

### **June 2023**

Sustainability WP for the 5th tenet (Jonmichael, 20 min)

### **April 2023**

OCP Device Spec Auto Generate Tool (Samsung/ Mike)

### **March 2023**

OCP Datacenter SAS/SATA Device (Lee/Paul/Ross)

OCP Storage Event May (Amber/ Ross)

### **December 2022**

The new [IEEE 2883-2022](#) standard is the latest specification in media sanitization. Discuss purge media sanitization, transfer of ownership, and verification of sanitization requirements between OCP storage, security, and sustainability projects to enable hardware reuse and circularity. [JonMichael/ Chia - 15 minutes]

[HUE](#)(Hardware Usage Effectiveness) has been introduced to show the total IT power/information processing power. Discuss idle power consumption and requirements for different tiers of storage (e.g. warm, cold) and tradeoffs with latency requirements and media type. [JonMichael/ Chia - 15 minutes]

### **September 2022**

- General Storage Project Updates
- QLC and other media topics by Tahmid Rahman & Roger Corell @ Solidigm (30 min)
- Grand Canyon HDD Platform Madhavan Ravi (Meta) (15 min)

### **August 2022**

- Software Defined Memory FTI Workstream by Manoj Wadekar of Meta (30 min)
- E1.S Tool-less SSD design file by Jungsoo Kim of Samsung (15 min)
- < TBD >

### **July 2022**

- Timelines
  - OCP Summit abstract accepts on July 18 ; draft presentations due August 26
  - OCP FTS abstract accepts on July 29 ; draft presentations due September 2
  - Project Lead election voting deadline on July 22
  - OCP Summit full day for Storage on Wed, October 19, starting at 8am

- Updates
  - Hyperscale Boot Spec Contribution complete - congrats!
  - < other updates? >
- Whitepaper on Media Sanitization and Circular Economy (Jonmichael Hands, attached)
- First Cut Errata Template (Mike A, Amber, Dave L, Lee, Ross)

#### **April 2022**

- Workstream Updates
  - Dell/WD/Seagate - HDD Dynamics
  - Seagate/Microsoft/WD - NVMe HDD
- Tentative - Meta: Discussion - New topics brainstorm
- Archana - Update on using OCP material as content to take to standards orgs

**February 2022**

- Samsung - Collective SSD vendor feedback on Meta/Google Boot Drive spec

- Discussion - New topics brainstorm
- Archna - Update on using OCP material as content to take to standards orgs

### **January 2022**

- Meta/Google OCP Boot drive Update [Ross Stenfort]
- Meta/MSFT OCP HDD Update [Ross/Lee]

### **December**

- Sustainability overview - JM Hands - 15-20m
- OCP Security and Datacenter SSD Spec - Arie van der Hoeven - 25-30m

### **July**

- Facebook flash systems

### **June 2021**

- OCP Summit 2021
- Workstream readout

### **May 2021**

- TBD

### **April 2021**

- Workstream readout
- Update on Cloud NVMe SSD and EDSFF Workshop on April 27
- Hyperscale boot drive proposal

Notes:

### **March 2021**

- Agenda
  - Round table on workstreams (NVMe HDD, NVMe Drive Spec, Acoustic Vibe, ...)
  - Facebook update on an EDSFF-related event being planned at OCP
  - OCP Security Update (Elaine, Nate, et al)
- Notes:
  - STX:: How are you using SPDm: Talk to Brett Henning, OCP liaison to DMTF
  - HPE: What do you expect to require for drives? Does this include RAID controller or other intermediate?
    - A: We are working w/ TCG on a BOM/Manifest for a storage device
    - A: We did not really include intermediate devices; assume pass-through

