

ENERGY STAR® Power and Performance Data Sheet

IBM 8233-E8B



System Characteristics

| | |
|--|---|
| Form Factor | 4U Rackmount |
| Available Processor Sockets | 4 |
| Available DIMM Slots / Max Memory Capacity | 32 / 512 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 | 2 x 8335 | 2 x 8335 | 2 x 8335 |
| Processor Information | 2 x 6-core 3.3 GHz POWER7 processor card | 2 x 6-core 3.3 GHz POWER7 processor card | 2 x 6-core 3.3 GHz POWER7 processor card |
| Memory Information | 4 x 4GB DIMMs, 1067 MHz, 2Gb DDR3 DRAM | 16 x 4GB DIMMs, 1067 MHz, 2Gb DDR3 DRAM | 16 x 16GB 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 4-Port 1Gb Integrated Virtual Ethernet, 1 x GX Dual-port 12X Channel Adapter | 1 x 4-Port 1Gb Integrated Virtual Ethernet, 1 x GX Dual-port 12X Channel Adapter, 2 x 4 Gigabit Single Port Fibre Channel Adapter | 1 x 4-Port 1Gb Integrated Virtual Ethernet, 1 x GX Dual-port 12X Channel Adapter, 3 x 2-Port 10/100/1000 Base-TX Ethernet, 1 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-RAM | DVD-RAM | DVD-RAM |

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) | 281 | 414 | 497 |
| Power at Full Load* (watts) | 393 | 579 | 695 |
| 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) | 4,923 to 6,885 | 7,253 to 10,144 | 8,707 to 12,176 |
| 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 Used and Type of Workload | LINPACK | | |
| Avg. Power Measured During Benchmark Run | 393 Watts | 579 Watts | 695 Watts |
| Benchmark Performance Score | 223.8 Gflops | 255.7 Gflops | 271.1 Gflops |
| Power Performance Ratio (perf score/avg. power) | 0.569 | 0.442 | 0.390 |
| Link to Full Benchmark Report (Where Available) | | | |

Benchmark #1

Power and Performance for Benchmark #2 (optional)

Minimum

Typical

Maximum

Benchmark #2

| | Minimum | Typical | Maximum |
|---|---------|---------|---------|
| 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) | 393 | 579 | 695 |
| Delta Temperature at Exhaust at Peak Temp. (°C) | 3.1 | 4.6 | 5.6 |
| Airflow at Maximum Fan Speed (CFM) at Peak Temp. | 220 | 220 | 220 |
| Airflow at Nominal Fan Speed (CFM) at Nominal Temp. | 86 | 98 | 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 XXXX/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

Idle and maximum power consumption and performance are estimated for the minimum and maximum configurations.

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ENERGY STAR Qualified Configurations (Continued)

Include specific information on ENERGY STAR Qualified SKUs or configurations

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