OPEN
Compute Project

OCP U.S. SUMMIT 2017

Santa Clara, CA
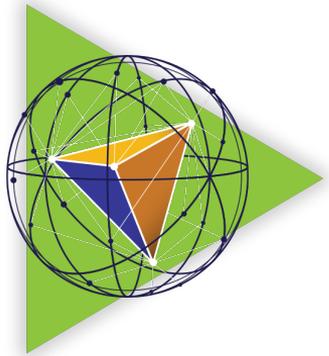
OPEN DRIVE TEST

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OPEN HARDWARE. **OPEN SOFTWARE.** **OPEN FUTURE.**

Agenda

- How are storage drives tested today?

- Why Open Drive Test?

- Who are the players?

- What are the Next Steps

How are storage drives tested today?

- Each Customer (CSPs, OEMs, …) tests HDD/SSD separately

- Let's say cost of ~$10-$20m/quarterly/CSP
    - Example: If 5 CSPs spend $15m/quarterly = $75/quarterly = $300m/year

- Time

- TCO

- Resources

- Sharing the Best Practices?

- Possible Delay in Time to Market of their Apps or Services

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Why Open Drive Test?

- Cost savings
- Share Best Practices
- Guideline (not a standard) to improve and accelerate the qualification process
- Focus on common criteria
- Prediction models
- Early quality excursion detection with large drives quantities tested
- Option of extra-long life tests
- Use open-computer enclosure design
- Testing so many drives in a uniform environment allows to build reliable failure prediction models

Considerations:

- End-user confidentiality (who buys drives, how many and when)
- Testing in the final system vs. generic testing in a standardized tester
- Burn-in vs. short integration test
- New integration failures at customer (should be a very low number but not zero)
- Test of specific drives for a specific customer (list of SNs) or any drives of the same type
- Testing with customer-unique firmware features
- Agreeing on these workload, temperature, duration, and failure criteria
- Is this a prelim test or a final test?
- Option of extra-long life tests
- Use open-computer enclosure design

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Considerations:

- Test location (cheaper energy geographies)

- Both SSD and HDD

- Typical time to test drives varies from days to weeks

- Failure rate reduction goals:

  In house testing: [————————————————————]

  Open Drive Testing: [————————————————]

- End-user confidentiality (who buys drives, how many and when)

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Who Are the Players?

Hyper Scalers (CSPs)

Drive Vendors

OCP/ SNIA?

Open Drive Test

Who Else?

OEMs

Test Labs
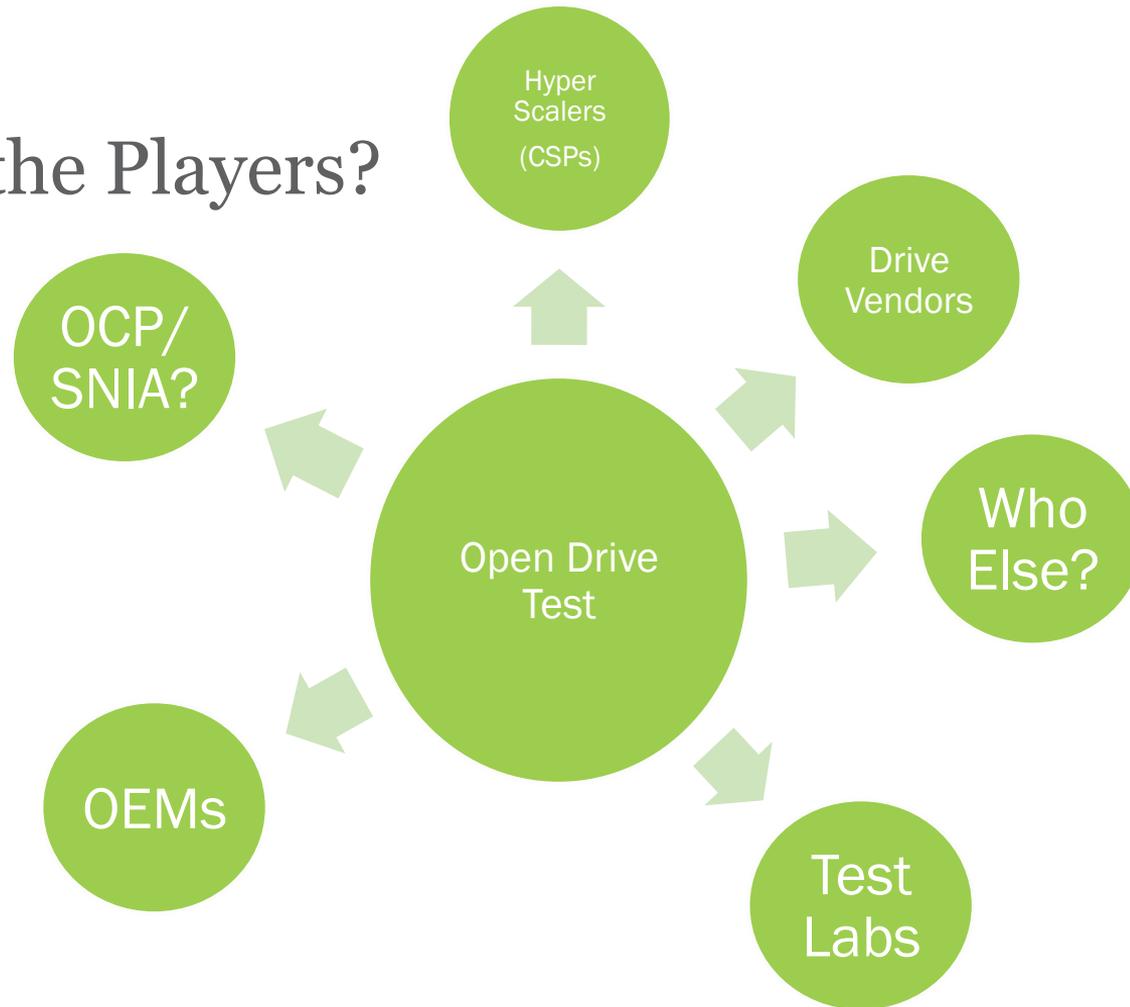
What are the Next Step

- How interested are you?

- Form a Working Group compiled of interested parties to work on a draft document.

- …

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