

ENERGY STAR for Data Center Storage, slides of 6 May 2013

1. Huawei appreciates the EPA's effort to work out an accommodation for multiple drive types.
2. Huawei supports the SNIA comments that have been developed through industry collaboration.
3. We are concerned about the assumption that SSDs and HDDs may be mixed in the same shelf. This may be true in some products, but is certainly not universally true. We are also confused by slide 18. It seems to us that adding a separate shelf of SSDs to an already qualified system would be a commendable thing, but having to include it in allocations has the mathematical effect of diminishing the original range, thereby punishing the vendor for improving performance.
4. The drive substitution chart on slide 14 of the May 6 slides appears to be copied out of the draft 4 spec. We hope this does not mean that the EPA plans to ignore advice from the industry that it needs work. Our suggestion is incorporated in the SNIA comments. The critical changes are
 1. Using rated performance / rated watt metrics, rather than simple performance ones
 2. Allowing improvements in any category, so long as they do not degrade the metrics in others by more than 5%.

This has the effect of "future-proofing" the spec, allowing quick movement to new and more efficient technologies when such things emerge. Candidates we currently see are disk areal density changes, interconnect improvements (USB 3.0, SOP, 12G SAS), and transfer rate improvements (related to areal density).

5. It is hard to understand the directive to maintain ratios when doing drawer rounding. Suppose a system has an optimum point of 32 drives (2 shelves) of type A and 320 drives of type B (20 shelves)¹. Doing the math, we get a range of 25.6—33.5 for type A and 262.4—334.4 for type B. Rounding to shelf boundaries, we have 1—3 shelves of type A and 16—21 shelves of type B. But given the range of A, maintaining the ratio would necessitate a range for B of 10—30 shelves². Bullet point iii on slide 36 trips over this same issue.
6. We repeat the sentiment sent in a private note some days ago, that the restrictiveness of the range around the optimum point is likely to have negative effects. First, the EPA will likely not get the range of data that it hopes for. Second, vendors may only qualify a small subset of their product lines, justifying this by blaming the EPA for an obnoxiously burdensome and expensive process.

¹ This is a realistic scenario for a scale-up system.

² Actually, we like that.

Our proposal remains the same. We advocate a range that is limited only by performance/watt, for example, a vendor-selected range in which performance/watt shall not be less than 85% of that at the optimum point. To our knowledge, adopting this idea will not significantly change the proportioning methodology outlined in the slides.

We heard in the face to face in Arlington that this actually lines up well with the EPA's thinking, and hope to see it reflected with more clarity in the next issue of the spec.

7. We wonder out loud whether future security challenges might affect performance in a way that causes entire product lines to require retesting. To date this has not been an issue but it deserves thought. What is the EPA process for changing the substitution rules in response to ground-changing events such as fundamental shifts in security requirements?
8. It is good to see progress being made. Thank you.