SFD8 - Day 1 - Pure Storage

Welcome and Intros

*Chadd Kenney, CTO, Americas @chaddkenney

Pure Storage Overview

- disruptively simple
- most efficient architecture
- mission-critical reliability
- consistent performance

leads to storage that can transform organisations
- business transformation is speed
- faster. smarter. innovative
- lower costs, simplicity, agility

"A better model for storage"
- evergreen storage
- forever flash
- all software included
- love your storage guarantee (30 day money-back)

FlashArray//m (120TB in 3RU - 40TB RAW)
mini scale
modular scale
mighty performance
meaningful simplicity

scale
//m20 (40TB in 3RU), //m50 (250TB in 7RU), //m70 (up to 400TB in 11RU)

dr and backup built-in
space-efficient local snaps
remote replication with snaps

ND* - Non-disruptive everything
- capacity expansion
- performance expansion
- hardware replacement
- software updates
All with zero performance impact

*Brian Schwarz - Director of Product Management - https://www.linkedin.com/pub/brian-schwarz/0/15a/166
Pure1 - cloud-based mgmt and support offering

delivering the best ongoing ownership experience
- foundation of non-disruptive upgrades

- pushbutton upgrades for support team - pre-flight checks in the cloud, auto sw bundle creation (reduce human decisions), next: automatically stage sw on the array Vision: no login upgrades

Why hasn't the consumer experience been brought into the DC?

call home data automatically generates support tickets (proactive). 70% tickets in Pure are auto-generated
Aggressive effort to correlate and reduce noise from automatically created alerts process incoming logs for known "fingerprints" to help prioritise delivery of fixes

"any manual process at scale is error-prone"

Pure want to automate the upgrade process so they can do it at scale and without human error

Pure1 Manage

Telemetrics every 30 seconds

https://pure1.purestorage.com

This is SaaS - so they can keep adding new features and capabilities without the customer needing to go around and update stuff.

[demo] 2 features added since release on June 1
- more detailed "card" overview of the array capacity, health, performance (trending over 6 months)
- recently added "analytics" tab - used for capacity planning

This is a really call feature IMO

the API is not currently published. Users often use the direct API of the array itself. You can leverage powershell and python if you like.

newer versions of Purity are backwards-compatible with older versions of the API
There's a community where Pure ppl, customers, etc are sharing scripts and integration pieces

Bill Cerreta - VP, HW Engineering - https://www.linkedin.com/pub/bill-cerreta/5b/708/b61

FlashArray//m

Previously a software company, last 2 years have developed hw product

modular and upgradeable
//m chassis
flash modules (20 in base chassis - 512GB, 1TB or 2TB)
NV-RAM modules - 2 or 4 HA NV-RAM

Expansion shelves - up to 4 shelves (12 or 24TB)
Controller modules - 2 HA Controllers
I/O Modules - 6 slots, 8 / 16Gbps FC or 10Gbps Ethernet, 2 x 10Gbps Ethernet onboard

stateless controller architecture - no big battery sitting in there

Evergreen storage has delivered in the last 4 yrs

FA-310 (2011 - Purity 1.0) - FA-320 (2012 - Purity 2.0) - FA-400 (2013 - Purity 3.0) - FA-450 (2014 - Purity 4.0) - FlashArray//m

- Never a disruptive upgrade
- Never required a data migration
- No customer left behind
- Rapid innovation cycle

Controller talks NVMe to the NV-RAM today

[Hardware resiliency Demo]
*Larry Touchette (tech Marketing at Pure) - https://www.linkedin.com/in/larrytouchette
*Ryan Oler (Training guy) - https://www.linkedin.com/pub/ryan-oler/14/780/aa

pulling a flash module - you lose about 4 - 5% (there's 20 modules in the chassis)
one flash module contains 2 SSDs

"puredrive list"

puts the flash modules back in different slots - checks what data is still good to use for recovery - "essentially self heals"

pulling the NV-RAM module - short spike in latency
When you pull this out, it writes DDR data out to internal NAND chips before it loses power

"purehost monitor dash dash balance" - does a brief IO sample on the array, good way to look at host traffic balance

*John Colgrove (Founder and CTO at Pure) - https://www.linkedin.com/pub/john-colgrove/30/67/959
"Fireside chat"

Scale out was rejected very early on in the Pure development due to cost
Turns out ppl aren't really as much into active / active as much as we'd think

Size of the array smaller - building pods - manageable fault domains