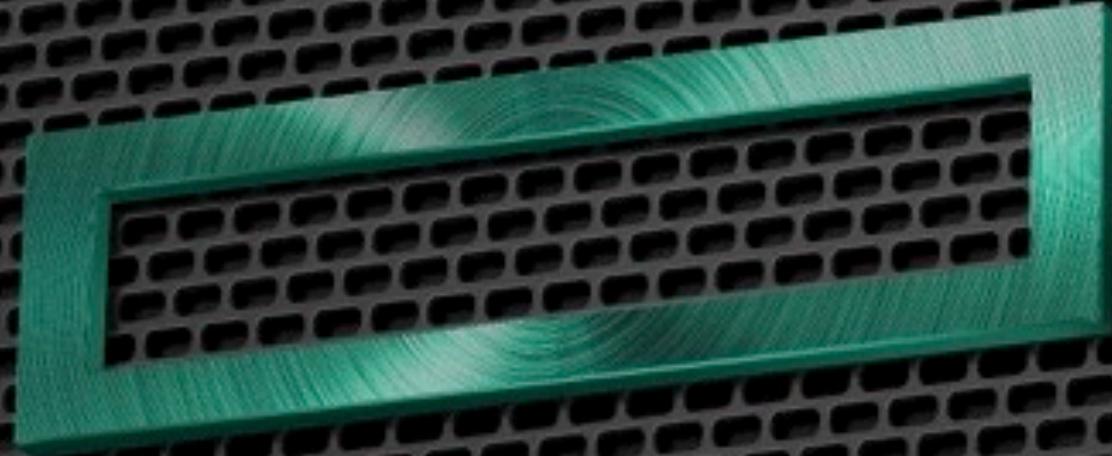




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Enterprise



# High Velocity with Composable Infrastructure

Jason White

Chief Technologist – Hybrid – I.T.

[jason.ross.white@hpe.com](mailto:jason.ross.white@hpe.com)

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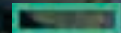


# Forward-looking statements

This presentation contains a rolling (up to three year) Roadmap and is subject to change without notice.

This document contains forward looking statements regarding future operations, product development, product capabilities and availability dates. This information is subject to substantial uncertainties and is subject to change at any time without prior notification. Statements contained in this document concerning these matters only reflect Hewlett-Packard Enterprise's predictions and / or expectations as of the date of this document and actual results and future plans of Hewlett-Packard Enterprise may differ significantly as a result of, among other things, changes in product strategy resulting from technological, internal corporate, market and other changes. This is not a commitment to deliver any material, code or functionality and should not be relied upon in making purchasing decisions.



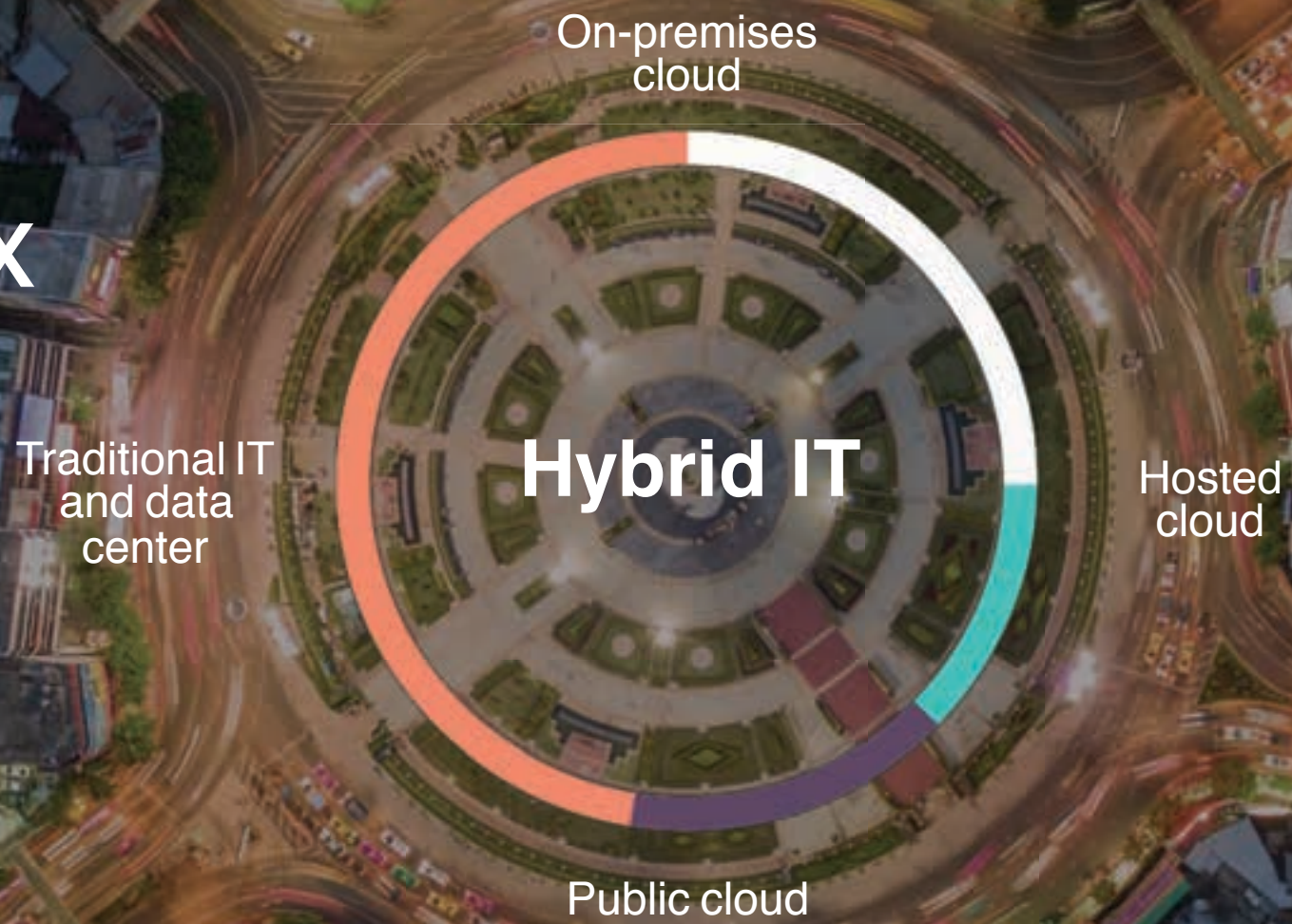


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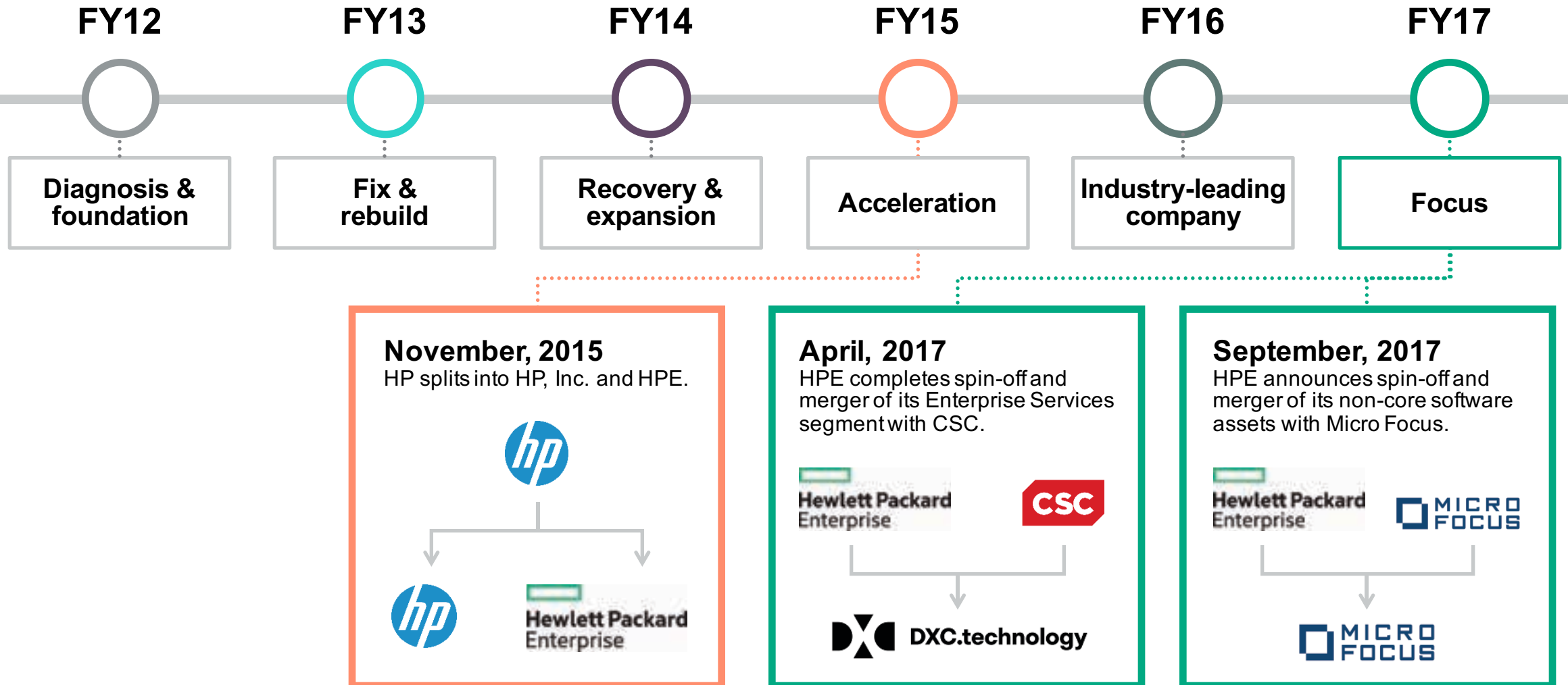
# More choices and complexity











# The Right Mix



# The Transformation of HPE...

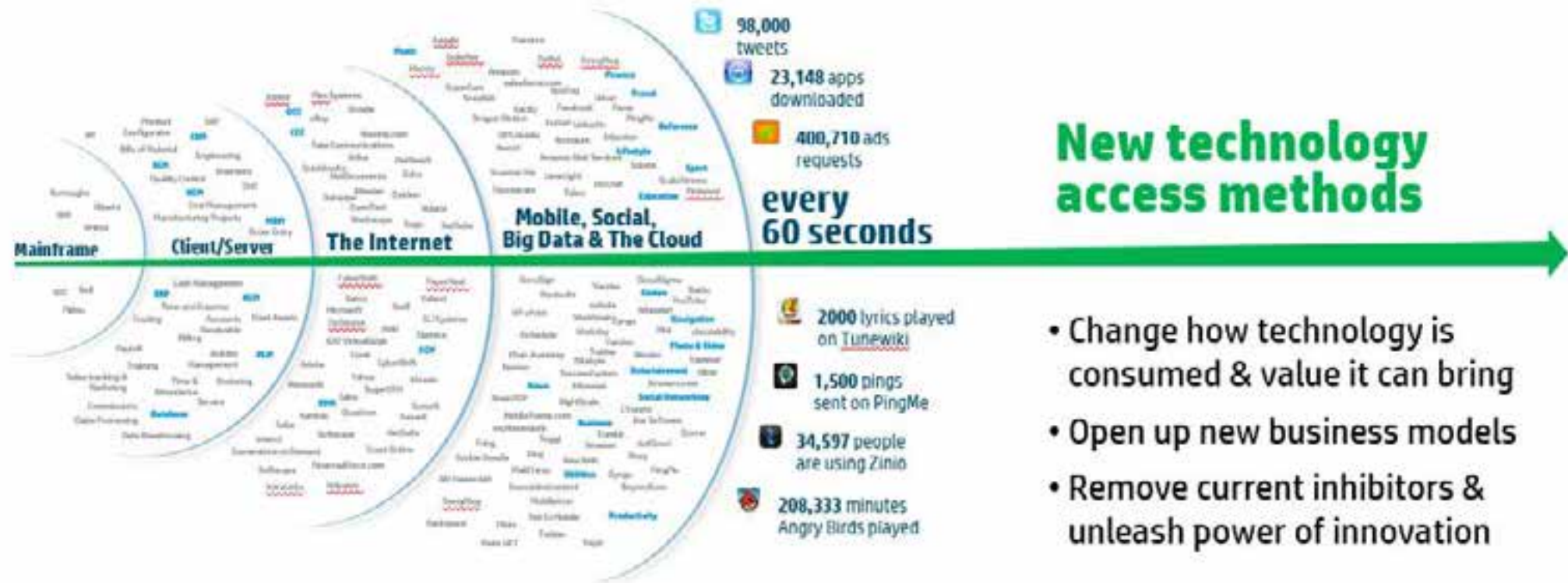


# Speed to where the world is heading...

 <b>Organic Investments</b>	 <b>Investments and Strategic Partnerships</b>	 <b>Inorganic - Targeted Acquisitions</b>	 <b>Portfolio Optimization</b>
<ul style="list-style-type: none"> <li>- <b>Synergy- Composable</b></li> <li>- Hyper Converged 380</li> <li>- Edgeline</li> <li>- OneView</li> <li>- Aruba Mobile First</li> <li>- All Flash</li> <li>- <b>The Machine</b></li> <li>- <b>OneSphere</b></li> <li>- <b>GreenLake</b></li> </ul>	<ul style="list-style-type: none"> <li>- <b>Veeam</b></li> <li>- Microsoft Azure</li> <li>- <b>Docker</b></li> <li>- Mesosphere</li> <li>- Chef</li> <li>- GE Digital</li> <li>- National Instruments</li> <li>- Scality</li> <li>- HP Inc.</li> <li>- DXC and Micro Focus</li> </ul>	<ul style="list-style-type: none"> <li>- Hybrid IT               <ul style="list-style-type: none"> <li>• SGI</li> <li>• <b>SimpliVity</b></li> <li>• <b>Nimble Storage</b></li> </ul> </li> <li>- Edge               <ul style="list-style-type: none"> <li>• <b>Aruba Networks</b></li> <li>• Niara</li> <li>• Rasa Networks</li> </ul> </li> <li>- Services               <ul style="list-style-type: none"> <li>• Cloud Cruiser</li> <li>• <b>Cloud Technology Partners</b></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- H3C deal</li> <li>- Mphasis stake sale</li> <li>- TippingPoint sale</li> <li>- Spin-merge of Enterprise Services business with CSC</li> <li>- Spin-merge of non-core software assets with Micro Focus</li> </ul>
			

# The pace of change is accelerating all around you...

Data Structures have dramatically changed over time.



