3TB</li> </ul>

## Blade Enclosures

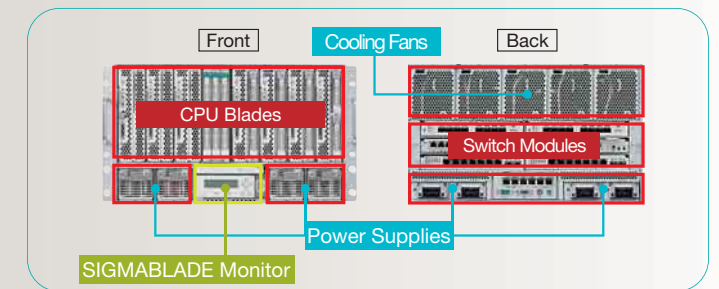
### NEC's blade enclosures support any consolidation scenario

#### 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

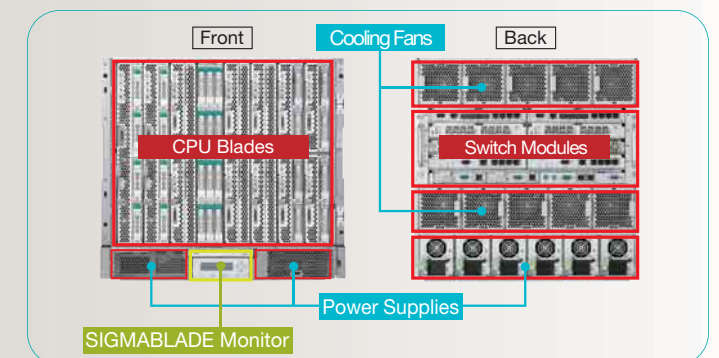


#### For medium and large-scale consolidations of mission-critical applications

#### 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



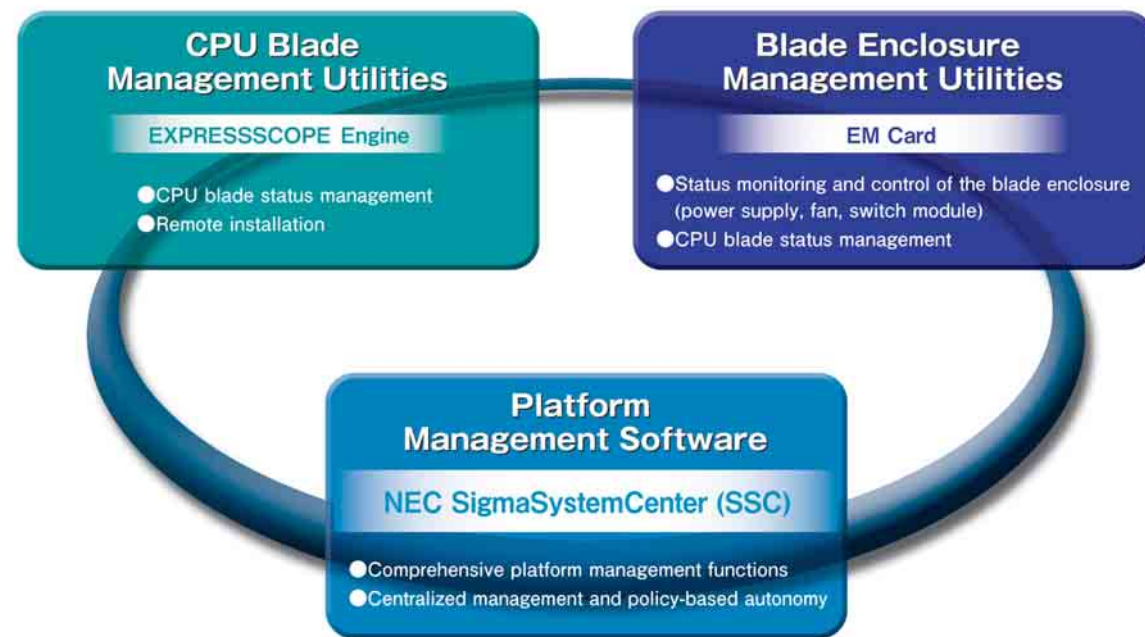
#### Support for extensive switch modules

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

NEC 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

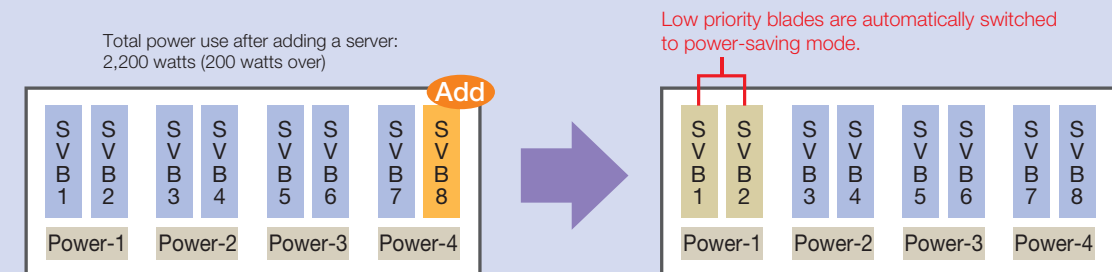
The SSC is an all-in-one platform management solution designed for centralized management and policy-based autonomy. It monitors CPU usage rates and dynamically allocates server resources based on changing operational loads. This single tool offers all of the functionality necessary for platform management 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.

