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Mr. Andrew Fanara
ENERGY STAR Product Development Team Leader
United States Environmental Protection Agency
Washington, DC 20460

RE: ENERGY STAR Draft 1 Specification for Computer Servers

Dear Andrew:

AMD has the following comments on the Draft 1 ENERGY STAR Program
Requirements for Computer Servers, released on February 14th, 2008. We
would like to thank you for the opportunity to provide our feedback.

Section 1. Definitions

AMD recommends that EPA limit the ENERGY STAR for Computer Servers
program to volume servers because of their dominance in the marketplace.
Including other server class products in the program makes the application of
a common set of criteria problematic. A proposed definition of *Volume*
Server is provided below.

In addition, AMD recommends that EPA explicitly exclude *Storage Systems*
from the server specification. These systems have very different
characteristics than general purpose computer servers and will necessarily
have different criteria for assessing their energy efficiency. We have
provided a proposed definition of storage systems below.

AMD also recommends the explicit exclusion of networking and
telecommunication equipment. Again these classes of products while sharing
many of the same components as general purpose computer servers are
different enough at a system level that they should be considered separately.

We also believe that the definition for "computer server" provided in Draft 1 has a number of issues. Servers do not just provide services for client computers; they also provide services for other servers. Using a list of characteristics to define servers is also problematic. Based on history distinguishing characteristic that are based on features, capabilities or architecture will change over time making such distinctions obsolete. In addition, RAS and manageability features are moving down into workstations and clients (commercial first, and then consumer) and lower cost points are moving up into servers. AMD recommends the following alternate definition:

Computer Server: A computer that provides various processing, storage, and communication services in response to requests that generally originate and/or 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 and general purpose applications

· Include some type of network communication capability

· Designed to operate in a commercial data center environment (EMC and environmental rating).

· Provide no directly attached monitor, mouse, and keyboard (although they often incorporate a virtual version of these for remote management)

Blade Server: AMD notes that a blade server does not necessarily have a hard file storage device.

AMD recommends adding the following definitions:□

Storage System: A system designed to provide data storage capacity. While it may contain an embedded processor, this processor is not made available to run general-purpose applications [consult SNIA for a more precise definition.]

Volume Server: A computer server as defined above packaged in either a 1U or 2U high rack-mount chassis. A volume server may be designed to support any number of processors, but will generally be limited to 4 or less based on physical constraints.

Section 2. Qualifying Products:

As noted above, AMD recommends limiting the scope of this program to Volume Servers as defined in Section 1. Therefore, we are suggesting the following alternate text for this section:

Products meeting the definition for *Volume Server* and containing a *Computer Server Power Supply* (based on the definitions given in Section 1 above) qualify for the Energy Star Program for Computer Servers.

Note: Direct Current-powered servers, Blade Systems, Blade Chassis, Storage Systems, networking and telecommunications equipment are explicitly excluded from the Energy Star for Computer Systems program.

Section 3A. Power Supply Efficiency Requirements

AMD recommends that the EPA adopt the Climate Savers Computing Initiative's (CSCI) PSU efficiency targets rather than specify any standards or test process that is independent (even if harmonized) of this initiative. An appropriate CSCI certification level for Computer Server Power Supplies to be incorporated in EPA Energy Star compliant servers would be the Bronze level for both multi-output and single output PSUs. AMD has participated in the Climate Savers power supply working group, and we would be happy to provide additional technical input.

Section 3B. Idle Power

AMD does not support the establishment of maximum idle power requirements for this program because to allow fair comparisons, many different classes of server would need to be defined. Idle power is extremely sensitive to the number of processors, amount of DRAM, and number of hardfiles currently installed in a server.

For example, the idle power of a 1U server with one processor, 4 DIMMS, and no hardfile would vary greatly from the idle power of a 2U server with 4 processors, 4 - 360GB 7200 RPM SATA Hardfiles and 128 DIMMs on a memory riser card. Not only does idle power vary from one server product class to another, it also varies significantly based on the specific configuration of an individual server.

Section 3C. Standard Information Reporting Requirements

While AMD supports the concept of a standardized data sheet, we can not support the proposal to include a specific reference to SPECpower_ssj™2008 benchmark numbers. Not only does this violate the spirit of SPEC's reporting

rules, it tends to elevate the SPECpower_ssj2008 benchmark to the position of being the *only* energy efficiency standard for servers. This would violate the intent of the SPEC Power committee.

AMD is also concerned that any identification of SPECpower_ssj2008 in an ENERGY STAR specification might have the unintended consequence of actually impeding fair competition between server system manufacturers in the marketplace since this benchmark only elucidates power-performance of systems on a specific workload. This workload favors one type of system architecture over another and will, in effect, reduce the incentive among manufacturers to innovate in the area of system architecture.

At the same time, AMD understands that EPA wants to aid consumers in the comparison of otherwise functionally equivalent server systems. AMD does support the concept of volume servers having the capability to report real time performance, power utilization, and temperature data using industry standard protocols.

Suggested Alternative to Idle Power on Standardized Data Sheet

The concept of reporting estimated annual energy cost has gained quite a bit of traction with consumers. AMD would be interested in exploring with the EPA and the industry the idea of defining a methodology whereby the average energy cost of a server (assuming that it is powered 24 X 7) could be estimated and reported in a standardized format.

On behalf of AMD, thank you for the opportunity to provide comments. As always, we welcome the opportunity to answer any questions or provide additional information.

Regards,

Andy Rawson   Donna Sadowy
AMD   AMD
System Architecture   Global EHS

cc: Arthur Howard, ICF International