- Change how technology is consumed & value it can bring
- Open up new business models
- Remove current inhibitors & unleash power of innovation

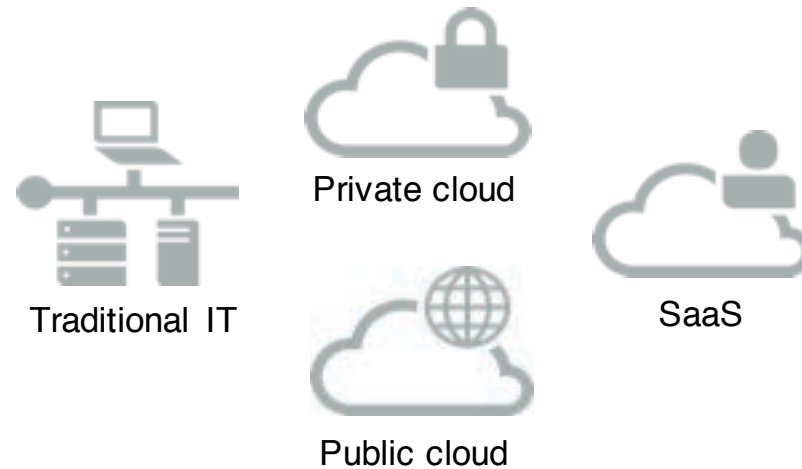
# The Evolution to Hybrid IT

## Traditional IT



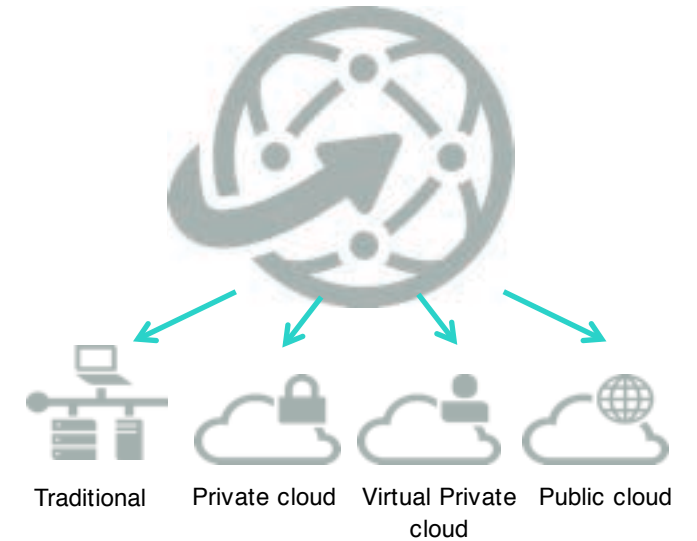
Dedicated, physical,  
homogenous  
**Internal Management  
Tools**

## Multiple IT Models



Multiple cloud deployment models  
**Each Managed Separately**

## Hybrid IT



Application centric, LOB focused, IT  
across multiple internal and cloud  
services

**Need Visibility and Management  
Across all IT Servers, Clouds,  
Applications**

# The Storage Industry is Continuing to Consolidate



**Move Towards a  
Hybrid Cloud Model**

**Accelerated Flash  
Storage Growth**

**Increased Use for  
Server Based Storage**

**Support for Future  
Storage Technologies**

Source: Forbes & Moor Insights & Strategy – “Five Things To Watch In Enterprise Storage In 2017”

# THE SHIFT IS NOT COMING. ITS ALREADY HAPPENING!

TECH TRADER DAILY

## Cisco Will Buy NetApp, Says Summit Redstone, PSTG 'Shopping Itself'

NetApp could be acquired by Cisco Systems, writes Srin Nandury of boutique research firm Summit Redstone, given that Cisco is weak in gear that competes with Hewlett Packard Enterprise. Another storage vendor, Pure Storage, has been trying to chip

## Summit Redstone: Pure Storage approaching potential buyers

Sep. 19, 2017 3:56 PM ET | By: [Brandy Betz](#), SA News Editor 

- Pure Storage (NYSE:[PSTG](#)) has approached Cisco, IBM, and HP about a potential sale, according to Summit Redstone.

## Tintri teeters on the edge of oblivion

Management faces the ghoulish and grisly truth

By [Chris Mellor](#) 18 Jun 2018 at 06:03

7 

SHARE ▼

# EMEA

# APJ

# LAR

# HPE Synergy Solutions



Traditional enterprise

Cloud native

## Data management

### Accelerate deployment

Compose your infrastructure to match the needs of your data.

**Oracle | SAP HANA |  
Microsoft SQL Server®**

Certs

- [SAP HANA TDI Certified](#)
- [Oracle Linux® Certified](#)

RAs/RCs

- [Oracle 12c w/ DAS, RC](#)
- [Oracle 12c w/ HPE 3PAR, RC](#)
- [Oracle 12c w/ HPE Synergy Image Streamer, RA](#)
- [Oracle 12c In-Memory OLAP, RA](#)
- [Microsoft SQL Server 2016, RA](#)
- [SAP HANA on Synergy, RA](#)
- [SQL Server 2017 w/ VMware vSphere, RA](#)

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Enterprise**

## Collaboration

### Increase flexibility

Deploy apps quickly to optimize efficiencies.

**Microsoft Exchange® |  
Microsoft SharePoint®**

RAs/RCs

- [Microsoft Exchange 2013, RC](#)
- [Microsoft Exchange & SharePoint 2016, RC](#)

## Virtualization and VDI

### Optimize infrastructure

Ideal for VM farms, and high-density and high-graphic VDI demands

**VMware® | Citrix |  
Oracle VM**

Certs

- [Oracle VM Certified](#)
- [VMware vSAN® Certified](#)

RA/RC/ Best Practices

- [Citrix XenDesktop®, RC](#)
- [SUSE Enterprise Storage](#)

Sizer

- [ESXi Sizing Tool](#)

## DevOps

### Fast deployment

Deploy/redeploy quickly with an automated process

**Docker | Mesosphere |  
Chef | Puppet | Ansible |  
Red Hat® OpenShift**

RA/RC

- [Docker \(EE\) w/ Image Streamer, RC](#)
- [Securing containers with Aqua Security, RC](#)
- [Kubernetes Containers, RC](#)
- [Fast Data Analytics on Mesosphere DC/OS, RA](#)
- [Red Hat OpenShift Container Platform, RC](#)

## Hybrid cloud

### Cost-effective

Run private cloud and traditional apps on shared infrastructure.

**Helion CloudSystem10**

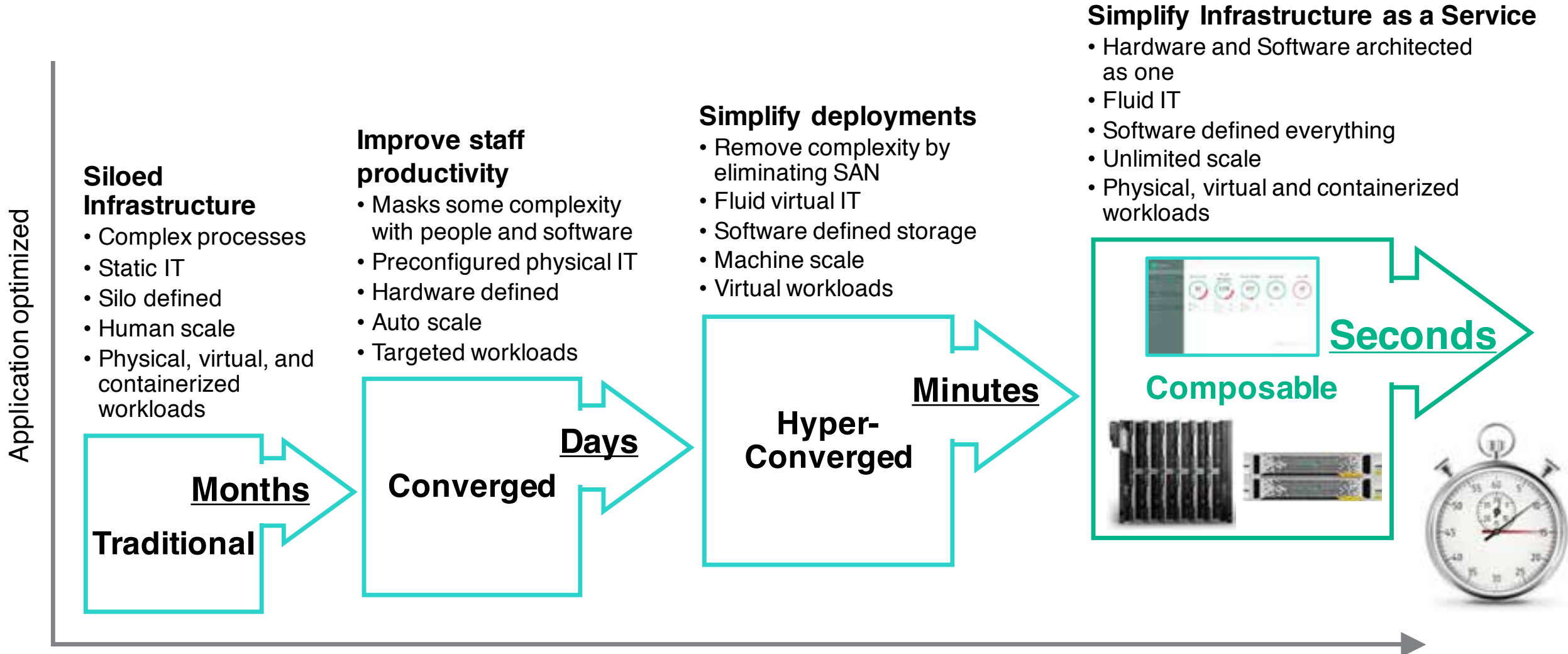
RA/RC

- [Helion CloudSystem 10, RA](#)

Certs

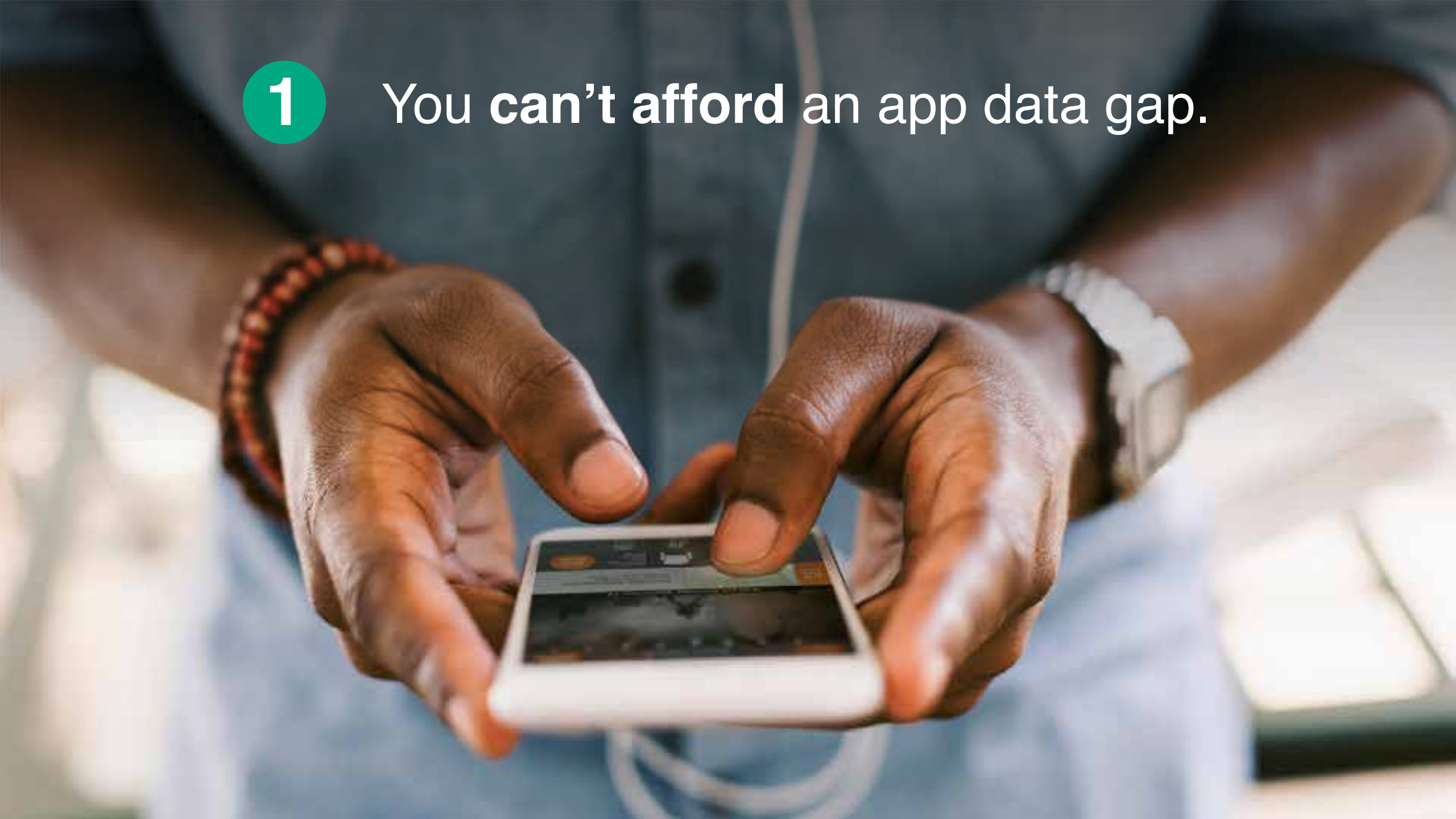
- [VMWare Cloud Foundation\\*](#)

# A new generation category of infrastructure for the Idea Economy



1

**You can't afford an app data gap.**



A close-up photograph of a person's hands holding a white smartphone. The person is wearing a blue denim shirt and a red beaded bracelet. A teal circle with a white border is overlaid on the image, containing the word 'Apps' in white text.

**Apps**

A central graphic element consisting of a grey circle with a white border. Inside the circle, the text 'Loading..' is written in white. This circle overlaps with the 'Apps' and 'Data' circles.

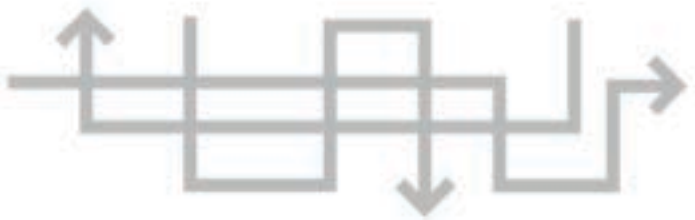
Loading..

A photograph of a man with a beard and brown hair, wearing a light blue patterned shirt, sitting at a desk in a server room. He is looking at several computer monitors displaying various data visualizations, including charts and graphs. A teal circle with a white border is overlaid on the image, containing the word 'Data' in white text.

