

ENERGY STAR® Power and Performance Data Sheet

Model Name: Express5800/R120e-2M



System Characteristics

Form Factor	2 Socket Server
Available Processor Sockets	2
Available DIMM Slots / Max Memory Capacity	24slots / 1536GB max.
ECC and/or Fully Buffered DIMMs	DDR3-1600 ECC DIMMs
Available Expansion Slots	6 slots
Minimum and Maximum # of Hard Drives	Min: 1hdd unit ; Max: 16 hdd units
Redundant Power Supply Capable?	Yes
Power Supply Make and Model	Delta Electronics, Inc. DPS-800QB A
Power Supply Output Rating* (watts)	800W
Minimum and Maximum # of Power Supplies	1 to 2
Input Power Range (AC or DC)	115Vac and 230Vac
Power Supply Efficiency at Specified Loadings*	91.67@20%, 94.09@50%, 91.95@100%
Power Supply Power Factor at Specified Loadings*	0.96@20%, 0.99@50%, 0.99@100%
Operating Systems Supported	Microsoft Windows Server 2008 R2 Standard Microsoft Windows Server 2008 R2 Enterprise etc.
Installed Operating System for Testing	Microsoft Windows Server 2008 R2 Standard

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

System Configurations

	Minimum	Typical	Maximum
Configuration ID	N8100-2044Y	N8100-2044Y	N8100-2045Y
Processor Information	Intel Xeon E5-2640 v2 2GHz	Intel Xeon E5-2640 v2 2GHz	Intel Xeon E5-2650 v2 2.6GHz
Memory Information	DDR3-1600 4GB x4	DDR3-1600 64GB x8	DDR3-1600 64GB x24
Internal Storage	SATA 6Gbps 7200rpm 250GB x1	SAS 6Gbps 15000rpm 300GB x3	SAS 6Gbps 15000rpm 300GB x16
I/O Devices	None	SAS Raid Card x1	SAS Raid Card x1 Fibre Channel card x1 SAS HBA card x1 Ethernet card x3 Ethernet riser card x1
Power Supply Number and Redundancy Configuration	DPS-800QB A 800W x1	DPS-800QB A 800W x2	DPS-800QB A 800W x2
Management Controller or Service Processor Installed?	Yes	Yes	Yes
Other Hardware Features / Accessories	None	None	None

Power Data

	Minimum	Typical	Maximum
Idle Category (1S and 2S only)	Category D: Managed Dual Installed Processor (2P) Servers		
ENERGY STAR Idle Power Allowance (1S and 2S only)	174W	1234W	3454W
Measured Idle Power (watts)	99.4	164.4	313.3
Power at Full Load* (watts)	169.4	237.1	443.6
Benchmark / Method Used for Full Load Test	Use SiSoftware Sandra Engineer Standard 2010.SP1a		
Test Voltage and Frequency for Idle and Full Load Test	230V / 60Hz		
Range of Total Estimated Energy Usage ** (kWh/year)	1741 to 2968	2880 to 4154	5489 to 7772
Link to Detailed Power Calculator (if available)			

* 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	SiSoftware Sandra Engineer Standard 2010.SP1a		
Avg. Power Measured During Benchmark Run	169.4W	237.1W	443.6W
Benchmark Performance Score	71.00Mpixel/s	70.18Mpixel/s	93.14Mpixel/s
Power Performance Ratio (perf score/avg. power)	0.42	0.30	0.21
Link to Full Benchmark Report (Where Available)	N/A	N/A	N/A

Power and Performance for Benchmark #2 (optional)

	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	Yes	No
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	No	No
Liquid Cooling Capability	No	No
Other1:		
Other2:		
Other3:		
Other4:		

Power and Temperature Measurement and Reporting

Input Power Available & Accuracy?	Yes, +/- 5% for 80W-800W, +/-10W for ~100W
Input Air Temp Available & Accuracy?	Yes, +/- 2(c)
Processor Utilization Available?	Yes
Other Data Measurements Available & Accuracy?	
Compatible Protocols for Data Collection	IPMI
Averaging method and time period	Non Averaging, 1 sec. interval sampling.

Thermal Information *

	Minimum	Typical	Maximum
Total Power Dissipation (watts)	169.4W	237.1W	443.6W
Delta Temperature at Exhaust at Peak Temp. (°C)	3.2	5.6	6.7
Airflow at Maximum Fan Speed (CFM) at Peak Temp.	65.5	70.6	72.5
Airflow at Nominal Fan Speed (CFM) at Nominal Temp.	51.1	53.8	42.8

* 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

Qualified Configuration ID: N8100-2044Y, N8100-2045Y, N8100-2072F(w/ E5-2640v2, 2650v2)

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ENERGY STAR Qualified Configurations (Continued)

Include specific information on ENERGY STAR Qualified SKUs or configurations

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