HCI - SimpliVity

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Enterprise

Agenda
- Hybrid IT
- Why HPE SimpliVity
  - Management
  - Data efficiency
  - Resiliency and Reliability
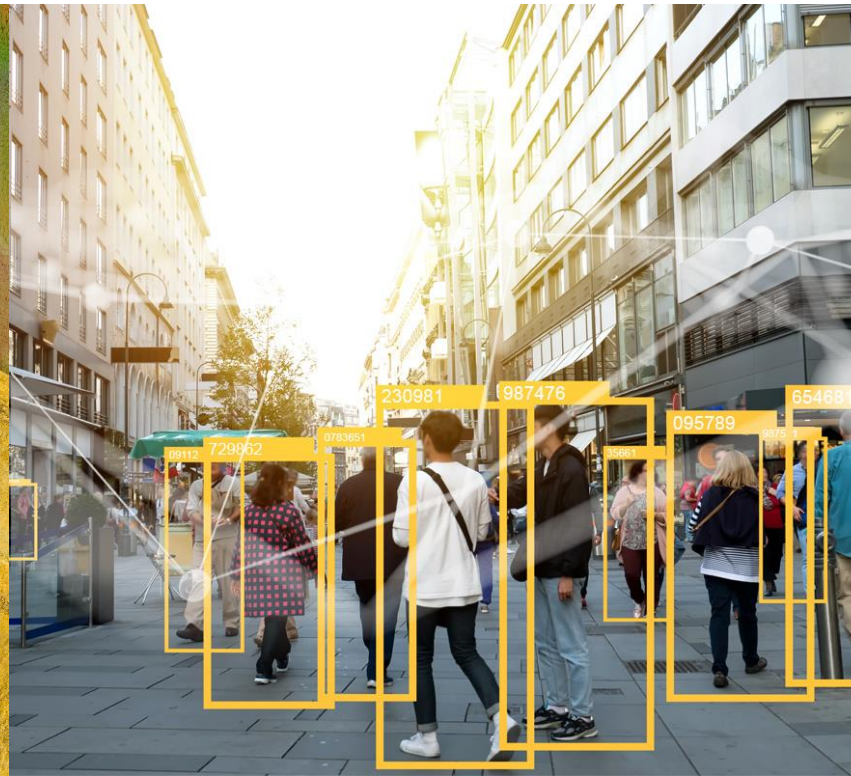 - Roadmap