- SMART: What about devices where part of device programmed in factory and customer site
  - A: Sooner the device identity and immutable code locked down, the better.
- What would the Security team like the Storage Project to do?
  - A: Please review checklist and see if it applies to storage devices
  - All work can be found at Security Project Wiki
- JohnG: Noted there is work at NVMe and PCIe (PWG) on “personality change”
- Drive Spec (PaulK, Lee, Ross)
  - We are working diligently through comments; there were hundreds (thanks)
  - We are resolving and removing overlaps, etc.
  - Will come back to Storage Group with review once done to review resolutions.
- EDSFF Workshop (Jonmichael, Ross, Cam)
  - Will be April 27, 9-11:15am
  - Invitations and more info will be out towards the end of March

## Notes

### **February 2021 (draft)**

- Thermal Modeling Update
  - Dave reported that we have put the work on hold due to lack of urgency
  - Kioxia noted that need may “come back” with E3/Gen5
  - We agreed to archive and put on Wiki, and perhaps socialize w/ other OCP projects
- NVMe SSD Requirements Document Discussion
  - Authors reviewing comments from companies
  - We’ll review some of it offline and some at next OCP Storage call
- NVMe HDD subgroup update
  - Topic suggestion from Facebook: Command Duration Limits has some implications for NVMe; would like to discuss. Agreed we’d take up in NVMe HDD workstream

### **January 2021**

- Update to Storage Project from Security Project
- Feedback on NVMe SSD Requirements Document (previously called Cloud SSD Specification) specification

### **December 2020**

- NVMe Cloud SSD Spec updates - 15 minutes

- Samsung Toolless E1.S carrier proposal updates + Q&A - 30 minutes
- NVMe HDD workstream kickoff update - 10 minutes

### **October 2020**

- NVMe Cloud SSD Update - 20m - Lee Prewitt/ Ross Stenfort
- NVMe Flash Platforms - 20m - Ross Stenfort

### **September 2020**

- ?????

### **May 2020**

- Latch Reference Designs for EDSSF - Anthony Constantine, Intel

### **March 2020**

HDD Vibration: Madhavan Ravi, FB and Matt Shumway, Seagate

### **February 2020**

- 1) HDD vibration sensitivity and mitigation proposals
  - a) Facebook

### **January 2020**

### **December 2019**

- 1) Cloud SSD Standardization Specification review and Q&A- Lee Prewitt & Ross Stenfort

### **November 2019**

- 1) Cloud SSD Standardization Specification proposal - Lee Prewitt & Ross Stenfort
- 2)

### **September 2019**

### **Agenda:**

1) Open Composable Sub-Group - acceptance of the Open Composable specification and discussion on possible sub-group to continue development

2) Swordfish profiles overview:

OCP's platform and server groups have defined standards-based interop profiles using the DMTF's REST-based Redfish Specification. SNIA has the Swordfish Specification which extends the Redfish Specification to manage storage, and has also developed a set of

feature-based profiles. Richelle Ahlvers, the Chair of the SNIA SSM TWG, which has developed the Swordfish Spec, schema and profiles, will present an overview of SNIA, the Swordfish profiles, and a proposal to leverage these directly to develop an interoperability profile set for OCP Storage.

3) F2F in October

### **June 13, 2019**

#### **Agenda**

- **New collaboration ideas**
  - **HDD interfaces**
  - **SMR zone sizes and use cases**
  - **Discussion on fast fail read corner cases**

### **May 9, 2019**

#### **Agenda**

- 1) Disk Storage Technology Presentation - Karim Kaddeche (L2 Drive, Inc)

#### **Attendees (name/company):**

Michael Thompson - nVent

### **April 11, 2019**

#### **Agenda**

- 2) Zipline compression - Susan Carrie (Microsoft)
- 3) **[Goose Lake JBOD - Gavin & Han (Inspur) ] Not available to present**
- 4) Open Composable sub-group - Mark Miquelon (WDC)

#### **Attendees (name/company):**

Jason Adrian - Microsoft  
Jorge Campello - Western Digital  
Sean Warnock - TUV Rheinland  
Michael Thompson - nVent

### **February** **2/14/2019**

**Agenda:**

Composable Architectures and Hardware Platforms, Mark Miquelon - Western Digital

**Attendees (name/company):**

Michael Thompson - nVent

**January****1/10/2019****Agenda:**

Discuss January 24 Storage Workshop

Call for presentations / topics for the workshop and future calls.