**Data**

# Today's IT calls for a simpler, faster virtualization solution

**Siloed and complex**



**Traditional IT** struggles with limited, divided resources that can't keep up with business demands



**Simpler and faster**



**Today's idea-driven economy** calls for a simpler, faster virtualization solution

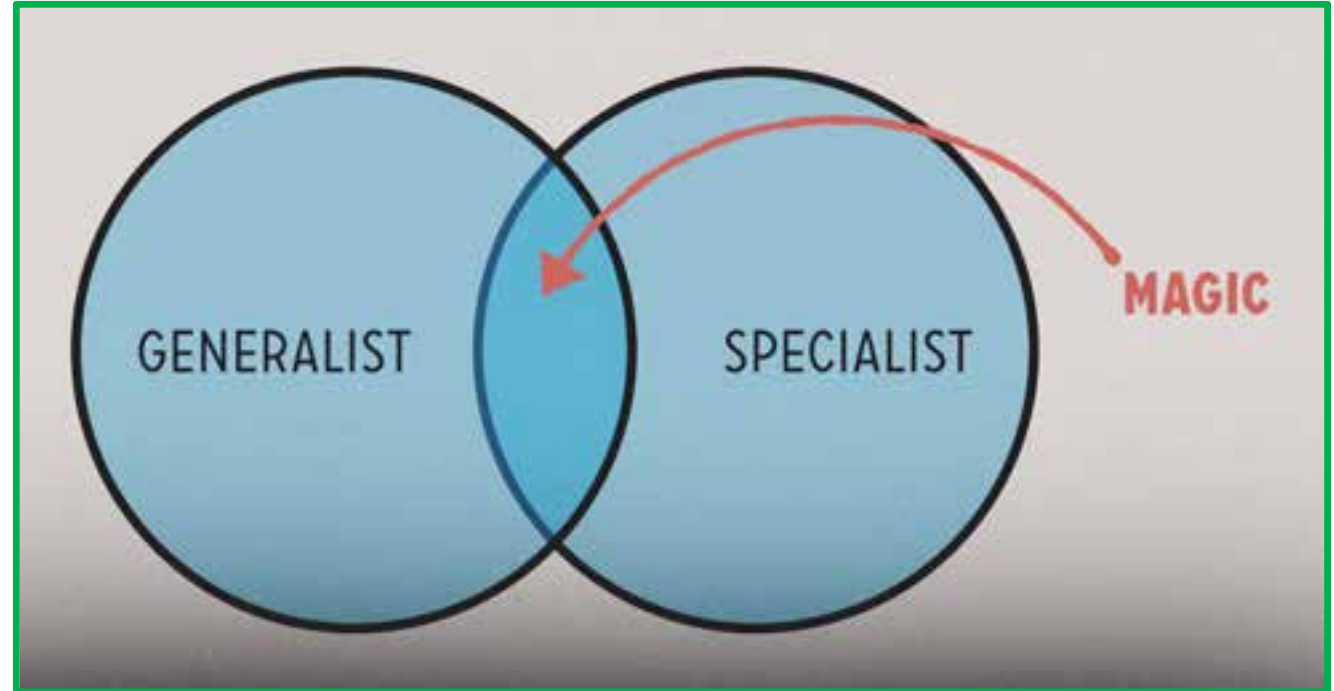
# The Rise of the (Deep) Generalist

Management Orchestration

Global APIs

Hyper-visor of choice

Cloud of Choice

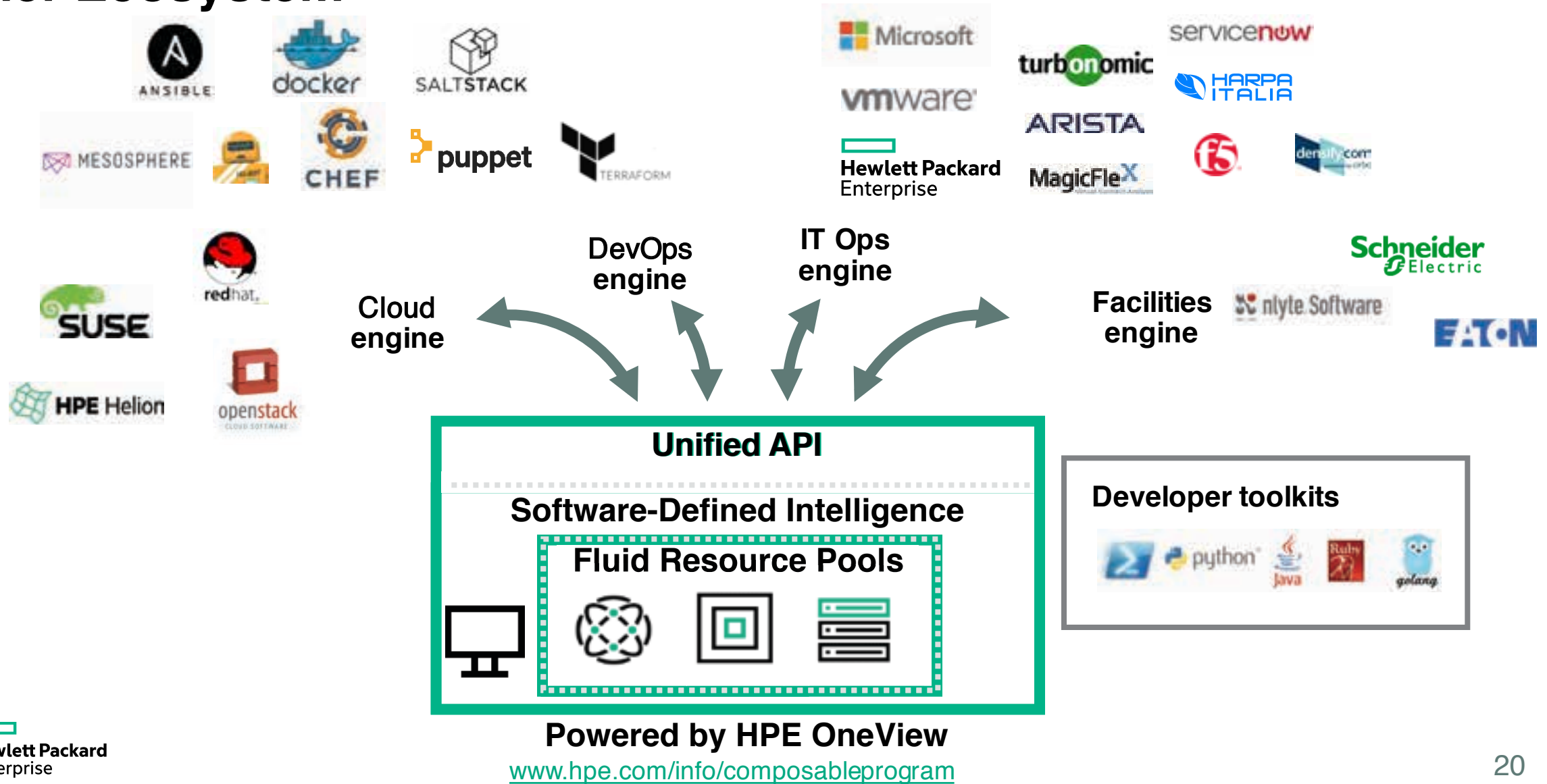




2

Infrastructure will be **self-managing** and **composable**

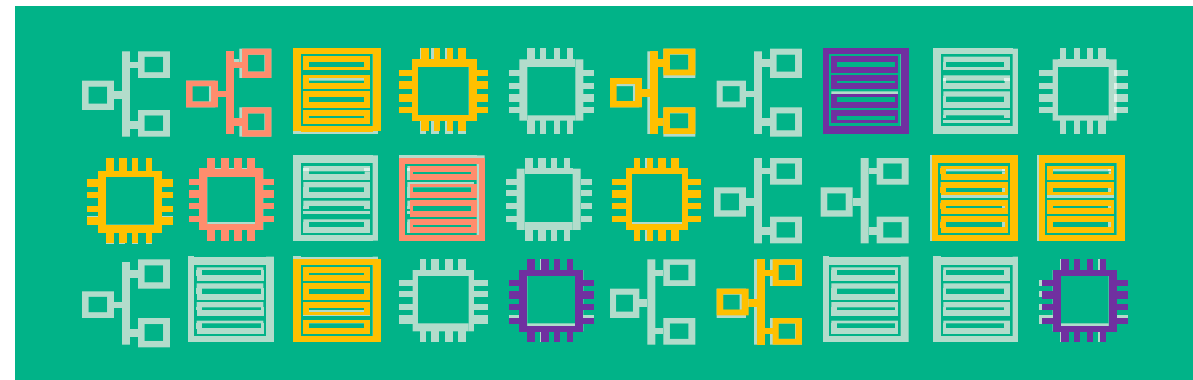
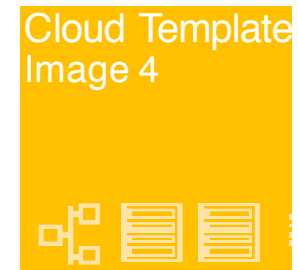
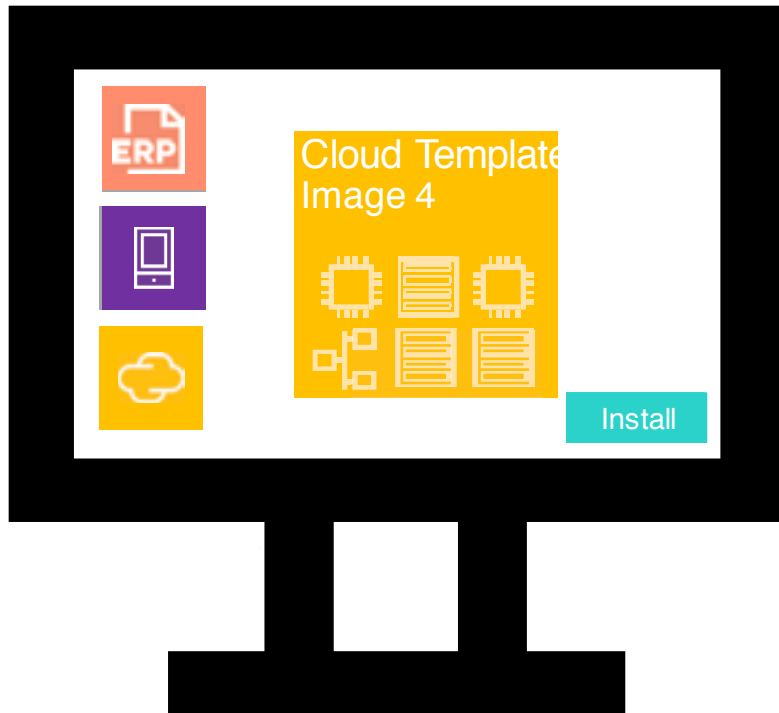
# Software-defined Infrastructure backed by the Industry's Broadest Partner Ecosystem



# HPE OneView Composer and Image Streamer

Compose and recompose resources for your unique application needs

## LIBRARY



# Transformational Power of HPE Synergy

I need ....

```
HPEOVServerProfile -name mysite01 -template ObjectS
```

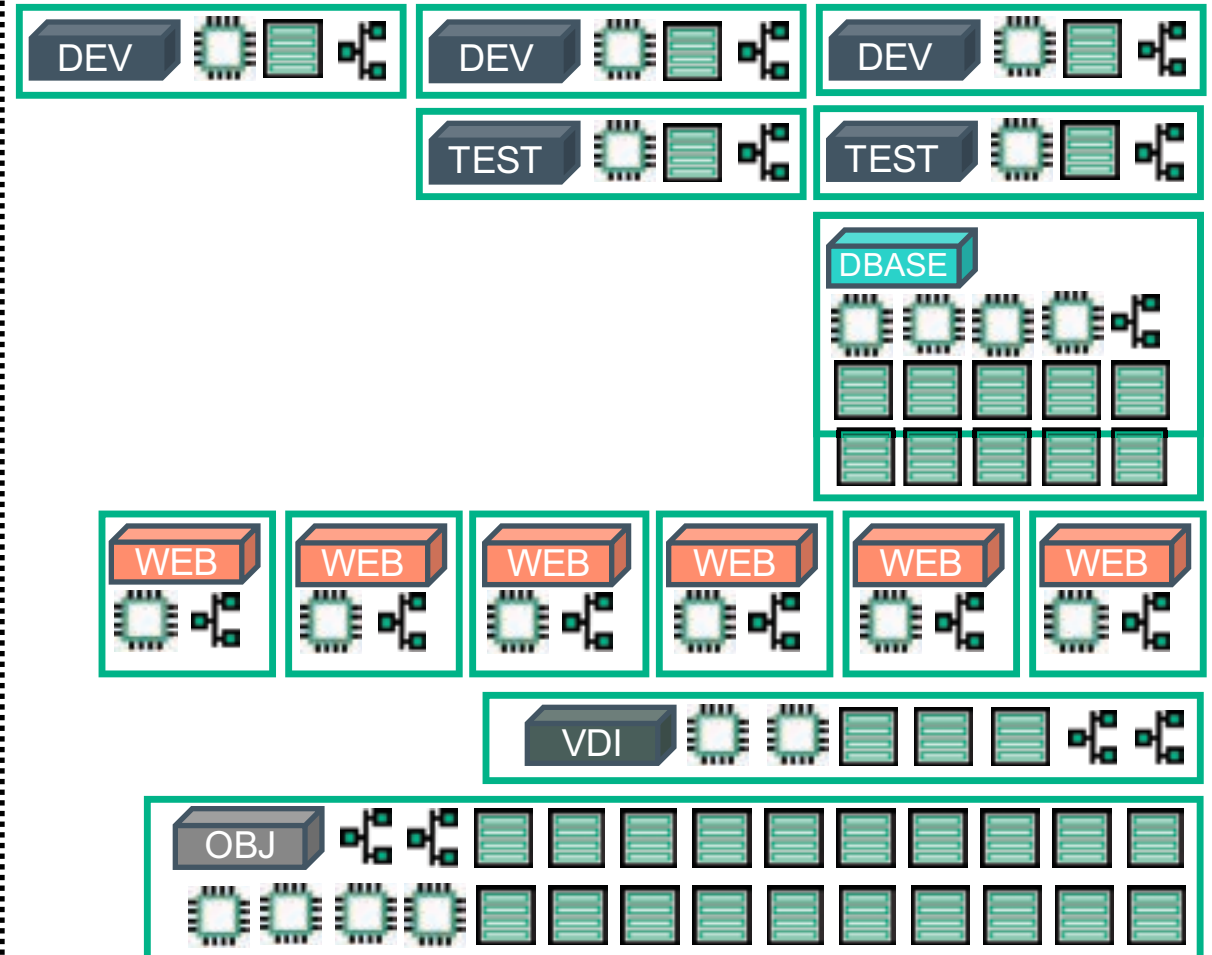
“App Dev/Test environment”

“Make that a bigger Database”

“Web for the holiday season”

“VDI now and holiday is over”

“and Object Storage”



How much code would it take to deploy a new compute resource?