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Hybrid IT

We live in a world where everything computes

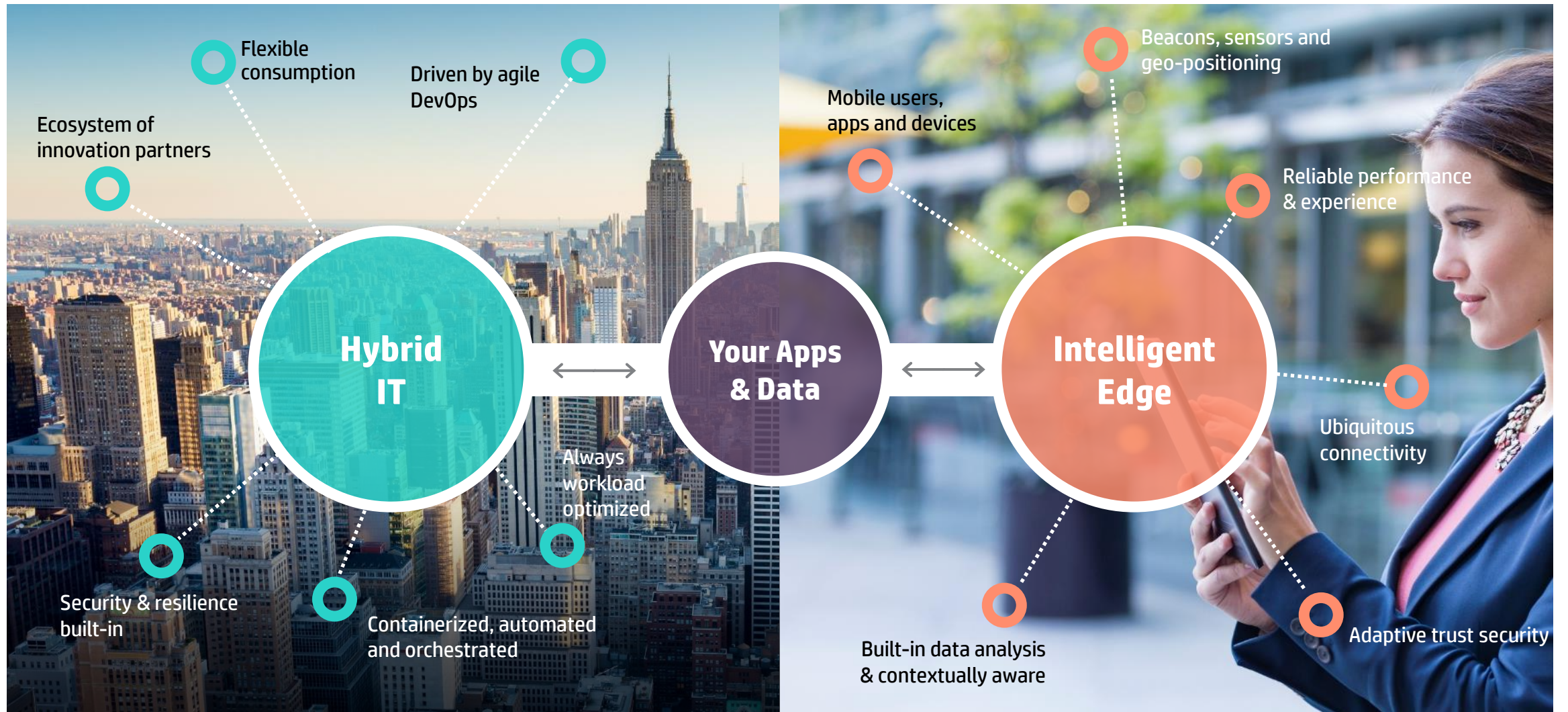Technology will be embedded everywhere

Everyone and everything will be connected – and learning

Everything will be understood

Accelerating time to value in a hybrid world is priority #1

Flexible consumption

Driven by agile DevOps

Ecosystem of innovation partners

Hybrid IT

Security & resilience built-in

Containerized, automated and orchestrated

Always workload optimized

Your Apps & Data

Mobile users, apps and devices

Beacons, sensors and geo-positioning

Reliable performance & experience

Intelligent Edge

Ubiquitous connectivity

Adaptive trust security

Built-in data analysis & contextually aware

HPE makes Hybrid IT simple with Software-Defined Infrastructure

Simplify virtual apps and data - accelerate app performance, speed business continuity,   lower costs and achieve an enterprise cloud in minutes

4.5X	**<1**	**69%**
Better application performance than traditional IT	Minute to backup and restore a 1TB VM – Guaranteed	Cost savings compared to traditional IT and up to 55% compared to public cloud

HPE Simplifies Applications and Data with HPE SimpliVity

Fast	Efficient	Multi-Cloud

Innovative VM-centric management and mobility speed deployment and app performance to free IT to focus on their business

— **81% time** freed to focus on apps

— Effectively run **all virtualized workloads** - SQL Server, VDI, Collaboration, DevOps, Docker

— **50%+ app performance** improvement

Built-in enterprise data services protect your data, speed business continuity and increase storage efficiency – guaranteed!

— **Under 1 minute** to backup or restore a 1 TB VM

— **Save 90%** capacity across storage and backup combined

— **Reduce costs** by 69%*

Transform your VM environment into an enterprise cloud that delivers cloud-like speed, operations and economics across all your clouds.

— Build clouds and deploy apps in minutes with **a few clicks**
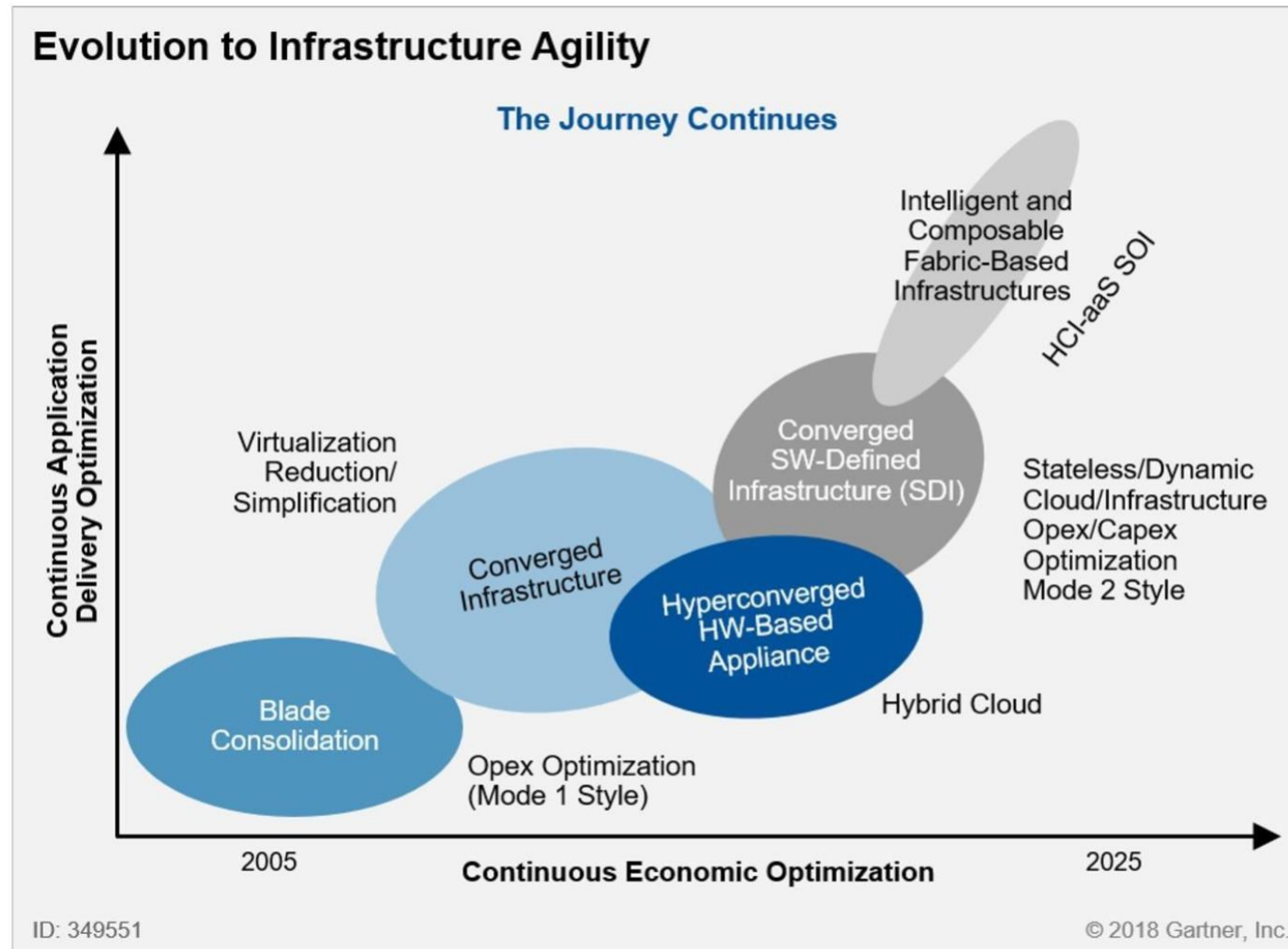
— **Any cloud** Google, AWS, Azure, Cloud 28+

