



Breakout Session: Reporting Criteria and Data Measurement/Output Requirements

Gregory Homan

LBNL

gkhoman@lbl.gov



Learn more at energystar.gov

Goals for the Session



- Identify characteristics that should be added to the datasheet/characteristics that may not be as useful to customers
- Provide feedback on making the datasheet fit better with manufacturer's existing data processes

Tier 1 Recap:

Power and Performance Datasheet



- Datasheet is means to provide customers with consistent and comparable information, server-to-server
- Captures data for a number or characteristics:
 - model information
 - system characteristics
 - system configuration(s)
 - expected power data (idle/full load, annual energy)
 - power and performance data for at least one benchmark
 - available and enabled power saving features
 - power measurement and reporting capabilities
 - select thermal information
 - a list of additional qualified SKUs or configuration IDs

Discussion



- Are there additional items that are suggested for addition to the P&P Datasheet?
- Are there items on the existing P&P Datasheet that are less important to a server purchaser? Why?

Tier 1 Recap:

Data Measurement and Reporting



- Input power consumption (W), inlet air temperature, and utilization of all logical CPUs during normal operation
 - Via service processor, embedded power or thermal meter (or other out-of-band technology shipped with the Computer Server), or preinstalled operating system
 - Data made available in a published or user accessible format so as to be readable by third-party, non-proprietary management systems

Tier 1 Recap:

Data Measurement and Reporting



- Input power consumption: Tier 1 specification forecast setting accuracy level at $\pm 5\%$ accuracy with a cutoff of ± 5 watts (*10% and 10W in Tier 1*)
- Processor Utilization: no defined methodology included in Tier 1 specification.
 - Final proposal from Draft Final:

$$U_{\text{proc}} = (1 - \text{TIDLE}\%) * (\text{FA} / \text{FS})$$

Where:

- **TIDLE%** = OS idle time% for the time slice
- **FA** = average frequency for the time slice
- **FS** = CPU frequency specification

Discussion



- *Processor Utilization:* Have there been any developments on this topic since Tier 1 was finalized that provide a standardized methodology with which to measure utilization?
- *Sampling requirements:* Is there a reasonable alternative baseline sampling period that could be referenced for Tier 2 in lieu of the proposed 30 second rolling average requirement?
- EPA received comments that inclusion of sensor accuracy requirements would provide a useful baseline for Partners. What are appropriate levels of accuracy for input power and inlet air temperature sensors that would provide sufficient accuracy for data center managers to monitor the environmental conditions of their equipment?
- Are there industry standard methodologies available that could be cited for assessment of the three reporting requirements included in this section?