- 22 lines

```

- Create all
- open
- init()
  - init() "C:\program\src\workspace\workspace"
  - Get the name of the working profile template that will be used to provision the working profile
  - is supported: true
  - Get the name of an existing workspace group to run this command
  - workspace_group_name: ""
  - Get the name of an existing profile template type to run this command
  - profile_template_type_name: "C:\src\src"
  - Get the name of an existing attribute resource
  - attribute_name: ""
- Close()
- Close() Create a new profile from a new profile template
  create_profile_profile()
  create() "C:\src\src"
  name
  workspace_group_name: "C:\src\src"
  name: "C:\src\src"
  profile: "C:\src\src"
  Create this
  Create the profile
  create() create

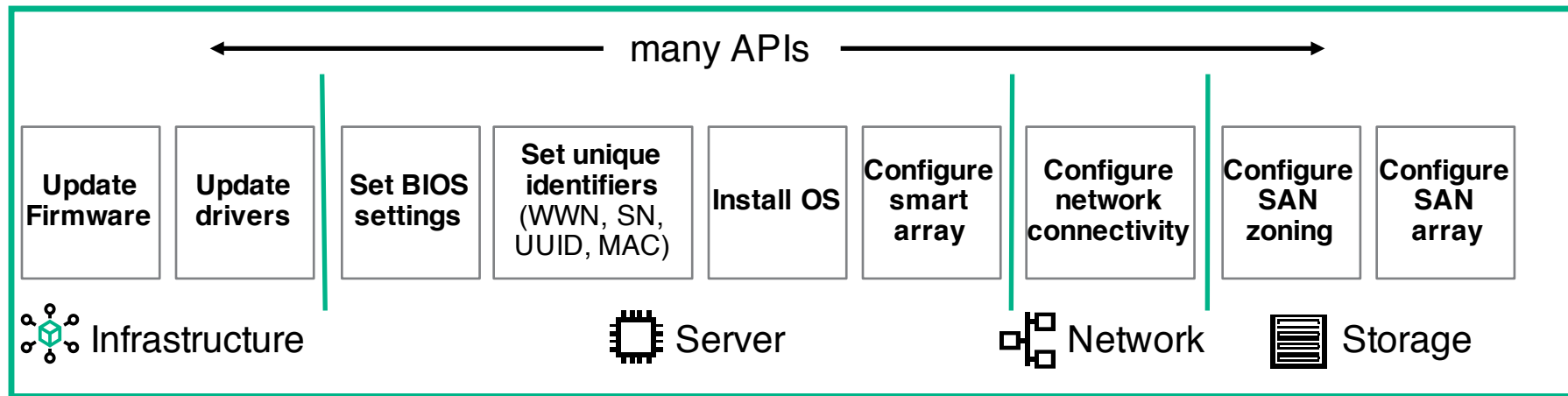
```

## - 168 lines

[illegible]

# Scripting multiple API's is complex and time consuming

Typical deployments require >50 scripts and 1000s of lines of code



Today

**50**  
hours

To integrate a  
third-party  
API

# HPE Composable API

Transforms infrastructure into a single line of code



```
HPOVProfile -name$name, -baseline$base, -sanStorage$san, server$server
```

**Unified API.**

**DevOps Friendly.**

**Makes bare metal private cloud as simple  
as the public cloud**

Reduce time  
to stand up  
infrastructure from



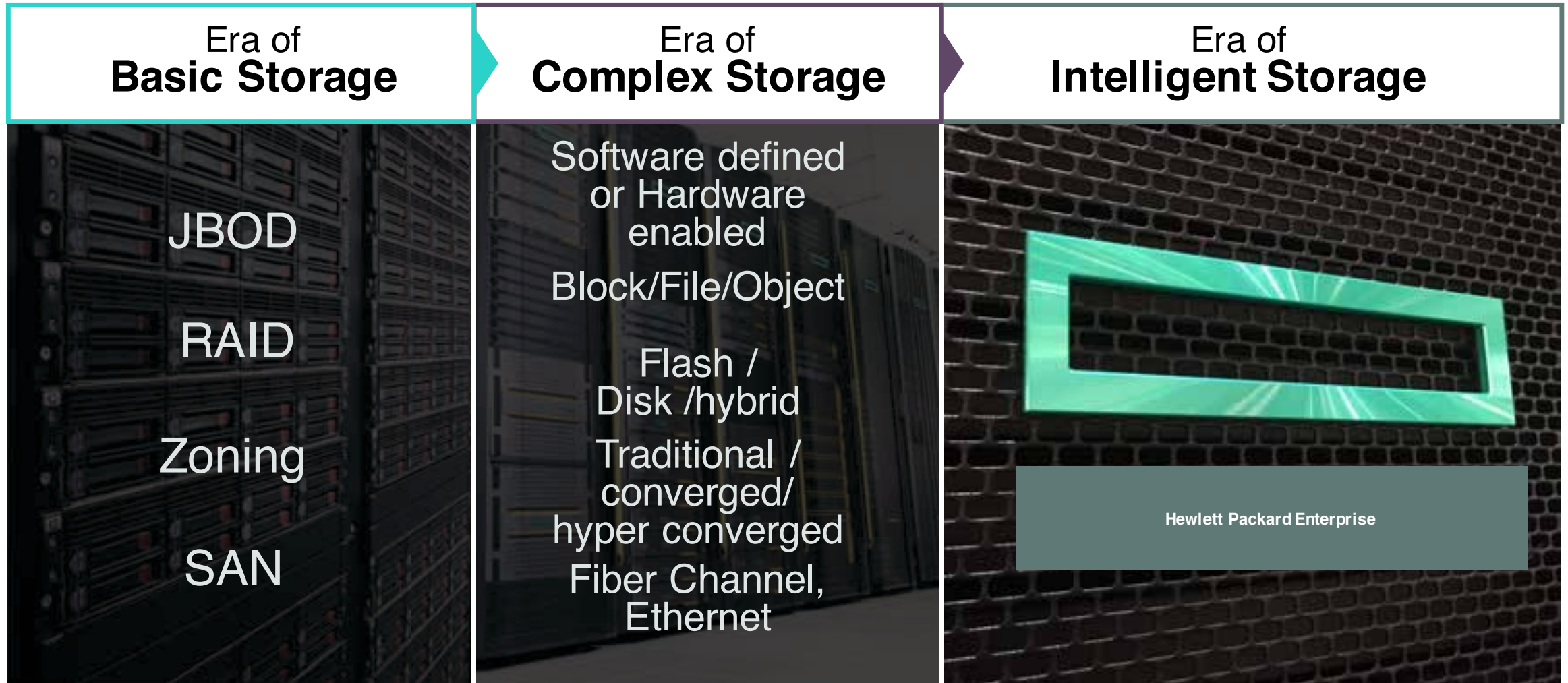
**50 hours**

to



**minutes**

# Storage needs to be more than where data lives



# HPE Storage is intelligent because it is *Predictive*

**Self-Managing**



**Self-Healing**



**Self-Optimizing**



Storage



Servers



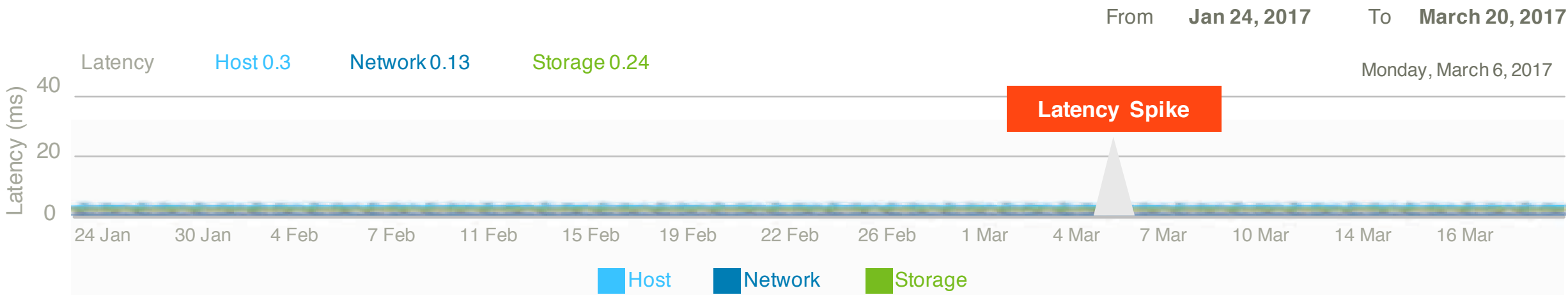
Networking



Converged

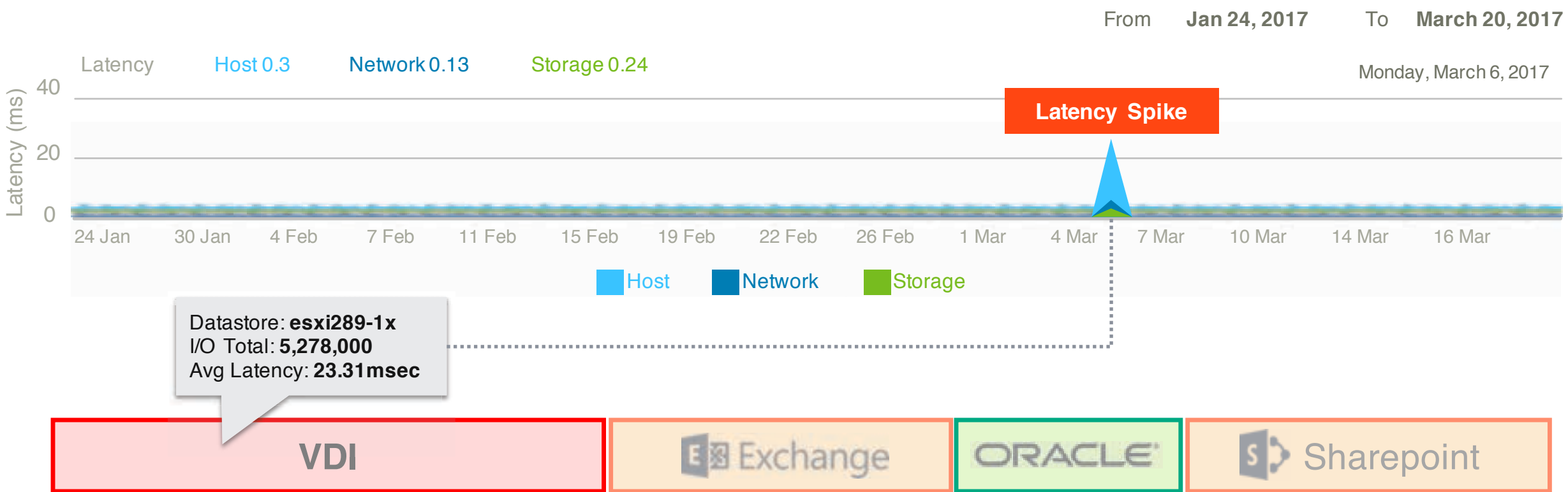
Powered by **HPE InfoSight**: AI for the Data Center

# Diagnoses Abnormal Latency with VMVision



HPE InfoSight VMVision

# Diagnoses Abnormal Latency with VMVision



# New Dashboard Look



# New Dashboard Panels

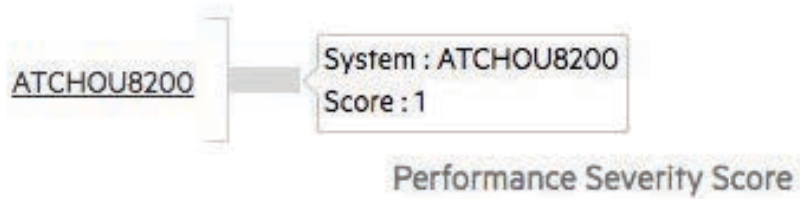
## Top Systems By Saturation 2



This panel lists the top storage systems ranked according to their performance severity scores over the past 24 hours or the user selected time period.

This panel lists the top storage systems ranked by their saturation levels over the past 24 hours or the user selected time period.

## Top Performance Outliers 1 ⓘ



# New Dashboard Panels

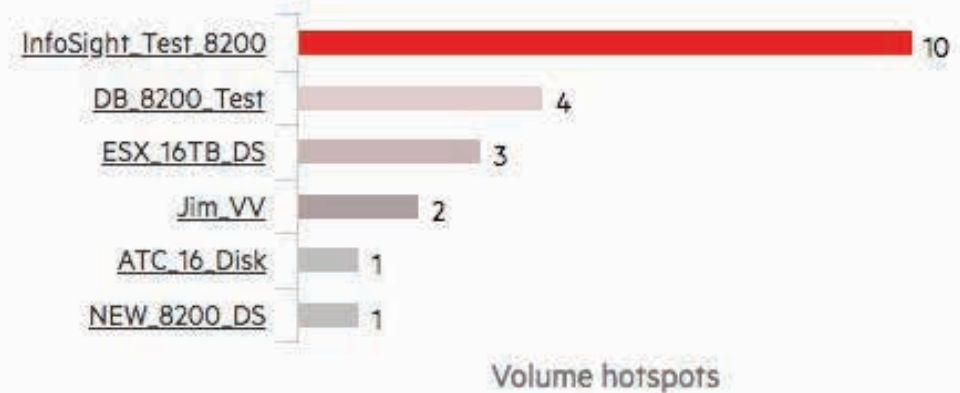
Top Volume Hotspots By IO/s 7



This panel gives a listing of volumes ranked by latency. At each 5-minute granularity, volumes are ranked by weighted average based on number of times they experienced high latencies. This average is calculated over the past 24 hours or the user selected time period.

This panel gives a listing of volumes ranked by IOPs. At each 5-minute granularity, volumes are ranked by weighted average based on number of times they experienced high IOPs. This average is calculated over the past 24 hours or the user selected time period.

Top Volume Hotspots By Latency 6 >



# HPE is Enabling High Velocity Software-Defined Data Centers!

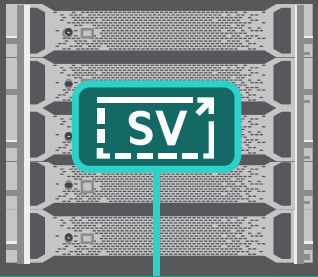


Common Infrastructure Management with HPE OneView

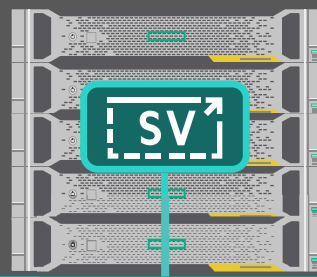
Bare metal or any Hypervisor: **vSphere** or **Hyper-V** or **KVM**

Any Form Factor

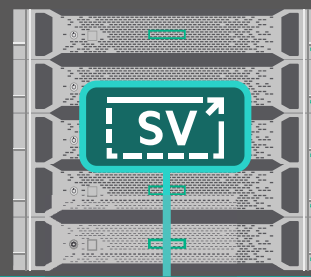
X86 Server + SDS



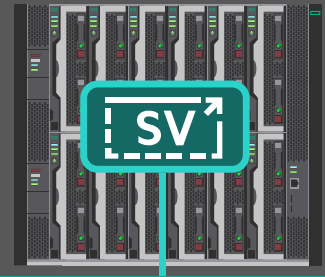
Storage Array



Hyper-Converged



Next-Gen Composable



Composable Data Fabric with HPE Software Defined Architecture

Run anything

Work efficiently

Move faster



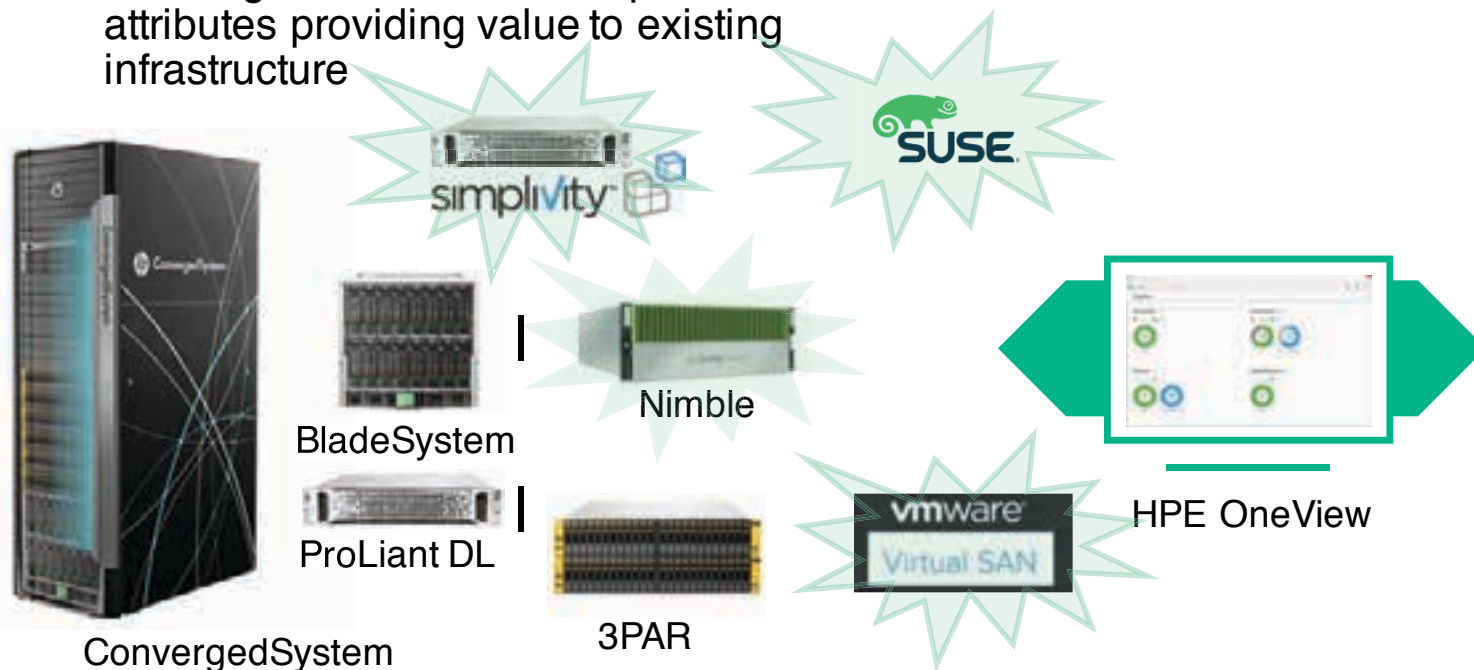
Fear nothing

# Many Paths to Composable Infrastructure!

More coming soon!