* HPE SimpliVity versus legacy IT

Hyper Converged Infrastructure (HCI)

HPE SimpLivity 380
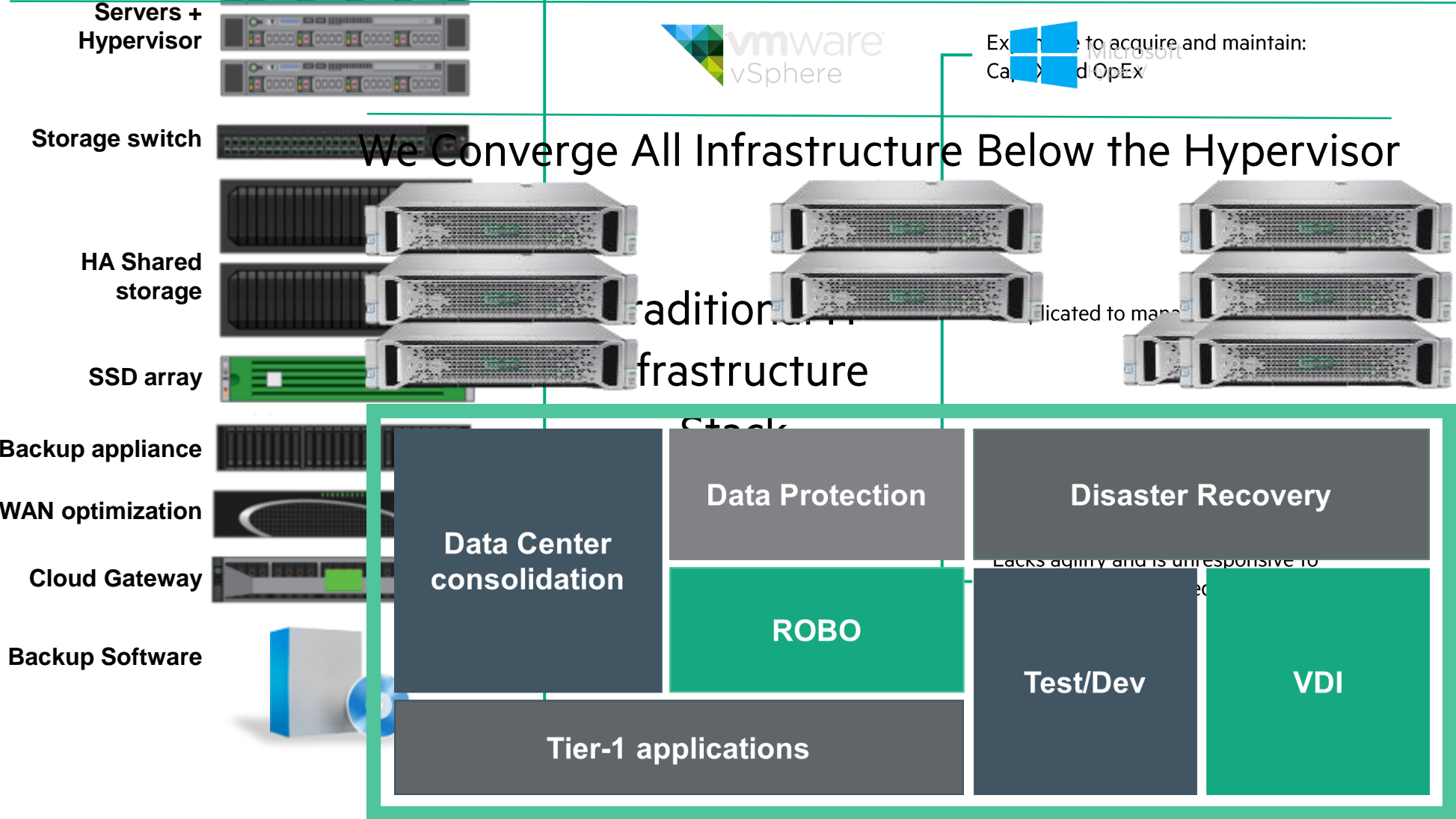
Evolution of Infrastructure

Evolution to Infrastructure Agility

The Journey Continues

Continuous Application Delivery Optimization

Intelligent and Composable Fabric-Based Infrastructures

HCl-aaS SOI

Virtualization Reduction/ Simplification

Converged SW-Defined Infrastructure (SDI)

Stateless/Dynamic Cloud/Infrastructure Opex/Capex Optimization Mode 2 Style

Converged Infrastructure

Hyperconverged HW-Based Appliance

Blade Consolidation

Hybrid Cloud

Opex Optimization (Mode 1 Style)

2005

Continuous Economic Optimization

2025

ID: 349551

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Source: Gartner (January 2018)

Hyper Converged Infrastructure vs Traditional Infrastructure

Simplifying IT with HPE SimpliVity

Servers + Hypervisor

Storage switch

HA Shared storage

SSD array

Backup appliance

WAN optimization

Cloud Gateway

Backup Software

Challenges

Expensive to acquire and maintain: CapEx and OpEx

We Converge All Infrastructure Below the Hypervisor

Traditional IT Infrastructure Stack

Complicated to manage

Lacks agility and is unresponsive to

Data Center consolidation	Data Protection	Disaster Recovery
	ROBO	Test/Dev	VDI
Tier-1 applications		

