From: Lange, Klaus [mailto:Klaus.Lange@hp.com]
Sent: Monday, March 17, 2008 9:44 AM
To: Duff, Rebecca M.; fanara.andrew@epa.gov
Cc: info@spec.org; president@spec.org
Subject: SPEC's Feedback on the first daft of the Energy Star for Servers Specification

Dear member of the EPA and associated consultants,

The SPECpower Committee welcomes this opportunity to review draft 1 of the ENERGY STAR Specification Framework for Enterprise Computer Servers and is proudly looking forward to continuing our association with the Energy Star program. We applaud you for the progress made so far and would appreciate the consideration of the following comments:

Draft_1_page_5: E. Idle State
The state in which the operating system and other software have completed loading, the server is not asleep, and activity is limited to services that the system starts by default. During idle, the server must be in a state in which it is capable of completing workload transactions with response times that do not exceed those of normal operation or service level agreements.
Reference: SPECpower_ssj2008 Run and Reporting Rules on Idle

Draft_1_page_7: B. Idle Power
There is a dependency between the idle power consumption and the performance of the server. In order to design a server with high energy efficiency, both the power has to be low and the performance has to be high. Therefore we believe that the evaluation of the idle measurement in isolation of performance is not appropriate, because the industry would need to optimize servers for the wrong state (just low power).

Draft_1_page_8: C. Standard Information Reporting Requirements
We appreciate the references to our SPECpower_ssj2008 benchmark as an informational piece and offer SPECpower_ssj2008 for potential use either in its current form or some mutually agreeable solution. SPEC endeavored to establish rules to fairly and consistently report results, including the disclosure of the primary metric whenever any partial information is used. The SPECpower chair will explain this situation and will work out the details on how to include SPEC result information to Rebecca Duff (icfi) the week of March 17th.
Reference: http://www.spec.org/power_ssj2008/docs/SPECpower_ssj2008-Run_Reporting_Rules.html#3.1.4.

Draft_1_page9-10: Tier 2 Requirements
SPECpower_ssj2008, the first SPECpower benchmark, is a leap forward in the state of the art in power and performance analysis of Enterprise Computer Servers. The SPECpower_ssj2008 benchmark is only focusing on one application. In order to represent a wide spectrum of applications, a means for introducing additional work-loads must be a part of an Energy Star for Server plan. SPEC is currently working on the augmentation of additional benchmarks with a power attribute in order to cover a wide spectrum of applications.

We look forward to further work with the EPA in defining additional requirements to enhance our benchmark suite to satisfy EPA needs where feasible and welcome EPA's input in prioritizing our future work.

On behalf of the SPECpower Committee,
Klaus-Dieter Lange
SPECpower Subcommittee Chair
281-518-2428

Additional Comments:

Draft_1_page_3: A. Definitions
In addition to services for client computers, servers also provide services for other servers. Furthermore, the use of a list of characteristics is problematic. Based on history, any

distinguishing characteristic based on features, capabilities or architecture will quickly change over time making the discrimination obsolete. RAS and manageability features are moving down into workstations and clients (commercial first, then consumer) and lower cost points are moving up into servers. It is also generally agreed that servers do not need two processors. Suggest instead: A computer that provides various processing, storage, and communication services in response to requests that generally originate and are mediated by other client computers and server computer systems. Computer servers generally have the following characteristics:

- Reliability, Availability, Serviceability, and Manageability (RASM) features
- Designed and certified to run Server Operating Systems
- Include some type of network communication (LAN or WAN) capability
- Designed to operate in a commercial data center environment

Draft_1_page_3: Blade Server
We believe that Blade Servers do not need to have a hard drive, e.g. in cases when a network connected storage solution is used.

Draft_1_page_4: Server category
SPEC does not categorize servers; SPEC results are submitted and presented by the application space (e.g. Web server, Java Application server, Mail Server). With the industry producing smaller, more powerful servers, to set a lower limit for small servers would exclude new advancements in this direction. Therefore, we suggest removing the lower limits from the small server's definition.

Draft_1_page_9: D. Power and Temperature Measurement Requirements
During the life-time of Tier 1, many servers will not support this requirement. In addition, a large amount of the current servers with a SPECpower result would be ruled out.