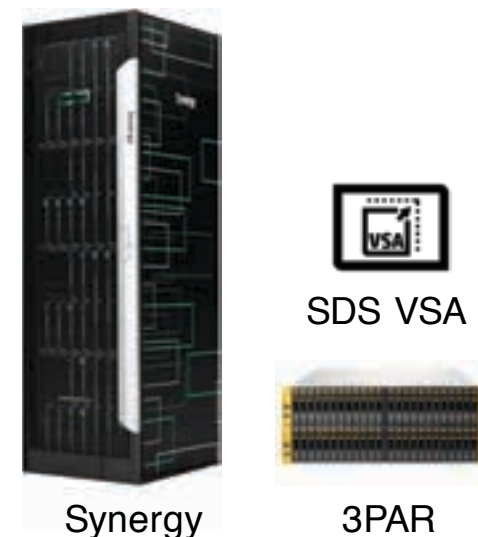
## Bridge to Composable

Converged Blocks with composable attributes providing value to existing infrastructure



## Fully Composable

A new category of infrastructure designed to accelerate application delivery in both traditional and new IT environments



Continuity and investment protection of tools, integration, and process

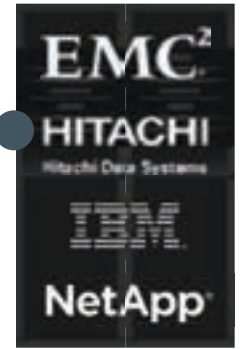
# Interoperability of composable and traditional infrastructures



Non-composable servers  
can access 3PAR storage



HPE Synergy compute can  
access  
non-composable storage



## But, non-composable servers can't:

Be fully provisioned by deploying server profiles from templates

Auto-provision new volumes on 3PAR arrays

Simultaneously assign and zone paths for server and SAN ports

Delete the volume and zones when the server is removed

## But, non-composable storage can't:

Be provisioned by HPE Synergy in a handful of short steps

Have paths and zones automatically assigned and zoned

Be provisioned as ephemeral storage that is automatically deleted and reclaimed

# Fluid resource pools for any storage tier

1

## Enterprise Flash

- Managed data services including performance QoS
- Highly available with disaster recovery
- CRM, ERP, Oracle, SQL, low latency and high IO

2

## Software Defined Storage

- Managed data services
- Scalable across frames
- VDI, App Dev, VM Farm, Web development

3

## Direct Attached

- Fully composable JBOD
- No fixed ratios to zone additional local capacity with compute
- Email, collaboration, stateless compute, object storage





# Tier 1 – Enterprise Flash

# Tier 1 Flash Storage in Synergy



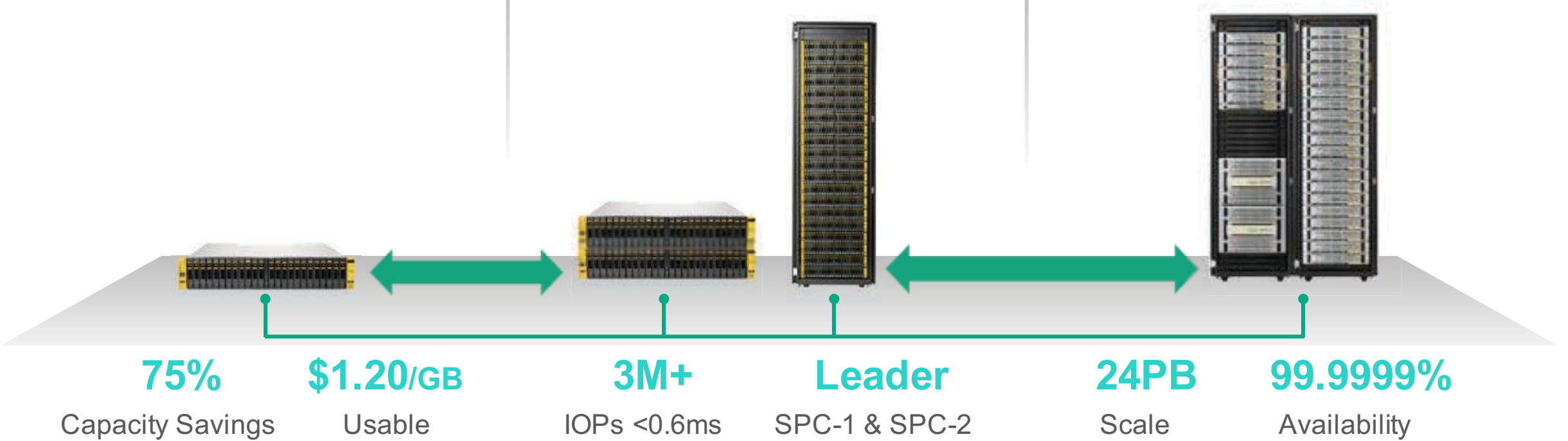
Affordable



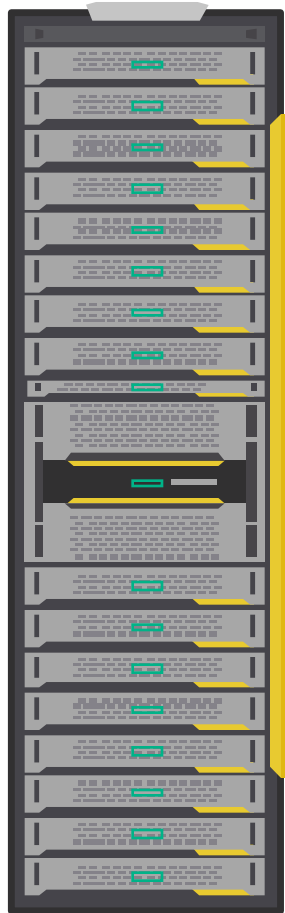
Lightning Fast



Enterprise-Class



# HPE 3PAR StoreServ 9450: Best in class all-flash consolidation

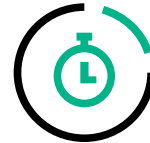


**Accelerate  
Applications**

Predictable  
Performance For  
Multitenant Workloads

**Almost 2 Million IOPS**  
@ <1ms latency

**34 GB/S**  
bandwidth



**Consolidate  
with Confidence**

Enterprise Grade  
Resiliency And  
Scalability

**99.9999**  
Capable

**18PB**  
Usable



**Serve  
Any Workload**

Unified Storage With  
Flexibility To Deploy  
Any Data Service

**File/Block**  
workloads

**80 I/O**  
Ports



**Respond  
faster**

Start up simplicity  
with all the software  
you could need

**Minutes**  
Storage/SAN installation

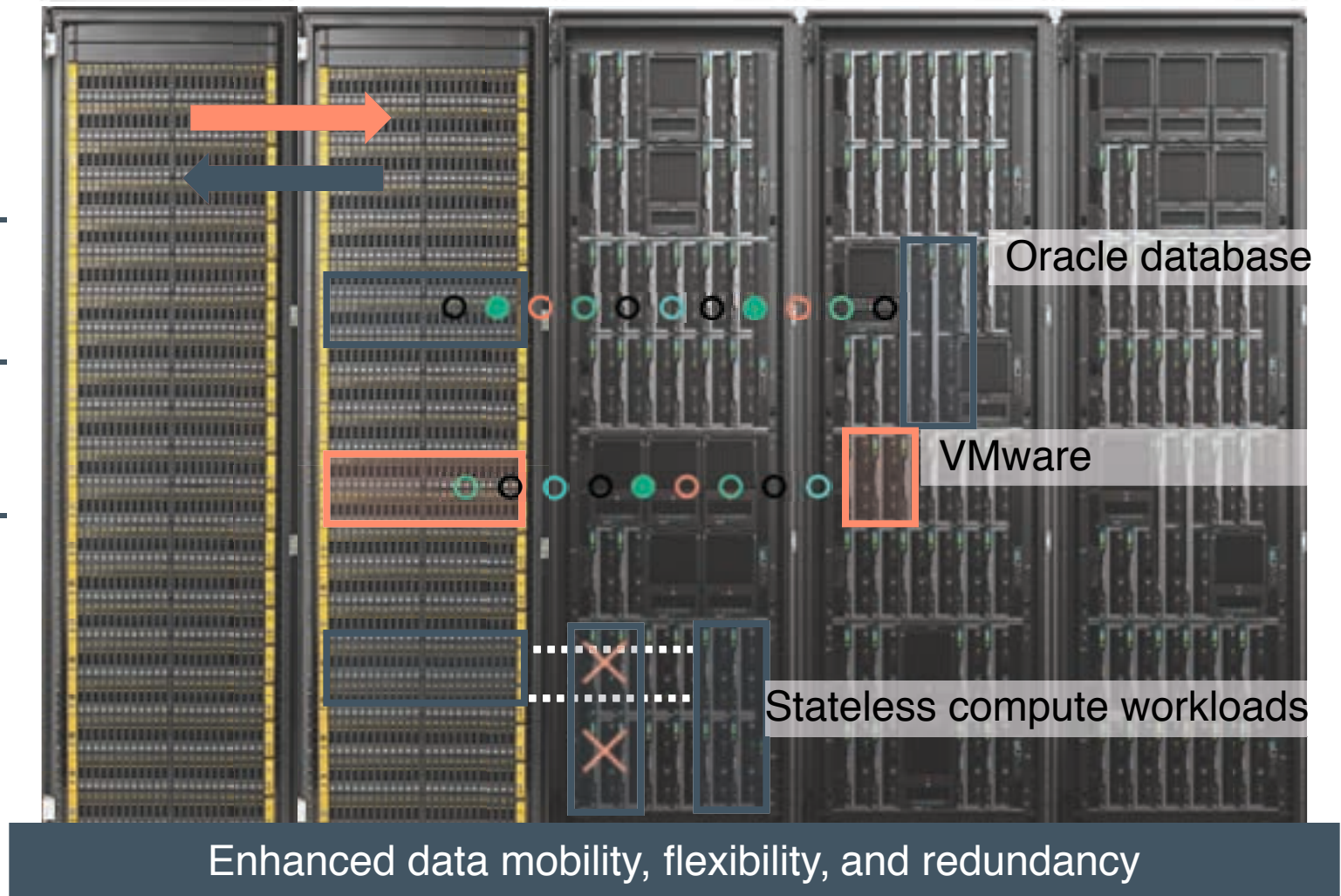
**All-inclusive**  
Software

# Composable all-flash arrays

Federated  
Storage

Composable  
volumes

Server profile  
mobility





# Tier 2 - Software Defined Storage

# Tier 2 - Software defined storage

## Software Defined Storage

- Managed data services for mid-tier storage
- Multi-site replication for data protection
- Expand access to storage resources between frames
- Adaptive optimization for efficient resource utilization

## Typical Workloads

- VDI
- VM farms
- Web development
- Shared DevOps volumes



# Shared storage access with software-defined storage

## Synergy D3940 – Ideal platform for Software Defined Storage

- D3940 provides highly scalable, composable DAS for VSA host nodes
- Share iSCSI storage between frames on flat master-satellite fabric
- Flexible ratio of zoned drives to host nodes
- Non-blocking SAS fabric for optimal performance between host and zoned drives
- Support for both HDDs and SSDs to enable Adaptive Optimization



# Software Defined Storage on Synergy

VSA cluster  
distributed  
between frames

Compute in  
different frames  
can attach to  
cluster

Access failover  
between frames



Enhanced data mobility, flexibility, and redundancy



# Tier 3 - Local & Zoned DAS Storage

# Tier 3 Density optimized composable DAS

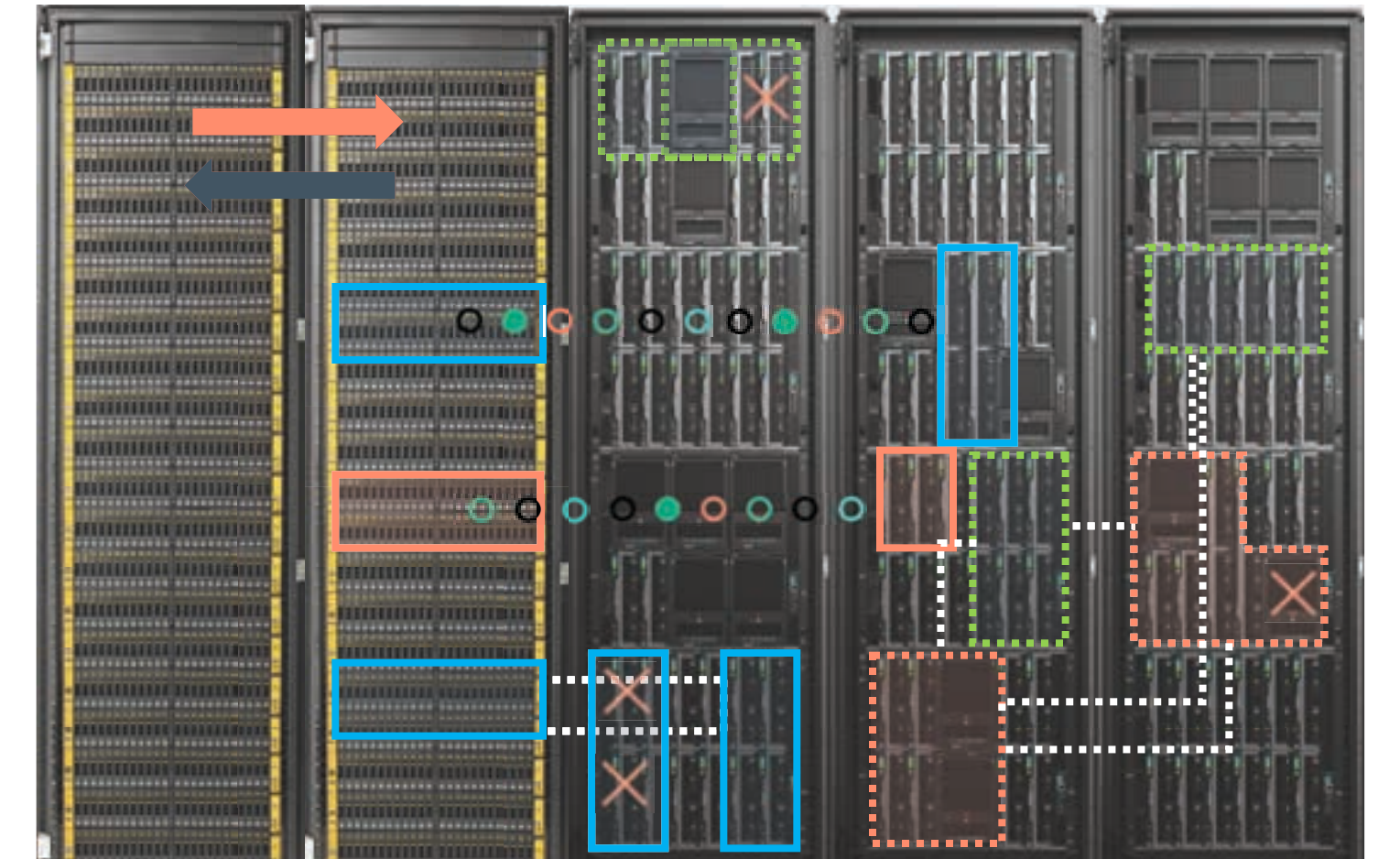
## Density Optimized composable DAS

- High capacity JBOD without fixed ratios to compute
- Low initial cost
- Brings storage closer to compute

