May 9, 2008

TO: Rebecca Duff
           ICF International
           1725 Eye Street, NW
           Suite 1000
           Washington, D.C. 20006
CC: Andrew Fanara

FROM: Sun Microsystems, Inc.
           Contact: Lowell Sachs, lowell.sachs@sun.com, 202-326-7521

Re: Comments by Sun Microsystems, Inc. on the EPA Energy Star (Draft 1) Revised
Definition for Computer Servers

Dear Ms. Duff:

Thank you for the opportunity to provide comments on the Environmental Protection Agency's
(EPA) revised definition for computer servers based on the comments received to Draft 1 of
the specification. We appreciate the opportunity to share our views, and look forward to
continuing to help the EPA as the drafting process moves forward.

Following below are our specific comments. Please feel free to post these comments to your
website. We would also be happy to discuss these with you in more detail if you would like.
Thank you again for this opportunity to present our views. We look forward to working closely
with you in the days and weeks ahead.

Sincerely,
Lowell Sachs, lowell.sachs@sun.com, 202-326-7521

. COMMENTS BY SUN MICROSYSTEMS, INC. ON THE EPA ENERGY STAR (DRAFT 1) REVISED DEFINITIONS FOR COMPUTER SERVERS DRAFT 1 SPECIFICATION

We recommend making the following changes to the text of the original "ENERGY STAR® Revised Definitions for Computer Servers Based on Draft 1 Specification Comments":

1) Move 1-4 processor socket requirement down to section 2.

2) Add rack mountable to 1.A (noted below in **bold**)

3) Remove WOL as an alternative to BMC or SP.

As requested in our phone conversation, here is suggested rewording (note that only the changes listed above have been made).

1 <u>Definitions</u>: Below are the definitions of the relevant terms in this document.

A. <u>Computer Server</u>: A computer that provides services and manages networked resources for client devices such as: desktop computers, notebook computers, thin clients, wireless devices, other computer servers and their networked devices. Computer servers primarily respond to requests and are accessed via network connections, and not through direct user input devices such as a keyboard, mouse, etc. For purposes of this specification, computer servers **must include all** of the following characteristics:

- Marketed and sold as a server;
- ~~Designed and capable of having at most four processors (i.e., 1-4 individual processor sockets);~~
- Support for error-correcting code (ECC) and/or buffered memory;
- Dedicated management controller, such as Baseboard Management Controller (BMC) or service processor (SP);. ~~or ability to detect Wake On LAN (WOL) packets (Magic Packet and/or Directed Packet Filtering) to wake or power on from low power states;~~
- Include at least two ports for network communication capability, e.g., Ethernet, Fibre Channel, etc. (both ports can be the same technology);
- Include Reliability, Availability, Serviceability, and
- Manageability (RASM) features;
- Designed for and listed as supporting Server Operating Systems and/or Hypervisors, and targeted to run user-inst
- **Rack Mountable**
- Designed and placed on the market as a Class A product as per EN55022:1994 under the EMC Directive 89/336.

2) Qualifying Products:

To be eligible for ENERGY STAR qualification under this specification, a computer server must meet one of the following conditions:

- Conform to the definition provided in Section 1.A and be designed and capable of having at most four processors (i.e., 1-4 individual processor sockets);

- Conform to the definitions provided in Section 1.B, or

- Conform to the definition provided in Section 1.C and be designed and capable of having at most four processors (i.e., 1-4 individual processor sockets).

Storage equipment, blade storage, and network equipment, as defined above, and any other equipment that meets the definition of a Computer Server but not does not meet the qualifying criteria (e.g. a computer server or blade designed to accommodate more than 4 individual processor sockets) is not eligible for ENERGY STAR qualification under this specification.

Further thoughts on buffered memory.

There is a trend in the industry to move the functionality of the AMB (Advanced Memory Buffer) chip that is replicated on each FBDIMM (Fully Buffered Dual Inline Memory Module), into a separate chip called a BOB (Buffer On Board), which would be placed on the motherboard, allowing for the benefits of buffering with a smaller component count and reduced power consumption, since several AMB chips are replaced by one BOB chip.

In light of this, the spec should allow systems which use BOB and regular RDIMMs (Registered Dual Inline Memory Modules) to qualify as having buffered memory.