ENERGY STAR® Power and Performance Data Sheet

IBM 8236-E8C

System Characteristics

Form Factor	4U Rackmount
Available Processor Sockets	4
Available DIMM Slots / Max Memory Capacity	32 / 256 GB
ECC and/or Fully Buffered DIMMs	Yes
Available Expansion Slots	3 PCIe, 2 PCI-X
Minimum and Maximum # of Hard Drives	1 to 8
Redundant Power Supply Capable?	Yes
Power Supply Make and Model	Emerson Network Power 7001520-J000
Power Supply Output Rating* (watts)	1725
Minimum and Maximum # of Power Supplies	2 and 2
Input Power Range (AC or DC)	200-240 VAC
Power Supply Efficiency at Specified Loadings*	85.2@10%, 90.6@20%, 92.2@50%, 89.2@100%
Power Supply Power Factor at Specified Loadings*	0.88@10%, 0.96@20%, 0.99@50%, 0.99@100%
Operating Systems Supported	AIX 6.1H, Linux SLES 1
Installed Operating System for Testing	AIX 6.1H

*** Note: Power supply information is for a single power supply only**

System Configurations	Minimum	Typical	Maximum
Configuration ID	4 x 8332	4 x 8332	4 x 8332
Processor Information	4 x 8-core 3.3 GHz POWER7 processor card	4 x 8-core 3.3 GHz POWER7 processor card	4 x 8-core 3.3 GHz POWER7 processor card
Memory Information	32 x 8GB DIMMs, 1067 MHz, 2Gb DDR3 DRAM	32 x 8GB DIMMs, 1067 MHz, 2Gb DDR3 DRAM	32 x 8GB DIMMs, 1067 MHz, 2Gb DDR3 DRAM
Internal Storage	1 x 2.5 inch, 15 kRPM SAS	4 x 2.5 inch, 15 kRPM SAS	8 x 2.5 inch, 15 kRPM SAS
I/O Devices	1 x 2-Port 1Gb Integrated Virtual Ethernet, 1 x GX Dual-port 12X Channel Adapter	1 x 2-Port 1Gb Integrated Virtual Ethernet, 1 x GX Dual-port 12X Channel Adapter, 1 x 2-Port 10/100/1000 Base-TX Ethernet, 1 x 4 Gigabit Single Port Fibre Channel Adapter	1 x 2-Port 1Gb Integrated Virtual Ethernet, 1 x GX Dual-port 12X Channel Adapter, 1 x 2-Port 10/100/1000 Base-TX Ethernet, 3 x 4 Gigabit Single Port Fibre Channel Adapter
Power Supply Number and Redundancy Configuration	2	2	2
Management Controller or Service Processor Installed?	Yes	Yes	Yes
Other Hardware Features / Accessories	DVD-ROM	DVD-ROM	DVD-ROM

Power Data	Minimum	Typical	Maximum
Idle Category (1S and 2S only)	N/A (3S or 4S)		
ENERGY STAR Idle Power Allowance (1S and 2S only)	N/A	N/A	N/A
Measured Idle Power (watts)	796	824	859
Power at Full Load* (watts)	1178	1220	1272
Benchmark / Method Used for Full Load Test	LINPACK		
Test Voltage and Frequency for Idle and Full Load Test	230V 50Hz		
Range of Total Estimated Energy Usage ** (kWh/year)	13,946 to 20,639	14,436 to 21,374	15,050 to 22,285
Link to Detailed Power Calculator (if available)	http://www-912.ibm.com/see/EnergyEstimator		

*** Note: Full load power represents the sustained, average power at 100% load of the given workload, and does not necessarily represent the absolute peak power or the highest average, sustained power possible for other workloads.**

**** Note: Estimated kWh/year gives the absolute range of energy use a user could expect from continuous operation (24x7x365) and ranges from 100% Idle usage to 100% full load operation. The calculation also includes typical data center overhead at a ratio**

Power and Performance for Benchmark #1		Minimum	Typical	Maximum
Benchmark #1	Benchmark Used and Type of Workload	LINPACK		
	Avg. Power Measured During Benchmark Run	1178 Watts	1220 Watts	1272 Watts
	Benchmark Performance Score	743.3 Gflops	743.3 Gflops	743.3 Gflops
	Power Performance Ratio (perf score/avg. power)	0.631	0.609	0.584
	Link to Full Benchmark Report (Where Available)			

Power and Performance for Benchmark #2 (optional)		Minimum	Typical	Maximum
Benchmark #2	Benchmark Used and Type of Workload			
	Avg. Power Measured During Benchmark Run			
	Benchmark Performance Score			
	Power Performance Ratio (perf score/avg. power)			
	Link to Full Benchmark Report (Where Available)			

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Power Saving Features	***Enabled on Shipment***	***End-User Enabling Required***
Processor Dynamic Voltage and Frequency Scaling	No	Yes
Processor or Core Reduced Power States	Yes	No
Power Capping	No	Yes
Variable Speed Fan Control Based on Power or Thermal Readings	Yes	No
Low Power Memory States	No	No
Low Power I/O States	Yes	No
Liquid Cooling Capability	No	No
Other1:		
Other2:		
Other3:		
Other4:		

Power and Temperature Measurement and Reporting

Input Power Available & Accuracy?	Yes, +/- 3%
Input Air Temp Available & Accuracy?	Yes, +/- 1°C typical, +/- 2°C maximum
Processor Utilization Available?	Yes
Other Data Measurements Available & Accuracy?	
Compatible Protocols for Data Collection	REST
Averaging method and time period	30 second average, 1 second peak

Thermal Information*	***Minimum***	***Typical***	***Maximum***
Total Power Dissipation (watts)	1178	1220	1272
Delta Temperature at Exhaust at Peak Temp. (˚C)	9.4	9.8	10.2
Airflow at Maximum Fan Speed (CFM) at Peak Temp.	220	220	220
Airflow at Nominal Fan Speed (CFM) at Nominal Temp.	130	130	130

* References: ASHRAE Extended Environmental Envelope Final August 1, 2008
Thermal Guidelines for Data Processing Environments, ASHRAE, 2004, ISBN 1-931862-43-5
Peak temperature is defined as 35˚C, Nominal Tempera

Notes

1. SPECpower_ssj2008 is a registered trademark of the Standard Performance Evaluation Corporation (SPEC). Benchmark results stated above reflect results published on XX/XX/XX. For the latest SPECpower_ssj2008 benchmark results, visit http://www.spec.org

ENERGY STAR Qualified Configurations

Include specific information on ENERGY STAR Qualified SKUs or configurations

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ENERGY STAR Qualified Configurations (Continued)

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