## Typical Workloads

- Applications with native data services
- Collaboration / email
- Simple file shares
- Performance object stores
  - Hadoop
  - Replicated DB objects
- Storage for stateless compute modules





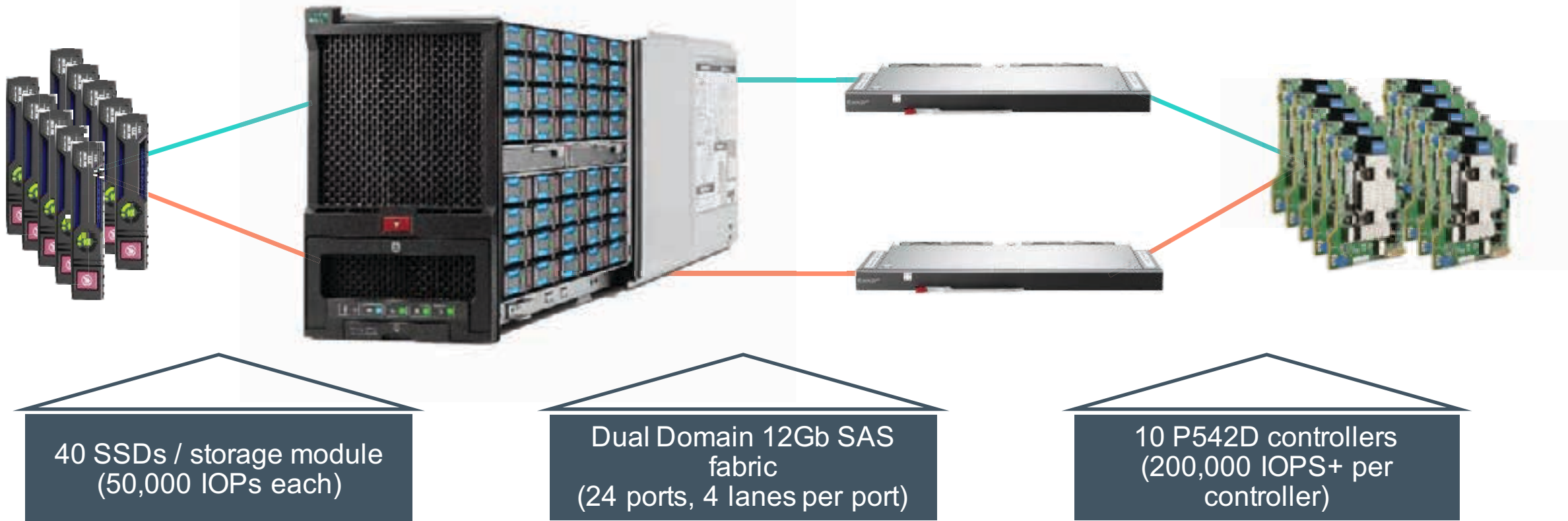
## Enhanced data mobility, flexibility, and redundancy

# Non-Blocking SAS Infrastructure

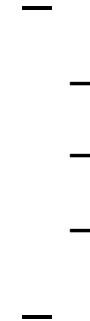


# Unrestricted performance to unlock the value of SSDs on DAS

## Non-Blocking SAS Fabric delivers up to 2M IOPs\*



# Simplify virtualized environments with HPE SimpliVity & Plexxi



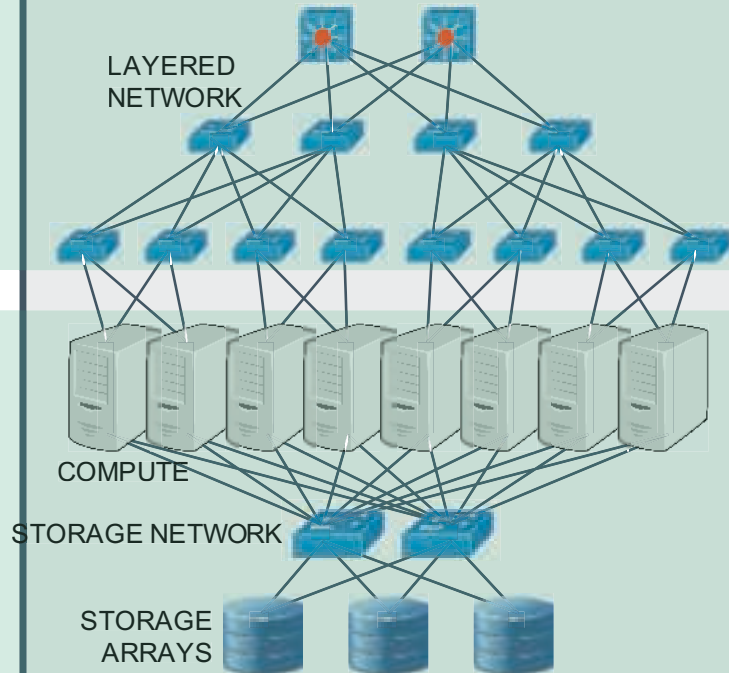
Start with 100VMs and scale to 2880VMs  
as single easy-to-deploy system

# HPE SimpliVity Hyperconverged Solution

Network

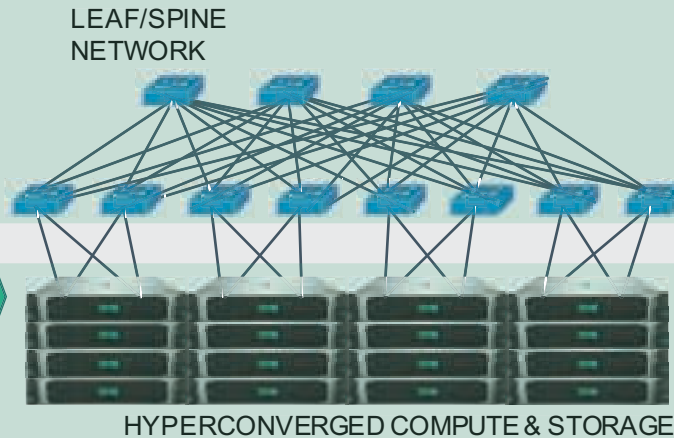
Storage +  
Compute

## DIVERGED RESOURCES ADDS COMPLEXITY



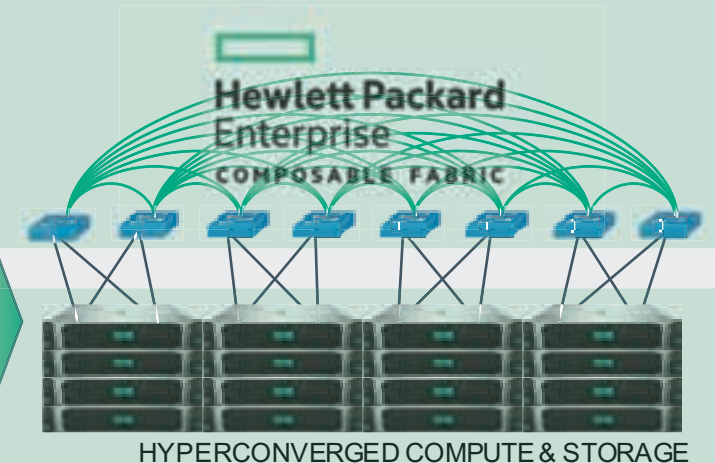
PAST

## L/S ENABLES EAST-WEST TRAFFIC HCI VIRTUALIZES SAN



2013

## COMPOSABLE FABRIC FURTHER REMOVES COMPLEXITY



NOW



**3** Protection must be **embedded in-band**.

An aerial view of a city skyline at sunset. The sun is low on the horizon, casting a warm orange glow over the city. The sky is filled with soft, colorful clouds. The city is densely packed with buildings, and the overall atmosphere is serene and dramatic.

3 of 4

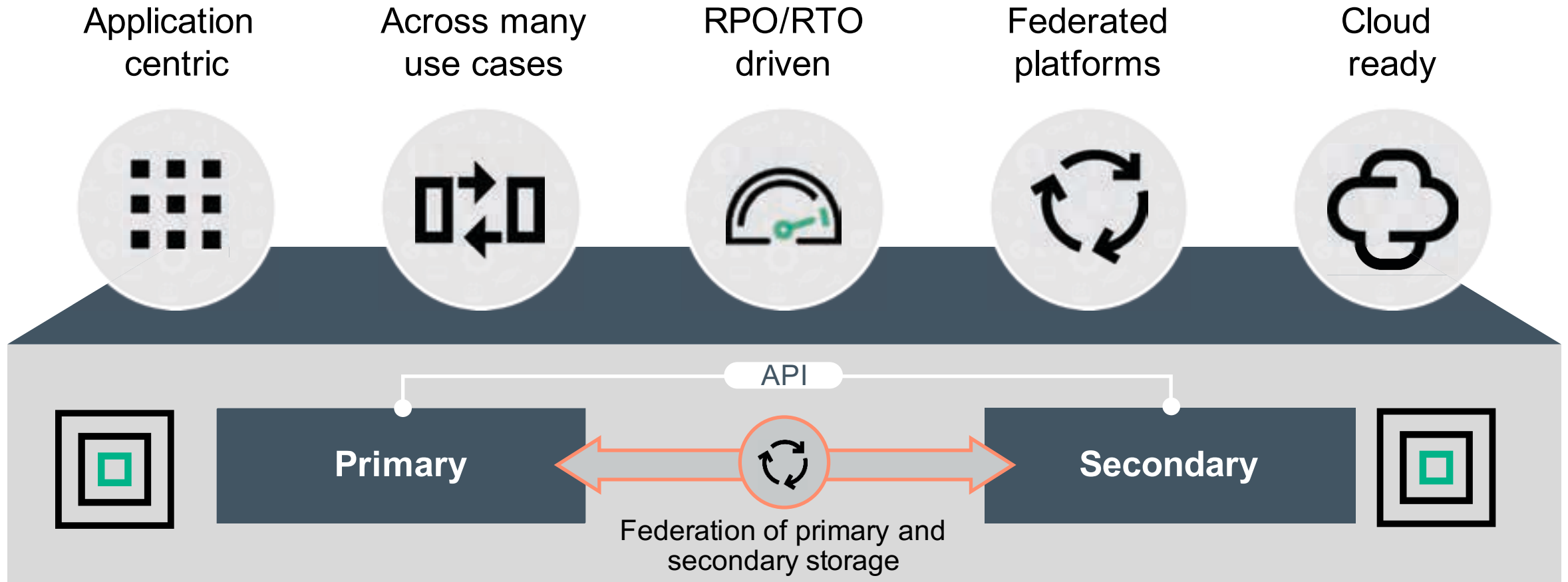
organizations surveyed recognize  
they have a Protection Gap

66%

admit that digital transformation  
is being held back by unplanned  
downtime

What if we **protected** at time of provisioning?

# Key tenets for investment in your enterprise



## Federated

### Primary Storage



3PAR  
StoreServ



Nimble  
Storage

### Secondary Storage



StoreOnce



Nimble SF

## Integrated

### Zero Impact App Protection

Recovery Manager Central

vmware

ORACLE

SAP HANA

Microsoft  
SQL Server

Microsoft  
apps using VSS

### ISV Integrations

StoreOnce Catalyst

VEEAM

HPE Data Protector

VERITAS

## Cloud-Ready



Move to  
Object Storage

StoreOnce CloudBank

amazon  
web services

Microsoft  
Azure

SCALITY

**\$0.001/GB/month\***

\*Assuming dedupe ratio of 20:1 and AWS (S3) standard object storage pricing of \$0.02 per GB

# New additions to our data protection portfolio

## Nimble Storage Secondary Flash

Put your backup data to work – run real workloads  
on your secondary storage

- Cost effective for backups through dedupe & compression
- Fast hybrid flash performance for running real workloads
- Optimized for Veeam and native replication



## StoreOnce CloudBank and RMC 4.1

Reduce bandwidth use by 99% in the cloud  
Protect data 23x faster, Recover 15x faster\*

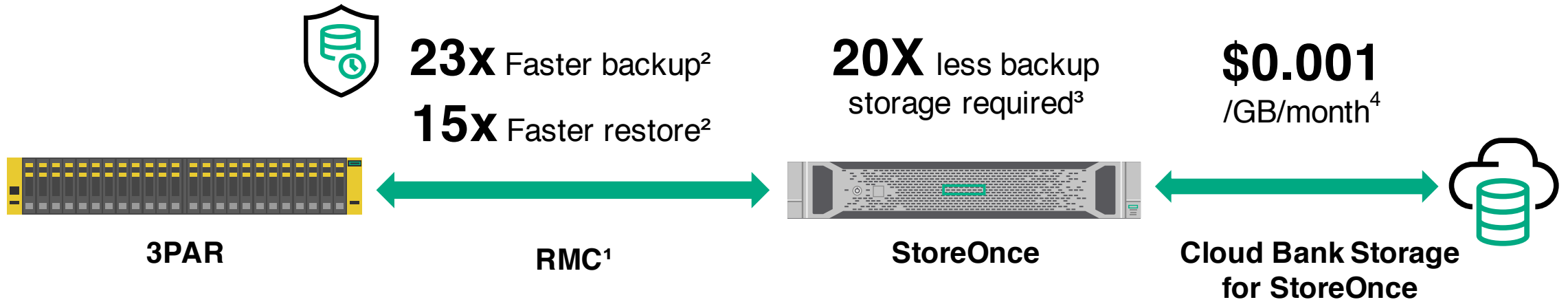
- Lowest cost long term protection tier
- Instantly cloud-enable apps and backup ISVs
- Now with granular item recovery via Veeam Explorer