HPE SimpLivity 380

- Simple Management

HPE SimpliVity Data Virtualization Platform
A modern data architecture

Global VM-Centric Management and Mobility

Built-in Resiliency, Backup, and Disaster Recovery
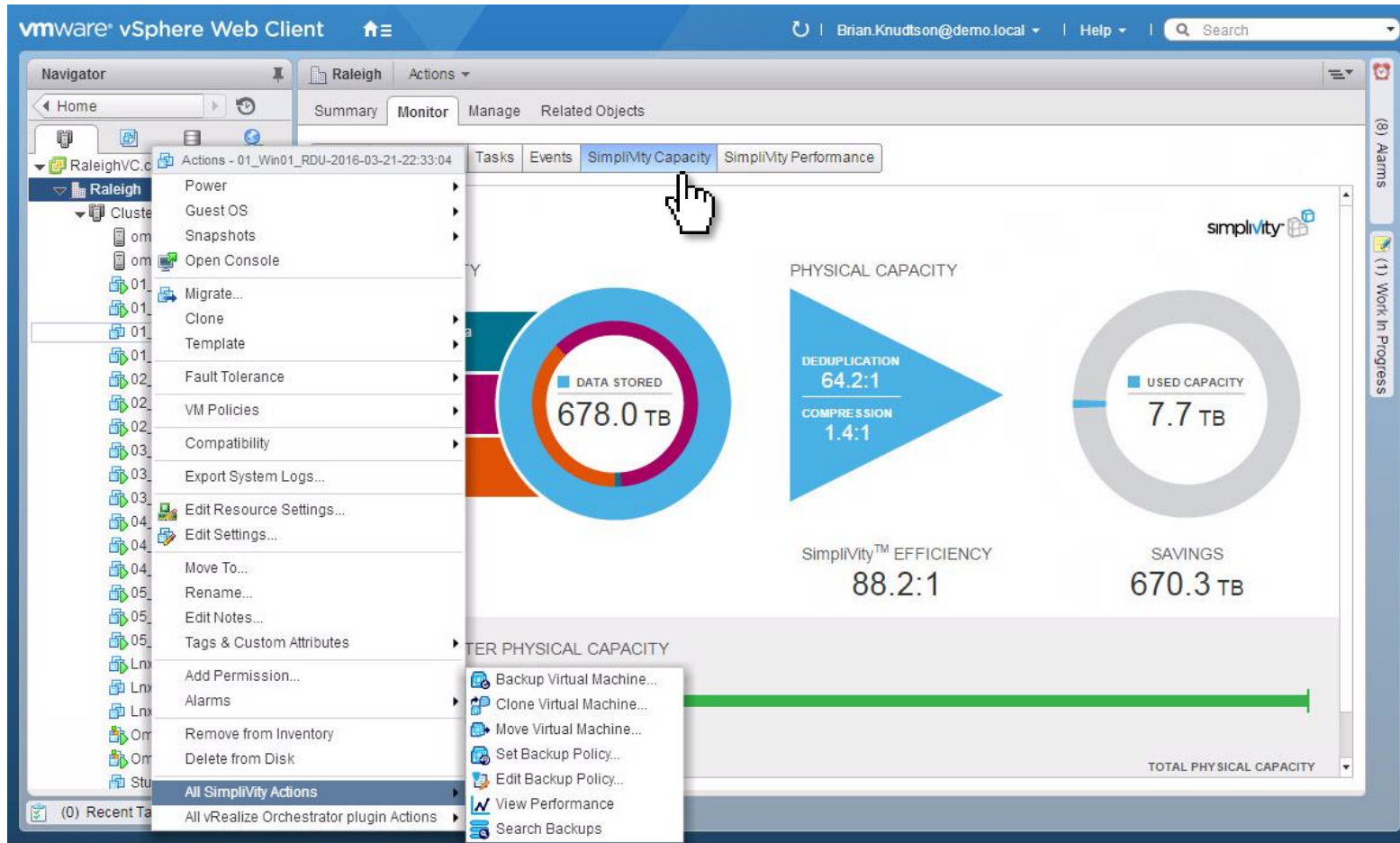
Guaranteed Data Efficiency

HPE SimpliVity Data Virtualization Platform
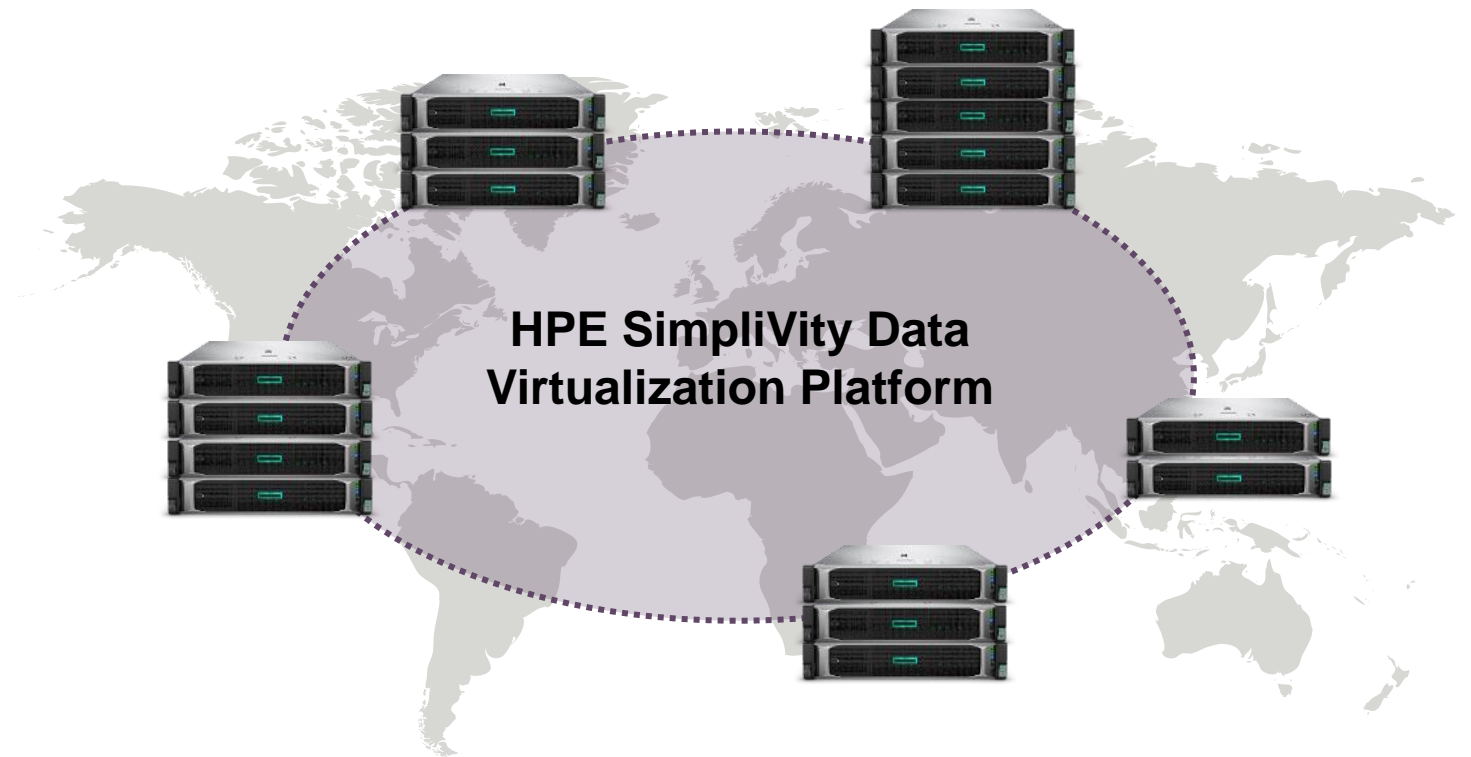
– Manage resources in a federated pool

