



Date: October 19, 2012

To: Robert J. Meyers
Project Manager, Energy Star for Computer Servers
United States Environmental Protection Agency

Re: SPEC Response to the Energy Star Program Requirements, Product Specification for Computer Server, Draft 3 of Version 2.0

Dear Members of the EPA and ICF Consultants,

SPEC welcomes this opportunity to review Draft 3 of the ENERGY STAR Program Requirements for Computer Servers and is proudly looking forward to continuing our long-standing association with the EPA ENERGY STAR Product Development Team.

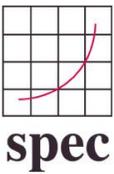
The development of ENERGY STAR standards is an essential component in the ongoing effort to reduce worldwide energy consumption. We applaud the EPA for its goal to drive toward greater energy efficiency in IT Equipment, and SPEC considers the EPA ENERGY STAR Program as an industry partner in this effort. During a series of review discussions among the SPEC membership, we identified several shortcomings in the draft and compiled a list of these deficiencies and possible solutions in the Attachment.

A successful ENERGY STAR for Servers program will be a starting point to harmonize energy-efficiency programs worldwide. Therefore, SPEC is looking forward to the next revision and is confident that the EPA will include our comments in order to create a high-quality, well-written, comprehensive ENERGY STAR Program specification that can be implemented easily by partners without huge investments.

Regards,

Klaus-Dieter Lange
SPECpower Committee Chairman





Attachment

Server Version 2.0 Draft 3 Specifications:

- Line 384: Please clarify if this is referring to all techniques configurable in the BIOS. Or is the EPA asking that a vendor should reveal the internal working of its server power management?
- Line 411: This should read: “i. SERT main report; and”.
- Line 412: This should read: “ii. SERT detailed report from the entire test run.”
- Line 415: This should be changed from “... individual workload module results, ...” to “... individual SERT worklet results, ...”.
- Section 3.9.1: This section needs to be expanded to include multi-node and blade servers.
- Section 4.1: The “Typical Configuration for Product Family qualification” will be determined by the individual server vendors (worst case: a different typical configuration for each server).
- 550: Agrees, nonetheless, that SERT is a Rating Tool, not a benchmark.

Server Version 2.0 Draft 3 Test Method:

- Line 19: Table 3: In order to further foster international adaptation of this standard, SPEC recommends using the following international voltages standard: 100V, 110V, 200V, 208V, 220V, 230V, and 400V $\pm 5\%$.
- Line 21: An ambient temperature of 18 degrees Celsius is not conducive to energy saving. This translates to 64 degrees Fahrenheit, which is clearly not comfortable for human work conditions, and although it marginally improves the performance of computing equipment, the additional costs in air conditioning do not warrant the performance improvements. SPEC has used a minimum of 20 degrees Celsius for performance/watt benchmarks since 2007. Although in 2008 ASHRAE lowered the bottom of their recommended range from 20 degrees to 18 degrees, they specifically state, “The lower limit should not be interpreted as a recommendation to reduce operating temperatures as this could increase hours of chiller operation and increase energy use.”
- (Reference: http://tc99.ashraetcs.org/documents/ASHRAE_Extended_Environmental_Envelope_Final_Aug_1_2008.pdf)
Also to be added: “The Ambient temperature upper limit should be within documented operating specification of UUT.”
- Line 23: To be added: “The relative humidity should be within documented operating specification of SUT.”
- Line 44: In order to utilize international benchmark guidelines, the measurement accuracy should be aligned with SPEC’s guidelines. SPEC recommends replacing the entire section D with section 4.3 of the SERT DD.
- (Reference: SERT Design Document (DD) http://www.spec.org/sert/docs/SERT-Design_Doc.pdf)
- Line 61+: Additional SPEC recommendations to add: “The SERT Run and Reporting Rules include specific tuning instructions for supported environments to ensure fair measurement of the loads being tested by the tool.”



- Line 156: Update “... manufacturer specified workload software on the UUT.” to “... the SERT software on the SUT.”
- Lines 164-179: Recommend replacing with “Between 5 and 15 minutes after the completion of initial boot or login, execute the SERT according to the product’s Run and Reporting Rules document and retain the associated output files. Information on the SERT and the associated Run and Reporting Rules can be found at www.spec.org/SERT.”

Power and Performance Sheet:

- Line 42: While the line provides extreme upper and lower bounds, neither the minimum nor the maximum computations is representative of reality **and** it would be dangerous for a consumer to use these values for actual planning purposes. The SERT should not be used for power capacity planning, nor should any similar tool that does not simulate the actual work of the data center.
- Line 45: Although the actual formula in the spreadsheet is correct, the text is not. Continuous use for one year is not 24x7x365; it is only 24x365.
- Line 89: SPECpower_ssj2008 should not be mentioned, but “Server Efficiency Rating Tool (SERT)” should be. Initially, it should be listed as a trademark, but it will not be a registered trademark until after GA of the product.

Additional items across documents:

- Dc and dc -> DC
- Ac and ac -> AC
- UUT and SUT is used to describe the same thing; it is preferred that only “SUT” is used.
- Lines 24, 25, 39, 92, 146, 148, 150, 153: Power Meter” should be “Power Analyzer”