Source: HPE testing of RMC compared to traditional server-based backup

# HPE Recovery Manager Central (RMC)

Flash speed protection for Hybrid IT with less cost and complexity



## Fast

Flash speed with  
zero app impact



## Efficient

Flash and app-embedded,  
de-duplicated and cloud ready



## Simple

Automated with self-service for  
app owners



## Reliable

Replication performance +  
backup protection

# Create a new Catalyst Store

## Stores

Name	Version	Status
dpstore1	2	Online
cloudbank	2	Online



## New Store

Catalyst Store Details

Name

CloudBanktest1

Description

Catalyst Store 3

Data Job Log Retention Period (Days)

90

Days (Range: 1 - 365, Default: 90)

Inbound Copy Job Log Retention Period (Days)

90

Days (Range: 1 - 365, Default: 90)

Outbound Copy Job Log Retention Period (Days)

90

Days (Range: 1 - 365, Default: 90)

Primary (Default) Transfer Policy

Low Bandwidth

Secondary Transfer Policy

High Bandwidth

Physical Data Size Quota

☐ 0 GB

Logical Data Size Quota

☐ 0 GB

Store Encryption Enabled

☐ Not Licensed

Store is Federated

☐

CloudBank

☐

CloudBank

☒

Cloud Service Provider

Amazon

Access Key

-

Criteria: 20 alpha-numeric characters

Secret Key

•

Criteria: 40 alpha-numeric-slash-plus characters

Host

-

Criteria: must start with https or http

Port

443

AWS Signature Version

4

Bucket Name

-

Criteria: 3-63 alpha-numeric-hyphen characters

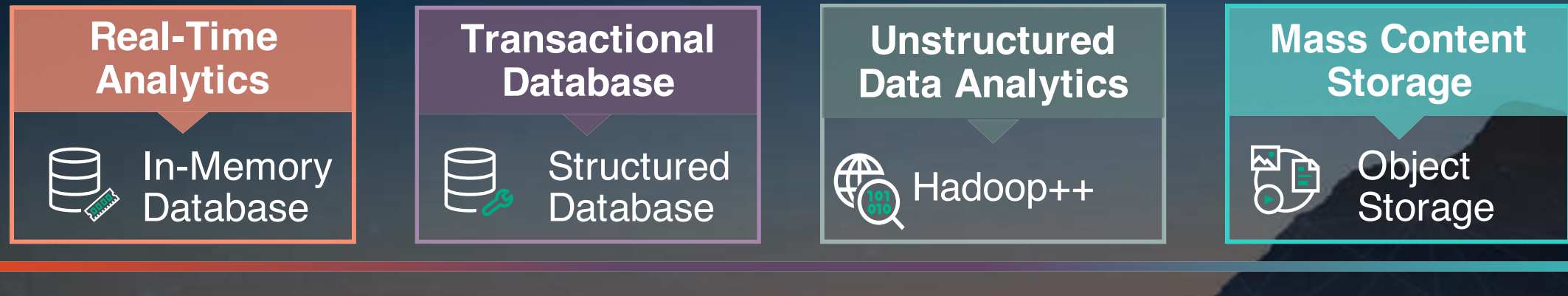
Recover CloudBank Store

☐

4 Hot is getting **hotter**. Cold is getting **bigger**.



# You need a unified approach to an **expanding ecosystem**



**IDC predicts that the amount of data will reach 40 zettabytes by 2020, and more than 163 zettabytes a year by 2025.**

SAP HANA

ORACLE  
Microsoft  
SQL Server

Hortonworks  
cloudera  
MAPR  
bluedata  
APACHE  
Spark

SCALITY  
Qumulo  
SwiftStack  
SUSE  
ctera

## Real-Time Analytics



In-Memory Database

## Transactional Database



Structured Database

## Unstructured Data Analytics

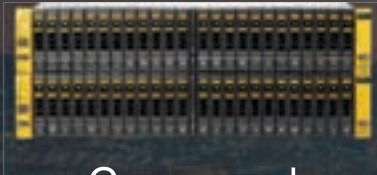


Hadoop++

## Mass Content Storage



Object Storage



Converged Systems + 3PAR Arrays



Nimble AF +  
Secondary Array



ProLiant Servers w/  
persistent memory



Apollo Density  
Optimized  
Servers

# Expanded unstructured file and object solutions

## through our strategic partnerships

### Qumulo Core

**Scale-Out NAS designed for multi-PB scale  
And effortless support for of tens of billions of files.**

- Optimized for metadata-heavy mixed workloads
- Flash-first hybrid design optimizes speed and cost
- Real-time visibility and control at scale



### Scality Ring v7 & CTERA

**Private cloud file and object storage for active archives, sync & share, and long-term retention**

- Futureproof across interfaces and server platforms
- Self-healing with up to 14-nines availability
- Integrated support model across HPE and Scality



# The right file solution by workload



Diverse **user generated** and **small-scale** application data



## StoreEasy, File Controller

5 TB – 300 TB  
sweet spot

Affordable general purpose entry NAS appliances and scale-up gateways with sophisticated data services in Microsoft environments



Diverse **user generated** and **block-adjacent** application data



## 3PAR with File Persona

2 TB – 400 TB  
sweet spot

Flash optimized unified block and file storage with highly flexible configurability and rich data compaction technologies



Large-scale, **hot and warm** machine and **application** data



## Apollo 4200 with Qumulo Core<sup>1</sup>

200 TB – 5 PB  
sweet spot

Modern scale-out NAS with advanced block-level erasure coding and up-to-the minute analytics for actionable data management



Extreme-scale, **warm to cool** machine and **application** data



## Scalable Object Storage with Scality RING

1 PB – 100s of PB  
sweet spot

Extremely scalable native file & S3 interfaces with sophisticated data availability and durability schemas for single to geo dispersed multisite

5

Location Agnostic Visibility.

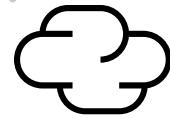


# HPE simplifies multi-cloud and on-premises environments



**Software as a service**

Simplifies all your public clouds



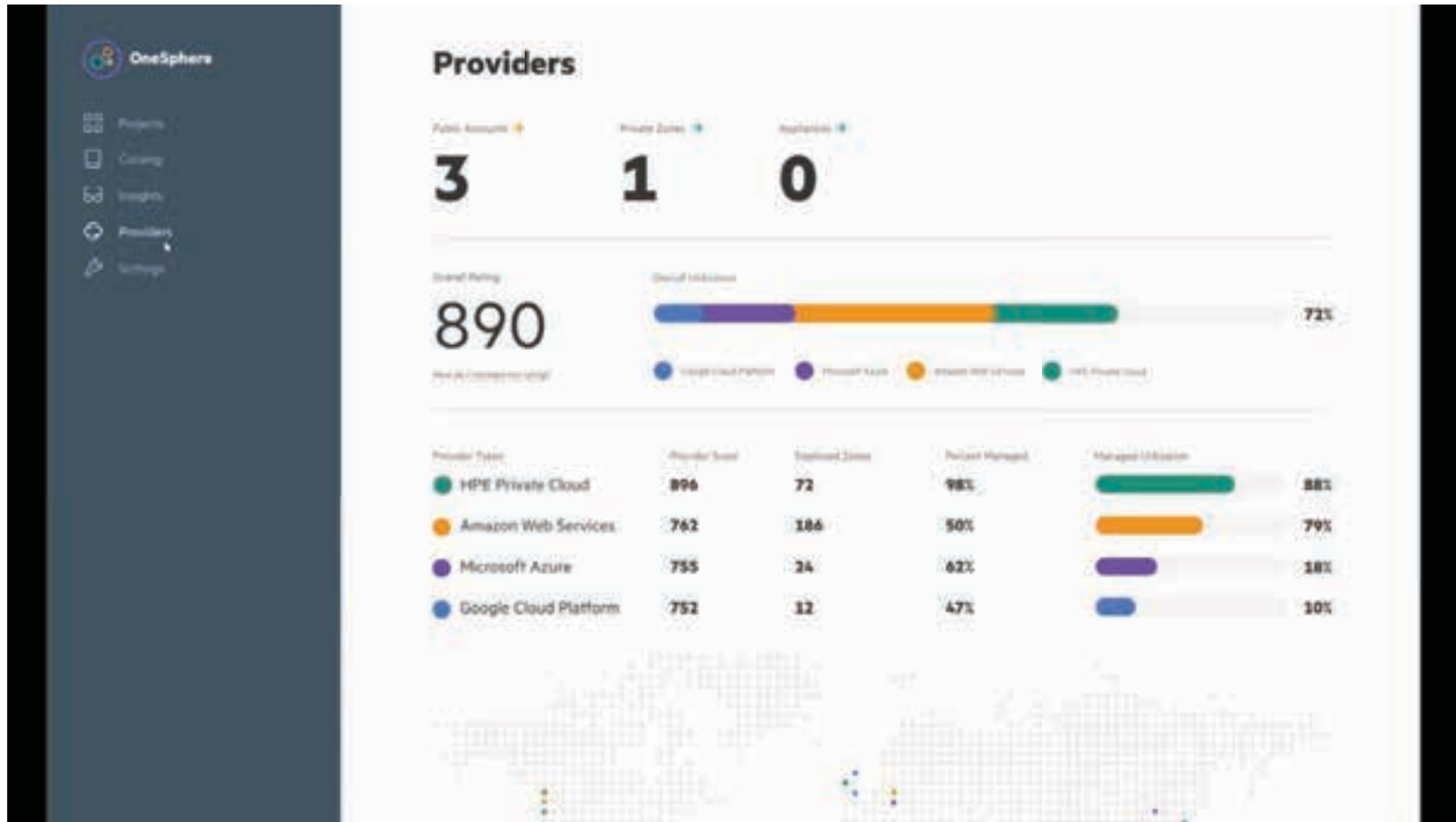
AWS Google  
Azure Cloud28+

Simplifies your on-premises



Private clouds, Azure Stack,  
VMs,  
containers and bare metal

# Private Cloud Providers



# Insights



A man in a dark suit and glasses stands in a modern office, looking out a large window at a city skyline at night. The office interior is dimly lit, with a modern chair visible on the left. The city lights are reflected in the window panes.

6

**Budgets don't keep pace with growth**



## Flexible

Pay as you go

On your terms

When you need it

## Future-Proof

Built-in data mobility  
and free tech refresh

A path to Storage Class  
Memory and NVMe

Proper Hybrid Control

Investments with **HPE GreenLake** are  
**timeless**



**Hewlett Packard**  
Enterprise

The industry's **broadest** and **deepest** flash portfolio

# HPE Storage Portfolio is complete



Synergy



MSA



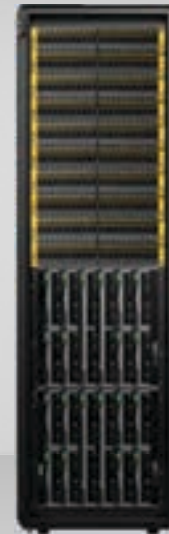
Simplivity



Nimble



StoreServ



Composable  
Storage



XP

We've got flash solutions for our  
**smallest** to our most **extreme** customers

**HPE MSA**

Affordable  
acceleration



**HPE XP7**

Extreme availability



# From **Hyper-Converged** to **Composable**

**HPE Composable Storage**  
3PAR Tier-1 for HPE Synergy

**HPE SimpliVity 380**  
Built for enterprise HCI



# And the most **advanced flash** portfolio to provide a **foundation for Hybrid IT**

vmware

Microsoft

openstack

docker

MESOSPHERE

ANSIBLE

CHEF

puppet

Jenkins

## Nimble Storage

Simple and predictive flash  
for new-style deployments



## HPE 3PAR StoreServ

Flexible tier-1 features for  
the all-flash datacenter



Proven **99.9999%** Availability

# The good news? We're recognized as the leader in key Hybrid IT segments

## Leader in Servers

### Magic Quadrant Modular Servers

Figure 1. Magic Quadrant for Modular Servers



Gartner

## Leader in Storage

### Magic Quadrant Solid State Arrays

Figure 4. Magic Quadrant for Solid State Arrays



Gartner

## Hyperconverged

### Wave Hyperconverged Infrastructure



FORRESTER

## Leader in Private

### Wave Private Cloud Software Suites



FORRESTER

**“HPE has done a great job building a product portfolio that’s more relevant to customers that are investing in private cloud and on the edge. The addition of CTP to the Pointnext portfolio makes them more relevant for customers that are migrating workloads to the cloud.”**

– Crawford Del Prete, IDC, 10 September 2017

# Gartner Magic Quadrants

## HPE named a leader in Solid-State and General-Purpose Disk Arrays

October 2017

for General-Purpose Disk Arrays

Figure 1. Magic Quadrant for General-Purpose Disk Arrays



July 2017

for Solid-State Arrays

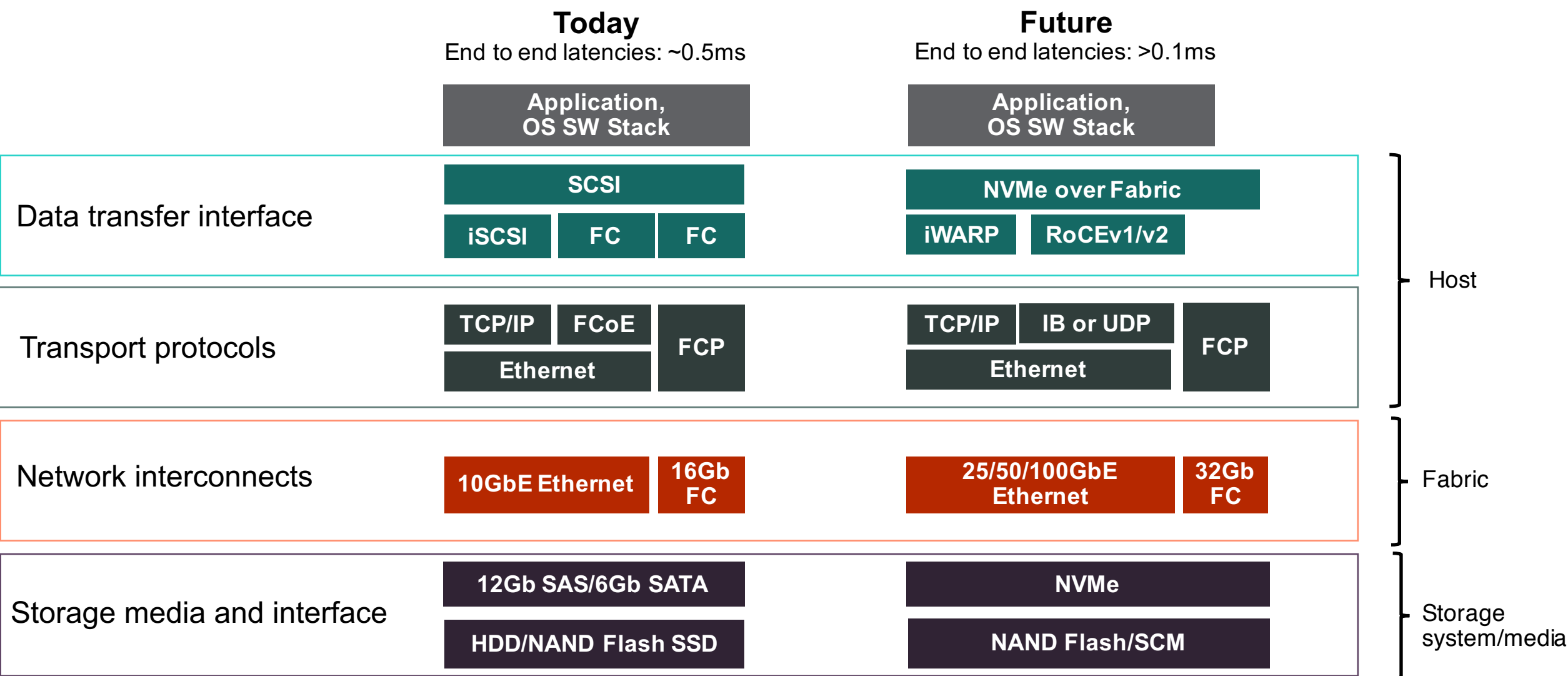
Figure 1. Magic Quadrant for Solid-State Arrays