– Seamlessly move data across sites

– Eliminate islands

13

Global Unified Management from Single Pane of Glass: VMware vCenter
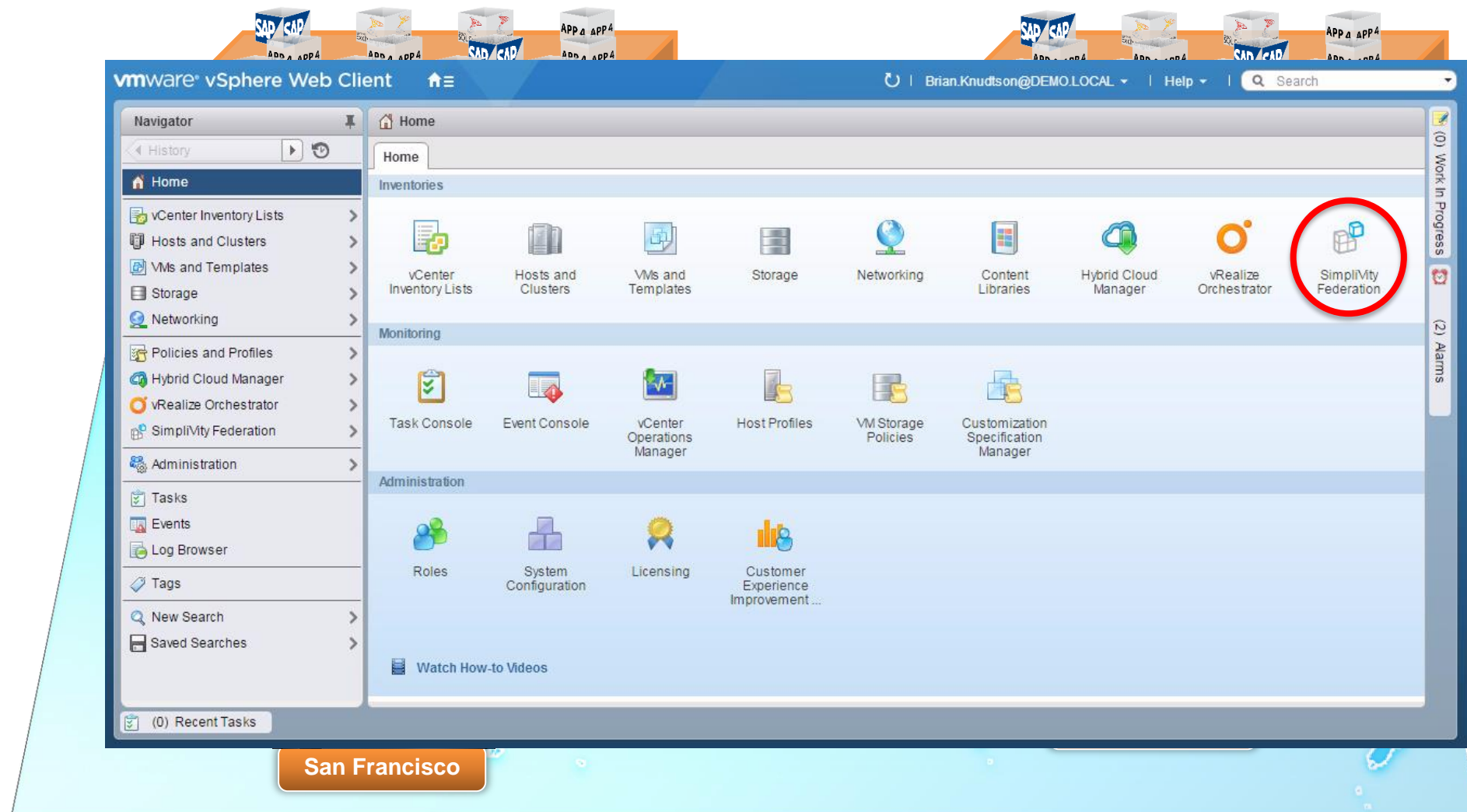
VM-Centricity of All Operations for IT

