

SNIA GTWG Comments (29-July'13) – Final Draft ENERGY STAR STORAGE (June 20, 2013)  
 Draft reviewed w/ EPA on con-call 23-July'13, and added to as result of the discussion

Item	Comment
1 Definitions	
General	Need to reference the correct rev of Emerald; we plan a 1 more errata version before ENERGY STAR V1.0 release to be 2.0.2
Line 215	Add this line “(a) This number may be rounded up to the nearest drawer boundary” to right after Line 240 ... rounded up and Line 249... rounded down
Line 254-259	Add right after 259: “If the -40% and +15% test points are better than the peak -15% performance/watt points, then these can be used for the Qualified Configuration”
Line 273-275	“maintain storage device percentages” is coarse and open for interpretation
510 & 514 510	Does “highest deployed volume storage device” mean highest unit sales device (# of spindles) that is available for sale [make clear]? Note that this implies older devices that have been selling for some time. Also: Can the vendor choose to extend qual range by choosing to test other devices in addition to the device with the highest deployed volume? (replace must with should?)
Line 336	“must remain as constant as possible” is a good statement that can be used in conjunction with “as the configuration allows”
2 Qualifying Products	
410 & 428	Need clarity of what constitutes a qualified (Unified) block-capable NAS system & NAS capable block system. How do we test and qualify as a block system? Suggest we need a clear definition for “Unified “ system, but exclude Object. →Per SNIA dictionary, below. Consider adding to User Guide and/or Emerald spec. <b>unified storage</b> [Storage System] Storage that provides consolidated <a href="#">block</a> and file services. Unified storage supports block storage protocols (e.g., <a href="#">FC</a> and <a href="#">SCSI</a> ) and file storage protocols (e.g., <a href="#">CIFS</a> and <a href="#">NFS</a> ) to allow users and applications to access block and file data consolidated on a single <a href="#">storage subsystem</a> .
3 Qualification Criteria	
456	Suggest that the EPA insert a link for rules on how to handle embedded 3 <sup>rd</sup> party devices that may have an existing ENERGY STAR requirement
475-479	Suggest make clear that adaptive cooling applies to “primary components of the storage product” (re. line 456)
499	Table 6 on Sequential Weighing needs clarification → <a href="#">can GTWG provide proposal? see table below</a>
510 & 514 510	Does “highest deployed volume storage device” mean highest unit sales device (# of spindles) that is available for sale [make clear]? Note that this implies older devices that have been selling for some time. Also: Can the vendor choose to extend qual range by choosing to test other devices in addition to the device with the highest deployed volume? (replace must with should?)
636, 648	As part of submitting optimized data, is there a “process” to follow for the supporting calculations and rules that are used to derive the qualifying product ranges? What configurations can be sold as ENERGY STAR qualified?

	What is the procedure for selecting the overall qual range? ... the vendor determines, the CB verifies and the EPA arbitrates?
570	Ditto comment from 510
616	Replace “Distributed” w/ “Scale-out”
630-632	Please explain
633-635	Is this a should or a must?
636	How is anonymity preserved?
648-652	We provide SNIA spec data, which is metric data (performance/W) Does the EPA want to see discrete power & performance data? – but will not publish it? Does this mean provide spec sheet data?
655	What is an ASHRAE Thermal Report
659	Suggestion: For the Workload Test in Table 7, make reference to the fuller description in the Emerald Spec, section 7.4.3.2 Test Phases
667-672 (3.61)	Can adding system cache be excluded from the 20% overall performance cap? → can GTWG provide a reason? Not as this time
679	Why is no change allowed to transfer speed relevant? → can GTWG provide a reason? 1) We believe you are referring to “interface transfer speed” 2) SNIA does not believe this a significant parameter and that Sect 3.6.1 is a sufficient global requirement that obviates the need for transfer speed requirement
692	Is the 15% over a baseline submittal, or incremental? We found an example drive vendor’s high capacity drive roadmap that showed four successive drive capacities in a single device type “swim lane” along with corresponding sustained transfer rates. Using the first drive as baseline, the next drive would meet the 15% req’t but subsequent drives would not. Based on this, we recommend using the 20% max system level increase per Sect 3.6.1
696	Clearly state that is for disk
747	Time stamping (Optional)
762	There is no PPDS
763	Temperature measurements (optional)
764	data (rolling?) averaging (if used)
4 Testing	---
5 Effective Date	---
796	If we manufacture before Nov 5, can this still be qualified? [Language is not clear]
6 Future Revisions	---

Test Spec	
	Add 200vac to tables 1, 2, and 3
65	RAID is old speak
Table 1	+/- 1% voltage tolerance seems tight, especially in light of wanting to avoid power conditioners. Table 2 tolerances are more reasonable

Further detail:

1) Item 499 /Table 6 / Sequential weighing

Option	Description	Pro / Con
1	<p>70/30 weighing per EPA:</p> <ul style="list-style-type: none"> <li>• Determine (find) a single physical configuration (drive type &amp; count) that will provide the optimal (MB/s/W) point when using a 70/30 weighing</li> <li>• Run the SeqR (100%R) &amp; SeqW (100%W) tests and do the 70/30 weighing math to derive optimal Seq performance/W</li> </ul>	<p>(-) Deriving 70/30 mixed optimal results from 100/0 &amp; 0/100 data is not a consistent method to find the streaming workload optimal point</p> <p>(-)If a mixed R/W Sequential workload is used, SNIA recommends 50/50 instead of 70/30. Reference can be made to an existing 50/50 Sequential workload in the SPC standards</p>
2	<p>SNIA proposal: Pick one of the existing Sequential tests (100/0 or 0/100). We recommend that it should be User choice to pick either the R or W workload.</p>	<p>(+) Simple and consistent</p>

Note: In all cases, the full Emerald test suite needs to be run and data is collected.