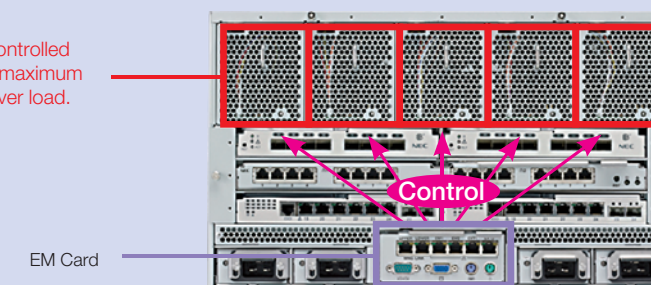
### Power allocation between CPU Blades in an enclosure

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



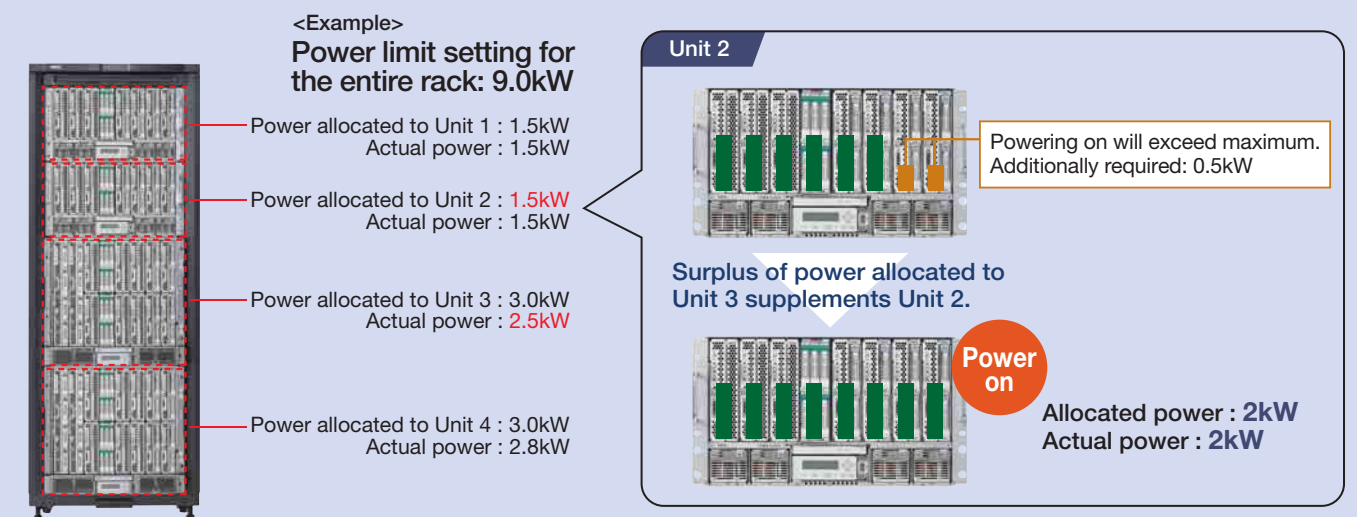
### Fan speed control function

Fan speeds are controlled from minimum to maximum based on the server load.










### 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																	Storage and I/O Blade											
		B120a			B120b			B120b-h			B120a-d			B120b-d			B140a-T*2			AD106a								
																												
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)	L5640 (2.26 GHz LV)	X5670 (2.93 GHz)	L5640 (2.26 GHz LV)	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)	E7220 (2.93 GHz)	E7310 (1.60 GHz)	E7450 (2.40 GHz)	-								
MAX.		2															2			4			-					
Core count		2	4		6			6			2	4		6			2	4	6	-								
Memory		DDR3-1066 Registered or DDR3-1333 Unbuffered DIMM			DDR3-1066/1333 Registered DIMM			DDR3-1066/1333 Registered DIMM			DDR3-1066 Registered or DDR3-1333 Unbuffered DIMM			DDR3-1066/1333 Registered DIMM			DDR2-667 Fully Buffered DIMM			-								
Max.		128GB															192GB			192GB			128GB			-		
Storage		2.5-inch SAS (1.2TB max.), 2.5-inch SATA (1TB max.) RAID 0, 1*1															-			-			2.5-inch SAS (1.2TB max.) RAID 0, 1, 5			2.5-inch SAS: 3.6TB, 2.5-inch SATA: 3TB RAID 0, 1, 5, 6, 10, 50		
SSD		-															2.5-inch SATA-SSD (100GB max.) RAID 0, 1*1			2.5-inch SATA-SSD (50GB max.)			-			2.5-inch SAS (3.6TB congirurator)		
Mezzanine Slots [Vacant]		1[1] x Type-1, 1[1] x Type-2 (Type-1 supported)															1[1] x Type-1, 1[1] x Type-2 (Type-1 supported)			2[2] x Type-1, 2[2] x Type-2 (Type-1 supported)			1[1] x Type-1, 1[1] x Type2 (Type-1 supported)					
Network		2 x 1000BASE-X															2 x 10GBASE-KR			2 x 1000BASE-X			4 x 1000BASE-X			2 x 1000BASE-X		
OS Supported		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 AP 5 (x86) / (EM64T)															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 AP 5 (x86) / (EM64T)			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 AP 5 (x86) / (EM64T)			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 AS 4 (x86) / AS 4 (EM64T) Red Hat® Enterprise Linux Advanced Plarform 5 (x86) Red Hat® Enterprise Linux Advanced Plarform 5 (EM64T)			-		

\*1 Linux does not support on-board disk array.  
\*2 Supported by SIGMABLADE-H v2 only.

		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		5,273W		10,828W	
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	○	○	-	○