Alignment of Data to VMs – Single Pane of Glass

- Solve the IO and data mobility challenge by only transferring unique data globally at VM-level granularity
- VM centricity of all operations
  - Backup
  - Clone
  - Move
  - Restore

- Easy to create workflows for protecting, restoring, creating multiple production dev/test copies, and recovering to disaster recovery site

SSD Life Healthy in Simplivity

Increase admin speed and productivity

Global VM-centric management and mobility

- Policy-based, VM-centric management

- No LUNS, shares, or volumes

- Right-click operations

- Native tool integration

- Single view of all data centers and ROBOs

- Ability to rapidly move apps and data across sites
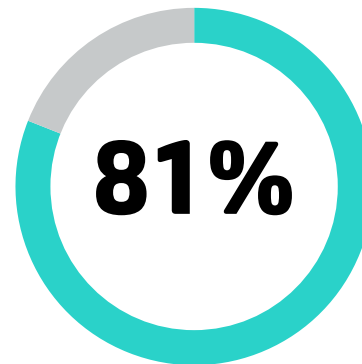
81% **increase** in time available to focus on apps and new projects

IDC
Analyze the Future

HPE SimpLivity 380

- Data efficiency

OmniStack Accelerator Card (OAC)

1. PCI express card, purpose built by HPE SimpliVity

2. Offloads data optimization from CPU

3. FPGA optimized for dedupe/compression operations
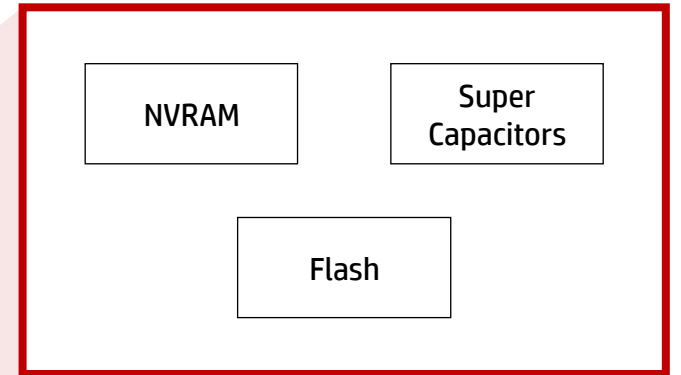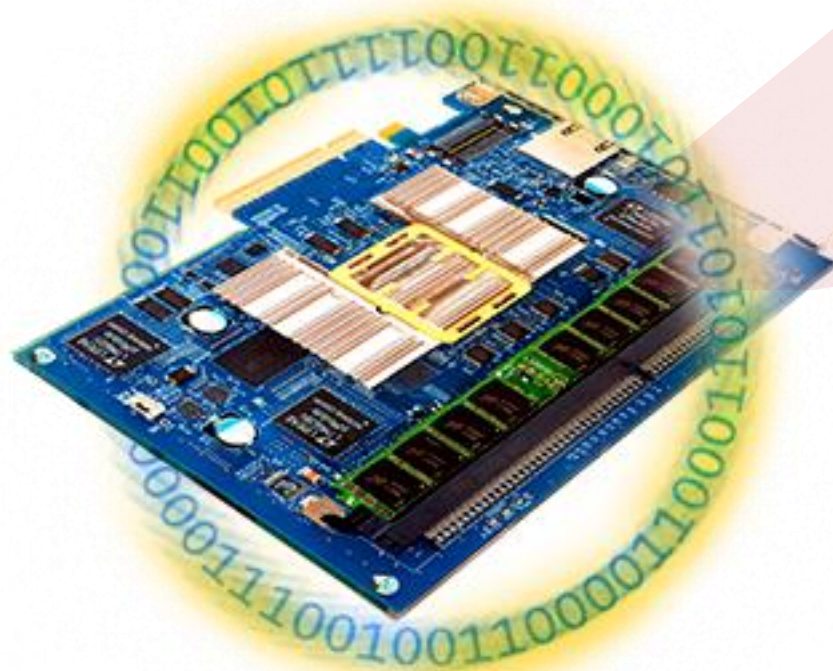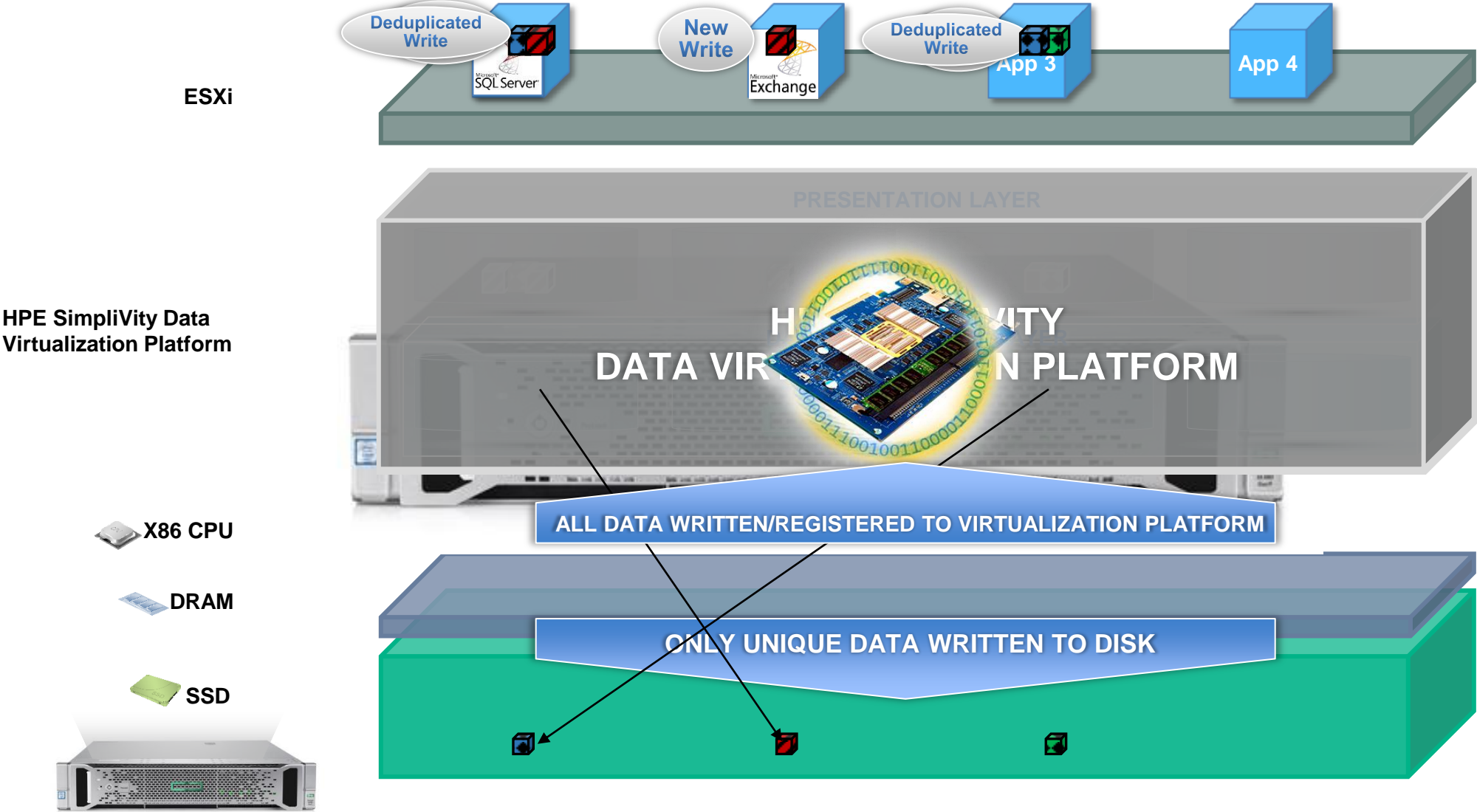
NVRAM	Super Capacitors
Flash	