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# The protocol stack of the future



# HPE point of view on NVMe

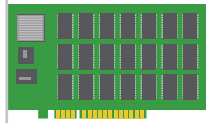
NVMe is one kind of storage interface for the SCM world and HPE is preparing for that transition (there's also NVDIMM, which is even faster)

- Phased adoption, starting with caching and progressing to full back end support with next gen systems

**First shipment of NVMe devices for 3PAR**

HPE 3PAR 3D  
Cache

NVMe + SCM (Intel  
3DXPoint) based  
caching



**NVMe backend**

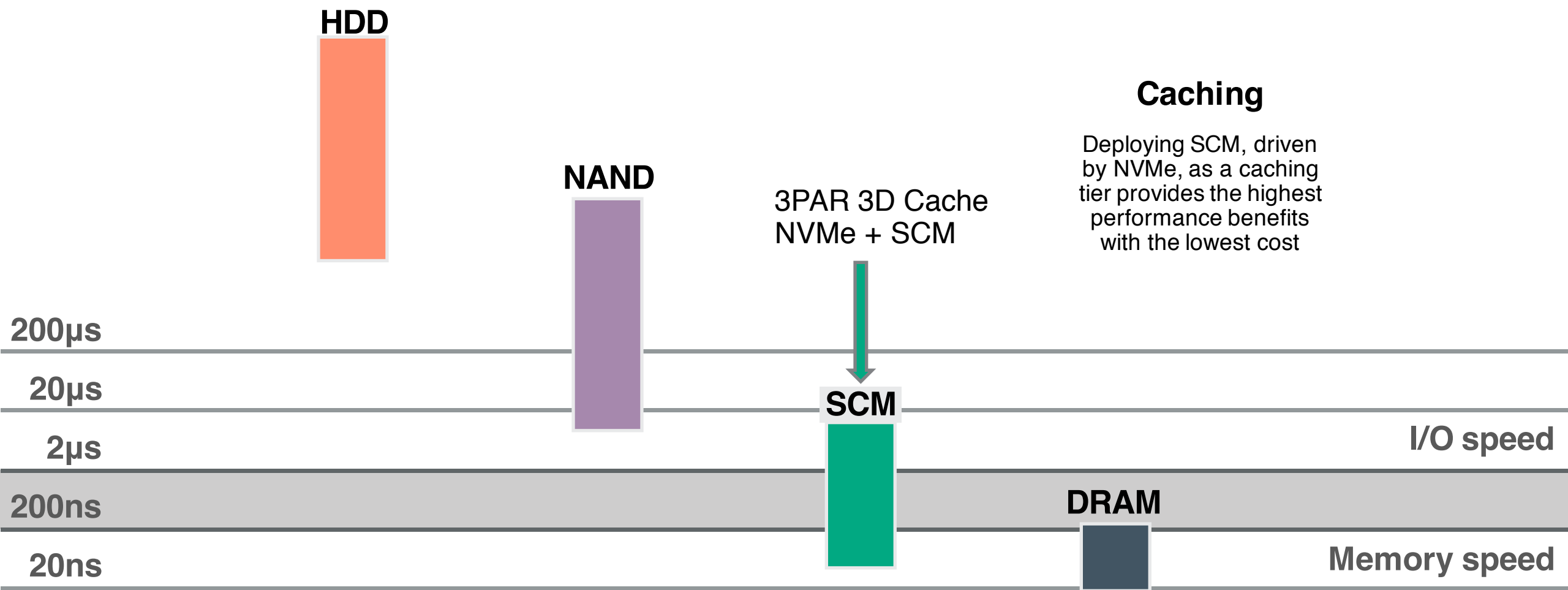
Next gen HPE systems will  
feature NVMe SSDs for  
storage and SCM for



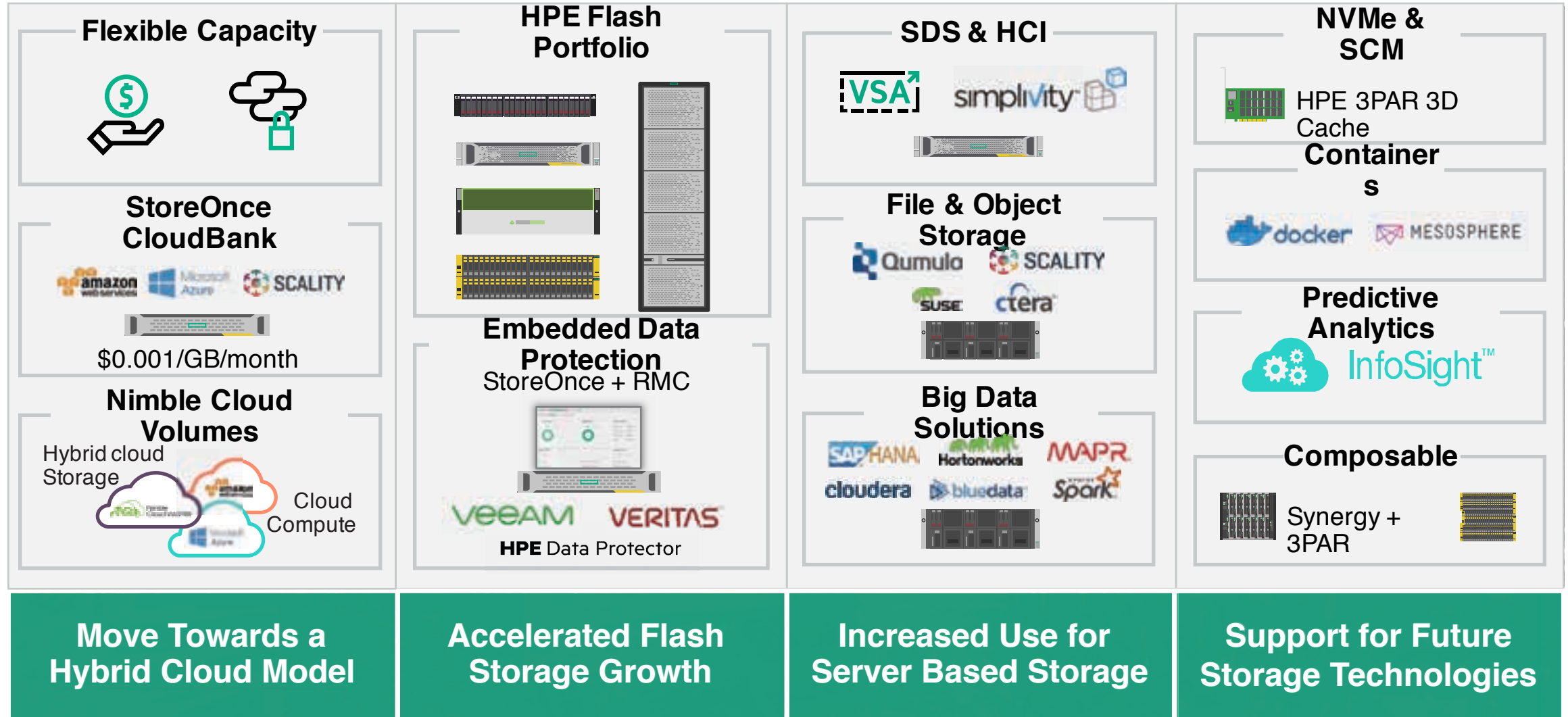
**NVMe over Fabric  
frontend**

**NVMe over Fabric  
backend**

# Storage Class Memory bridges the performance gap



# HPE is Addressing Major Market Trends



# NA Channel Strategy



## Make it Simple

- Medallion pricing launched January 2
- Single deal registration system for FY18
- Launch of SmartBuy Express
- Retained Nimble systems & processes

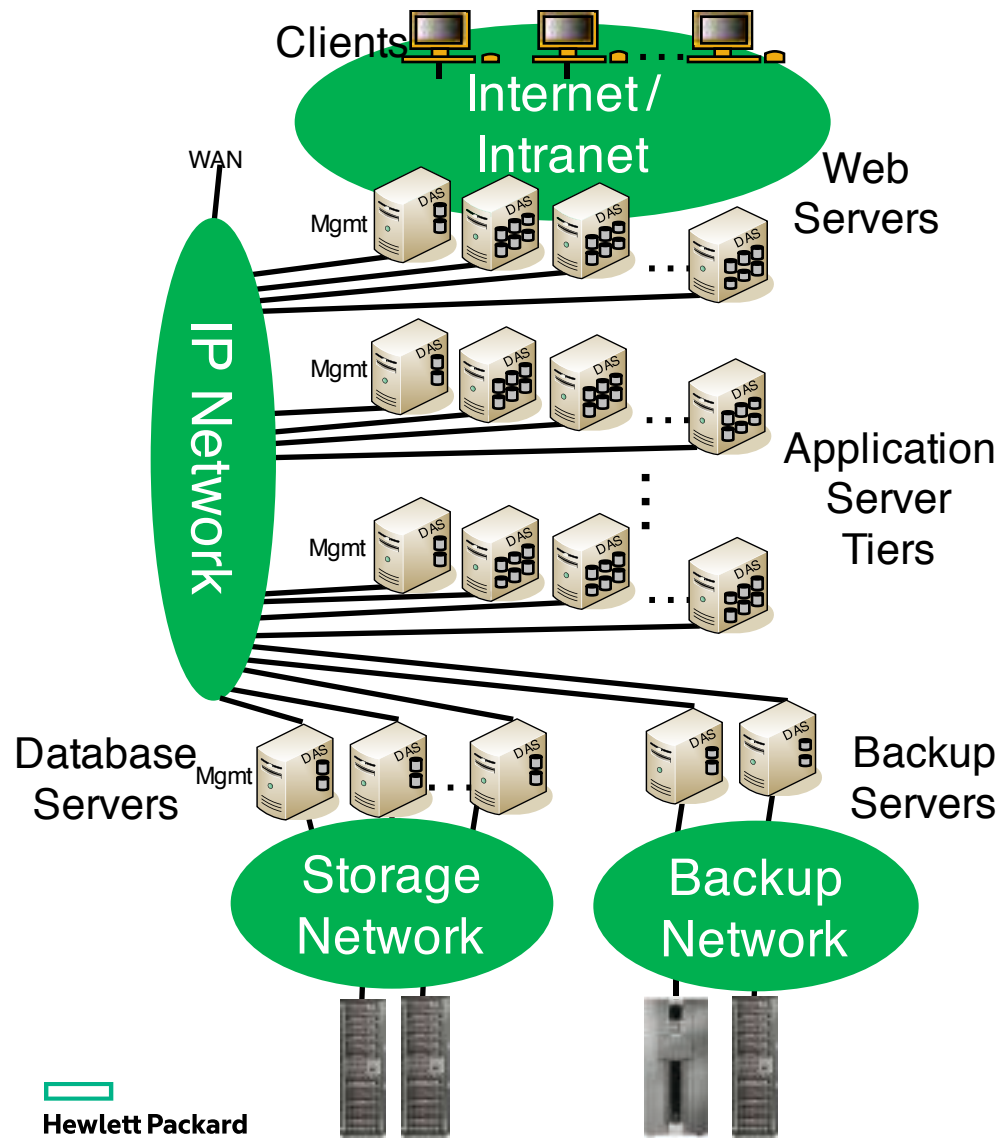
## Make it Predictable

- 100% Channel GTM commitment:
  - SimpliVity
  - Nimble
  - 3PAR midrange
- 100% Channel GTM commitment for new engagements:
  - Commercial
  - Mid-market
  - SLED
  - T3 Service Provider
  - SMB

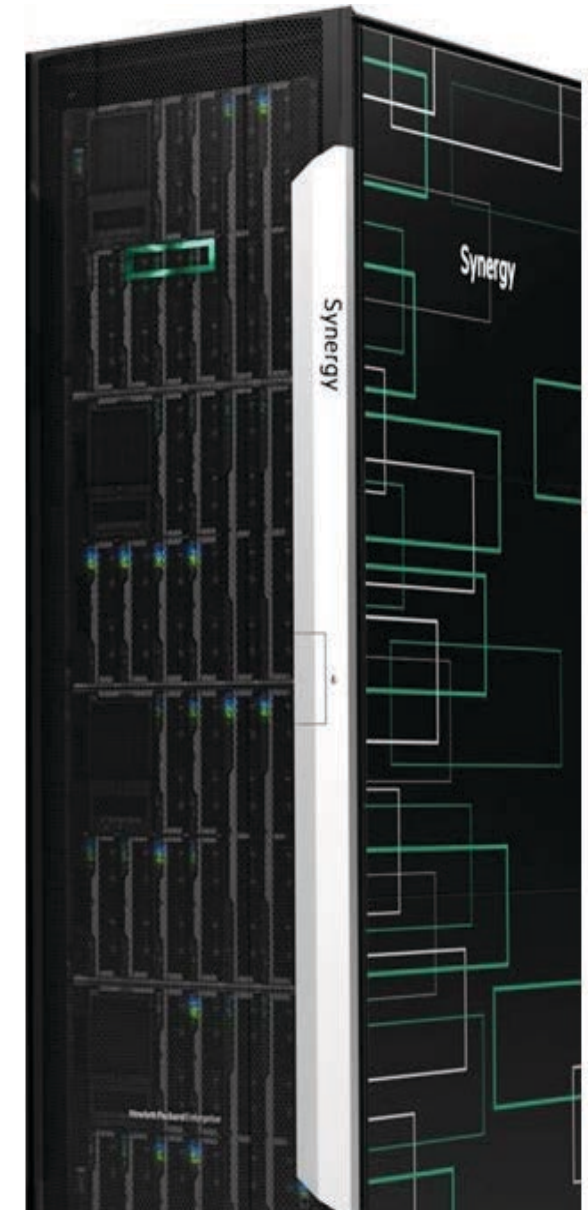
## Make it Profitable

- Industry leading Partner Ready program
- Q2 programs & SPIFs

# Traditional v. Composable – which do you prefer?



V  
S





**Hewlett Packard**  
Enterprise

**Thank You!**