CARPE DATA
DELIVERING THE PLATFORM FOR DATA ADVANTAGE

INVESTOR WEBCAST
MATT KIXMOELLER, VP, PRODUCTS

DEC 9th, 2016
DATA POTENTIAL IS GROWING EXPONENTIALLY

BIG DATA  \times  FAST DATA \times  AGILE DATA = DATA ADVANTAGE

DIGITAL BIZ SENSORS DATA LAKES
FLASH 100 GbE MOORE'S LAW
MACHINE LEARNING REAL-TIME ANALYTICS RAPID DEVELOPMENT
DATA IS STRATEGIC TO BUSINESS

ACCELERATE DIGITAL BUSINESS

REAL-TIME ANALYTIC INSIGHT

TRANSFORM TO CLOUD IT
DATA HAS GRAVITY

CAN YOU AFFORD NOT TO OWN YOUR DATA ADVANTAGE?
STRATEGIES FOR DATA COMPROMISE

LEGACY STORAGE ARCHITECTURES

HYPER-CONVERGED

CLOUD

NOT BUILT FOR FLASH, NVMe, MOORE’S LAW

DATA’S JUST AN AFTERTHOUGHT OF YOUR SERVER ARCHITECTURE?

CHEAP TO STORE... ...BUT EXPENSIVE TO USE? ...AND IMPOSSIBLE TO REMOVE?
THE PLATFORM FOR DATA ADVANTAGE

ACCELERATE DIGITAL BUSINESS

REAL-TIME ANALYTIC INSIGHT

FAST DATA + BIG DATA

AGILE DATA

TRANSFORM TO CLOUD IT
100% FLASH WAS JUST THE START...
ALL FLASH, EVERYWHERE
SMART STORAGE
THE PLATFORM FOR DATA ADVANTAGE

EFFORTLESS

EFFICIENT

EVERGREEN
CONSOLIDATE EVERYTHING ON FLASH

TIER 1
TIER 2
DEV/TEST
BIG DATA & ANALYTICS

10X FASTER
10X SMALLER
INTRODUCING PETABYTE-SCALE //M

NEW

1.5 PB EFFECTIVE

7U

BROADWELL CONTROLLERS
80 CORES / SYSTEM

3.8 & 7.6 TERABYTE 3D-NAND FLASH MODULES

ALWAYS-ON QoS
WORKLOAD FAIRNESS

2 TERABYTES DRAM
SCALABLE METADATA
1PB OF FLASH OVER 5 YEARS

- **2012**: 6 Racks, 128-256 GB SSDs
- **2013**: 4 Racks, 256 GB SSDs
- **2014**: 2 Racks, 512GB SSDs
- **2015**: 28U, 1TB FMs
- **2016**: 10U, 3.8TB FMs
- **2017**: 3U, 16TB FMs

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WHAT’S NEXT: NVMe

IT’S ALREADY IN YOUR DEVICES

IT’S FASTER AND MORE PARALLEL THAN SAS

IT’S REQUIRED TO TAKE ADVANTAGE OF TOMORROW’S ADVANCES

1 SERIAL CHANNEL

64,000 PARALLEL Lanes

MASSIVELY MULTI-CORE CPUS

SUPER-DENSE SSDS

NEW MEMORY TECHNOLOGIES

HIGH-SPEED INTERCONNECTS

25-50-100 GBE
//M DESIGNED FOR NVMe
ALREADY RUNNING IN PRODUCTION DEPLOYMENTS FOR OVER 1.5 YEARS

DUAL-PORT HOT-PLUG NVMe NV-RAM DEVICES
An industry first when shipped in 2015!
Over 10,000 in service

NVMe & SAS-CAPABLE FLASH MODULE SLOTS
Built to support SAS and NVMe!

PURITY SOFTWARE OPTIMIZED FOR NVMe
Massively parallel and multi-threaded design
Global Flash Management across entire flash pool

CONTROLLERS WITH MODULAR I/O
SAS & NVMe internal and external networks are upgradable
FlashStack ALL-FLASH CONVERGED INFRASTRUCTURE

All-Flash CI solution tested and validated by Pure Storage

Designed, implemented, and supported by Pure partners

Best of breed components, flexible design

FLASHSTACK SOLUTIONS ARE AVAILABLE FOR:

- VMware
- Oracle
- SAP
- Microsoft SQL Server
- VMware Horizon View
- Citrix XenDesktop
- Microsoft Exchange
- SAP HANA
FLASHBLADE
THE UNSTRUCTURED DATA PLATFORM OF TOMORROW

BIG, FAST, SIMPLE
Unique scale-out HW & SW design
Up to 1.6PBs, 500K IOPS, and
15 GB/s in each 4U chassis
Designed to scale to 100s of blades

FILE + OBJECT
Share data across NFS + S3
Ideal for files, objects, or containers

BLADE
ELASTICITY
ELASTIC FABRIC
# Initial Use Cases

## Data Analytics

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<tr>
<td>Log &amp; Sensor Analysis</td>
<td>Oil and Gas Analytics</td>
<td>Genomic Sequencing &amp; Analysis</td>
<td>Financial &amp; Risk Modeling</td>
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## Technical Computing

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<td>SW DevOps, CI &amp; CD</td>
<td>Chip Design &amp; EDA Verification</td>
<td>Machine learning</td>
<td>Simulation HPC Compute Farms</td>
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## Rich Media

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<td>Movie Studios, SFX</td>
<td>Healthcare PACS</td>
<td>Gaming</td>
<td>User Images, Financial Images</td>
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APACHE SPARK RESULTS

- Large university
- 64 node Apache Spark Cluster
- >2,400 CPU cores
- Hundreds of local disks with HDFS
- Genomic analytic run required 4 days to complete
- Installed FlashBlade
- Connected all node via NFSv3 over 10GbE
- Genomic analytic run completed in 2 hours
INNOVATION³

SOFTWARE DRIVEN
- Purity
- Elasticity

CLOUD CONNECTED
- Pure1™

HARDWARE ACCELERATED
EXPANDED PURE STORAGE TAM
(WITH FLASHBLADE, 2016/2017 EXPANSION)

DAS
$17.1B

SAN
$18.2B

NAS
$6.6B

STORAGE SOFTWARE
$6.9B

PETABYTE-SCALE //M70

1

2

3

4

5

FlashStack

DAS CONSOLIDATION

//M10

FLASHBLADE

SCALE-OUT FILE & OBJECT
$18.6B

PURE DIRECT TAM
~$35B

STORAGE

INFR.
SW

REPLICATION
SOFTWARE

ADDRESSABLE

HYPERSCALE
(CAPTIVE)

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YoY STORAGE GAIN/LOSS
ALL ENTERPRISE STORAGE (DISK + FLASH), Q1 2015 – Q3 2016

YoY QUARTERLY GAIN/LOSS

Dell EMC

Hewlett Packard Enterprise

IBM

NetApp

$M


2015 2016

2015 2016

2015 2016

2015 2016

-17% -8.2% -13.2% -9.8% +57.7%