**Attendees (name/company):**

Michael Thompson - nVent

Jason Adrian - Microsoft

Jorge Campello - Western Digital

**November****11/8/2018****Agenda:**

1) PCIE G4 JBOF - MiTac

2) Open

**Attendees (name/company):**

Michael Thompson - nVent

Jorge Campello - Western Digital

Brett Henning - Broadcom

Philip Kufeldt - UCSC

Michael Yeh - MiTAC

**October Call Canceled** - Replaced with October 29 Face to Face meeting



**10/29/2018** Storage Workshop in San Jose Agenda:

<https://docs.google.com/document/d/1ljnbnz7Tq4cb30wbS0wp0T7rqdov-w5eeDU5i4fVxnl/edit?usp=sharing>

**9/13/2018**

**Agenda:**

- 1) Kingfish - A REST based API for Open Composability of disaggregated hardware (Mark Miquelon - WD)
- 2) Discuss survey poll results:
  - a) Meeting time
  - b) In-person meetings
  - c) Making the calls more interactive and productive
- 3) Fast Fail specification - next steps, progress, etc.
  - a) Bring lessons learned in face-to-face meeting in October, how can we move faster

**Attendees (name/company):**

Jason Adrian - Microsoft

Marty Czekalski - WDC

Sachin Desai - Cisco

Mark Miquelon - Western Digital - contact for Kingfish questions - mark.miquelon@wdc.com

Barrett Edwards - Western Digital

Chuck Sobey - ChannelScience

Michael Thompson - nVent

Jim Hatfield - Seagate

Howard Huang - Huawei

Jeff Nicholson - Western Digital

Mark Gaertner - Seagate

James Borden - Seagate

Brad Besmer - Broadcom

Warner Losh - Netflix

**8/9/2018**

**Agenda:**

- 0) Health Chain Management
- 1) Archival subgroup (Jason Adrian, Microsoft)
  - a) Interest in creating a subgroup dedicated to archival storage media such as tape and optical? Proposed charter: [Archival Storage Sub-Project Charter](#)
  - b) Tape media reliability testing methodology and models
  - c) Tape drive connectivity and protocols
- 2) Future storage media interfaces and connectivity (TBD, Seagate)
  - a) Where should in-system and inter-system connectivity go for HDD? SAS/SATA? NVMe? Ethernet? Considerations for end to end system topology and tradeoffs
- 3) Proposals for future topics and presentations for the next few calls
  - a) OpenBMC and management of NVMe drives and systems - Mark C

**Attendees (name/company):**

**Jason Adrian - Microsoft**

**Philip Kufeldt - Huawei**

**Jorge Campello - Western Digital**

**Dan Reno - Western Digital**

**Ralph Weber - Western Digital**

**Dave Landsman - Western Digital**

**Jim Hatfield - Seagate**

**David Burks- Seagate**

**Jason Feist - Seagate**

**Mike Miller - Seagate**

**Tim Walker - Seagate**

**Mary Dunn - Seagate**

**Muhammad - Seagate**

**Mark Carlson - TMC**

**Lawrence Ying - Google**

**Radha Ramachandran - Google**

**Matt Ninesling - Spectra Logic**

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**Past Calls:**

06/14/2018

**Attendees**

Jorge Campello

Richelle Ahlvers

Joe Breher

Marty Czekalski

Mary Dunn

Karim Kaddeche

Kali Burdette

**Agenda**

1. Cloud-optimized HDD JDA & Host Managed Fast-Fail Read Update (Lawrence Ying, Google)
2. SNIA Swordfish TWG Presentation (Richelle Ahlvers, Broadcom)

**Notes**

1. No update
2. Overview of SNIA and the Swordfish initiative. Discussed forming an alliance with SNIA for jointly defining profiles for OCP Storage.