

GREEN STORAGE TWG

2022 Review and 2023 Plans

Presented by:

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Green Storage TWG 2022 Accomplishments

Green Storage TWG Charter link

- Recent completed work summary:
 - Supported 2021 EPA DCS Unit Shipment Report Submissions; 2022 in progress
 - Collaboration with TGG on EU Lot9 Regulatory updates
 - Supported Lot9 Titanium power supply extension
 - Ongoing Industry Support for V4.0 Emerald Measurement Specification test tools & kits
 - Engaged w/ the EPA regarding revised/future test methodologies
 - Released in July the new White Paper #86 (w/ TGG) "Energy Efficient Data Center Storage"
 - Released in October a SNIA Technical White Paper "Storage Device Level Power Efficiency Measurement"
 - Worked towards a revised test methodology for block level Storage Systems (Emerald future)
 - Worked towards a new test methodology for Storage Devices



Approximate and subject to change																
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Update 1-11-23	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Q1	Q2	Q3	
Events													_			
SNIA-GTWG F2F		VF2F VF2F VF2F					∇ SNIA Member									
Invite EPA to concall																
EPA-SNIA Industry Meetings		\ \ /	EPA call-in to (SW cadence					as nee	ded				1 1	CS Stakehol leeting (virt		
ENERGY STAR Data Analysis (on file submittals)	Note: cur	Note: currently 12 file submittals V2.0/2.1 data analysis							ılysis							
ISO version of Emerald 4.0 (tentative)									Submit	to ISO	∇		7	Publish ISO stand		
Emerald Measurement Spec v5.0		Define scope						▼ Spec V								
Vdbench replacement	▼	data co	ollection ∇												(interna	
Storage Device Level Power Efficiency Measurem	ent (SDLP	PEM)								∇	Draft Spec					
On going data collection																
Futures																
Memory attached persistent storage		Investigate and make recommendations								Consider for v5.0						
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<u> </u>	d systems;	; conside	er small sca	ile meas	surement	as systen	n indica	tor					ļ			
Collaborate w/ other Servers, Switch																
Cloud data centers																
Object storage		Is market large enough? Is growing, e.g. S3. Plug-ins available SPEC Storage 2020														
	TGG (incl 8	BOPLUS, D	Digital EU), E	U Lot 9,	ASHRAE,	SPEC-Stora	age/Pow	er, SNIA-J _l	on TopRu	unner, ISO	, Oracle, DI	MTF				
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Green Storage TWG Membership as of 18-Jan-2023

- ActionSpot
- Calypso Systems
- Dell, Inc.
- Fujitsu America
- HPE
- Hitachi
- Huawei Technologies
- IBM
- JetIO Technology
- Kioxia Corp.
- Marvell
- NetApp Inc.

- Oracle Corp.
- Pure Storage
- Quantum Corp. USA
- Samsung Electronics
- Seagate Technology
- Solidigm
- Toshiba America



Green Storage TWG Participation

- What is the expected industry impact of this work
 - One architecturally unbiased test methodology to serve regulatory bodies worldwide
 - Proactively provide a single test methodology worldwide
 - Industry knowledge of storage system power consumption and best practices/configurations to optimize power usage w/o compromising system functionality
- What is the industry segment relevance
 - Storage System Manufacturers; Storage Device Manufacturers; DCIM SW Vendors
- Why you should join and participate in Green Storage TWG
 - Participate in developing Standards used worldwide for datacenter data storage power efficiency
 - Influence regulations worldwide related to datacenter data storage power efficiency
 - Refresh and renew focus on best practices (whitepapers, planning tools)
 - Maintain / create competitive advantage in product sustainability
 - Avoid being surprised when a new regulation goes live and affects your product portfolio/revenues
- Who to contact for additional information
 - GTWG Co-chairs: Don Goddard, <u>Donald.Goddard@netapp.com</u> Herb Tanzer, <u>herbtanz@gmail.com</u>

