ENERGY STAR® Power and Performance Data Sheet

Model Name: MAGNIA R3520a

System Characteristics

Form Factor	2 socket rack server
Available Processor Sockets	2
Available DIMM Slots / Max Memory Capacity	24slots / 768GB max.
ECC and/or Fully Buffered DIMMs	DDR3-1600 ECC DIMMs
Available Expansion Slots	6 slots
Minimum and Maximum # of Hard Drives	Min.: 1unit ; Max: 16units
Redundant Power Supply Capable?	Yes
Power Supply Make and Model	Delta Electronics 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*	87.40@10%, 91.67@20%, 94.09@50%, 91.95@100%
Power Supply Power Factor at Specified Loadings*	0.89@10%,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	SYU4580C	SYU4580C	SYU4580C
Processor Information	Intel Xeon E5-2640 2.50GHz x2	Intel Xeon E5-2640 2.50GHz x2	Intel Xeon E5-2640 2.50GHz x2
Memory Information	DDR3-1600 2GB x4	DDR3-1600 32GB x8	DDR3-1600 32GB x24
Internal Storage	SATA 6Gbps 7200rpm 250GB x1	SAS 6Gbps 10000rpm 900GB x3	SAS 6Gbps 10000rpm 900GB x16
I/O Devices	None	SAS Raid Card x1	SAS Raid Card x1 Fibre Channel card x1 SAS HBA card x1 Ethernet card x2
Power Supply Number and Redundancy Configuration	Delta DPS-800QA 800W x1	Delta DPS-800QA 800W x2	Delta DPS-800QA 800W x2
Management Controller or Service Processor Installed?	Yes	Yes	Yes
Other Hardware Features / Accessories			

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)	150W	714W	1870W
Measured Idle Power (watts)	88.4	146.1	312.8
Power at Full Load* (watts)	180.3	245.0	426.1
Benchmark / Method Used for Full Load Test	Use SiSoftware Sandra Engineer (.NET Multi-Media)		
Test Voltage and Frequency for Idle and Full Load Test	230V / 60Hz		
Range of Total Estimated Energy Usage ** (kWh/year)	1,549 to 3,158	2,561 to 4,292	5,480 to 7,465
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 of 1 watt of overhead to every 1 watt of IT load (corresponding to a PUE of 2.0). Closer approximations may be found by using established power calculators and specific information about the intended operating environment (e.g., average time at Idle, data center PUE, etc.).

Power and Performance for Benchmark #1

Benchmark #1		Minimum	Typical	Maximum
	Benchmark Used and Type of Workload	SiSoftware Sandra Engineer (.NET Multi-Media)		
	Avg. Power Measured During Benchmark Run	180.3W	245W	426.1W
	Benchmark Performance Score	64.6Mpixel/s	64.8Mpixel/s	64.5Mpixel/s
	Power Performance Ratio (perf score/avg. power)	0.36	0.26	0.15
	Link to Full Benchmark Report (Where Available)	N/A	N/A	N/A

Power and Performance for Benchmark #2 (optional)

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	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)	180.3	245.0	426.1
Delta Temperature at Exhaust at Peak Temp. (˚C)	1.6	3.2	5.8
Airflow at Maximum Fan Speed (CFM) at Peak Temp.	192.0	183.5	177.5
Airflow at Nominal Fan Speed (CFM) at Nominal Temp.	64.0	67.2	83.9

* 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 Temperature is defined as 18 - 27 ˚C

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/power_ssj2008.

ENERGY STAR Qualified Configurations
Include specific information on ENERGY STAR Qualified SKUs or configurations

Qualified Configuration ID: SYU4580C

ENERGY STAR Qualified Configurations (Continued)

Include specific information on ENERGY STAR Qualified SKUs or configurations