HPE SimpliVity's Data Virtualization Platform

ESXi

Deduplicated Write — SQL Server

New Write — Exchange

Deduplicated Write — App 3

App 4

HPE SimpliVity Data Virtualization Platform

PRESENTATION LAYER

HPE SIMPLIVITY
DATA VIRTUALIZATION PLATFORM

ALL DATA WRITTEN/REGISTERED TO VIRTUALIZATION PLATFORM

X86 CPU

DRAM

SSD

ONLY UNIQUE DATA WRITTEN TO DISK

"The best IO is the one you don't have to do."

HPE SimpliVity's Data Virtualization Platform

ESXi

App 3

App 4

HPE SimpliVity Data Virtualization Platform

PRESENTATION LAYER

DATA MANAGEMENT LAYER

X86 CPU

DRAM

SSD

"The best IO is the one you don't have to do."

HPE SimpliVity's Data Virtualization Platform

ESXi

HPE SimpliVity Data Virtualization Platform

PRESENTATION LAYER

DATA MANAGEMENT LAYER

X86 CPU

DRAM

SSD
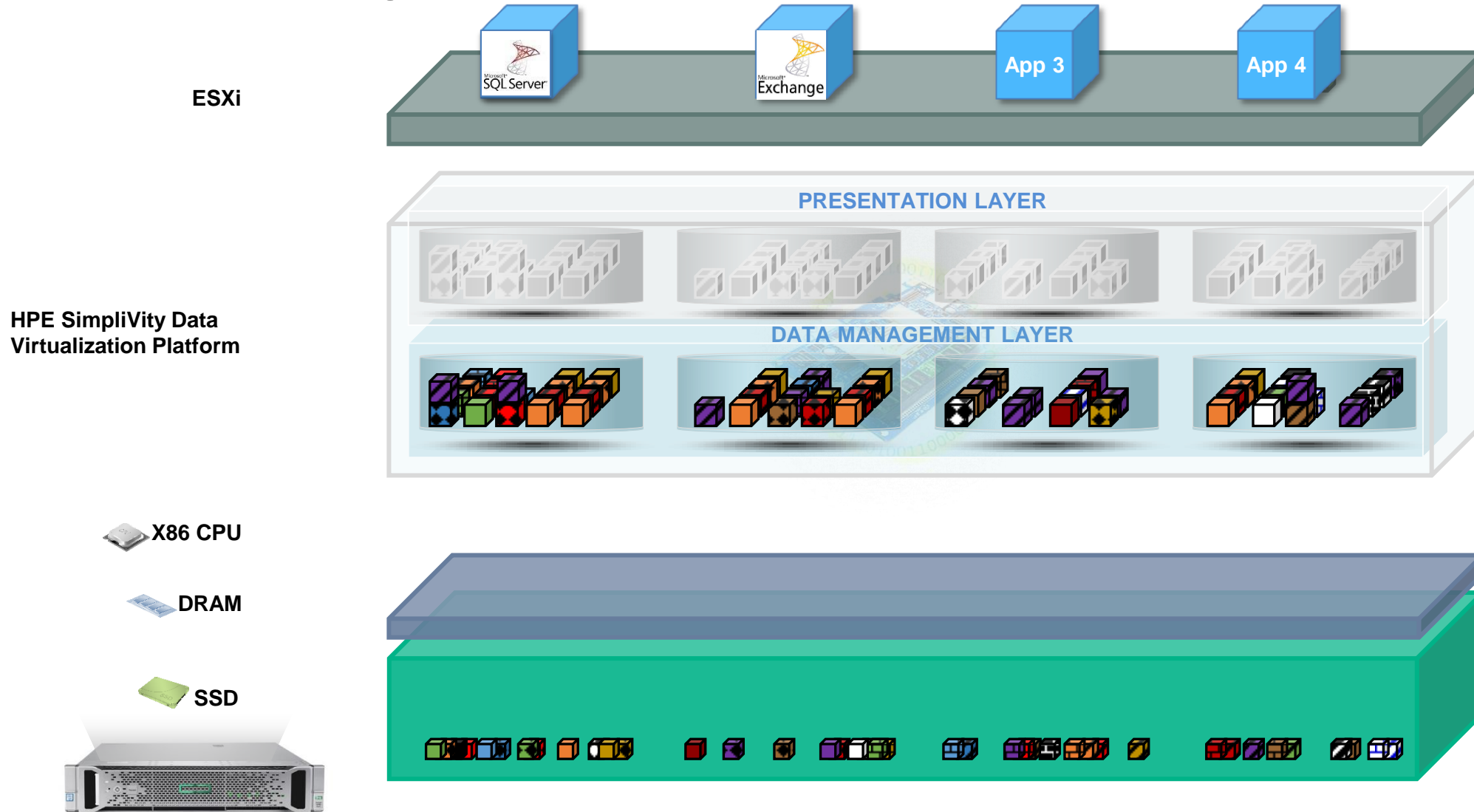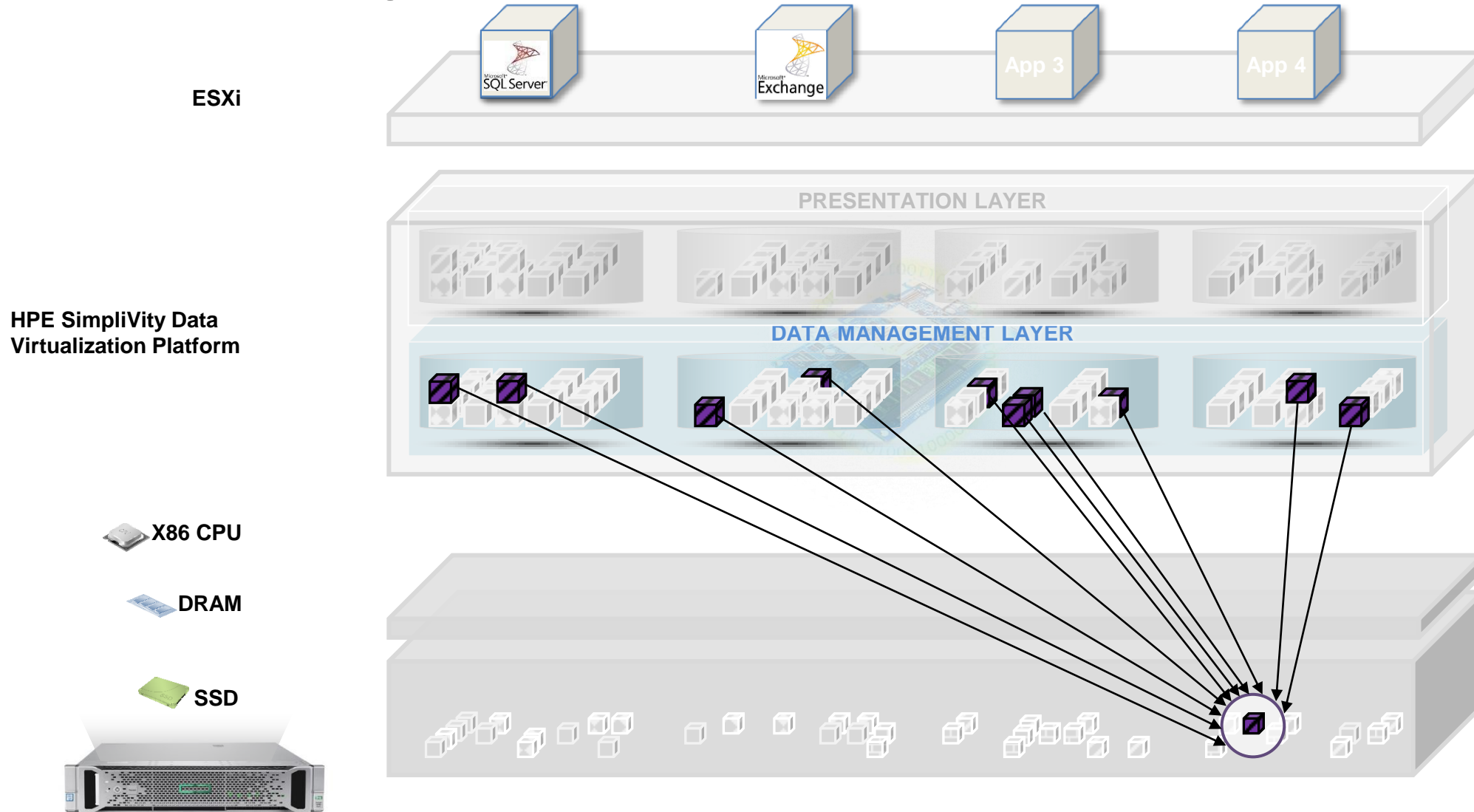
"The best IO is the one you don't have to do."

Data efficiency improves capacity, speeds recovery

Guaranteed data efficiency

– Always-on deduplication and compression

– All data at inception, globally

– Offloaded to OmniStack Accelerator Card

– Frees CPUs to run business workloads

52:1

Customers average **52:1 efficiency**
> 1/3rd surveyed achieve over 100:1[1]

FORRESTER®

TechValidate™

Save 90%
capacity across storage and backup combined[2]

[1] Reported in Forrester Total Economic Impact Study, 2017; TechValidate survey data

[2] HPE SimpliVity HyperGuarantee applies to current HPE SimpliVity and HPE OmniStack products and the new HPE SimpliVity 380 product.

HPE SimpLivity 380

- Resiliency and Reliability

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Scale-Out and Open Architecture
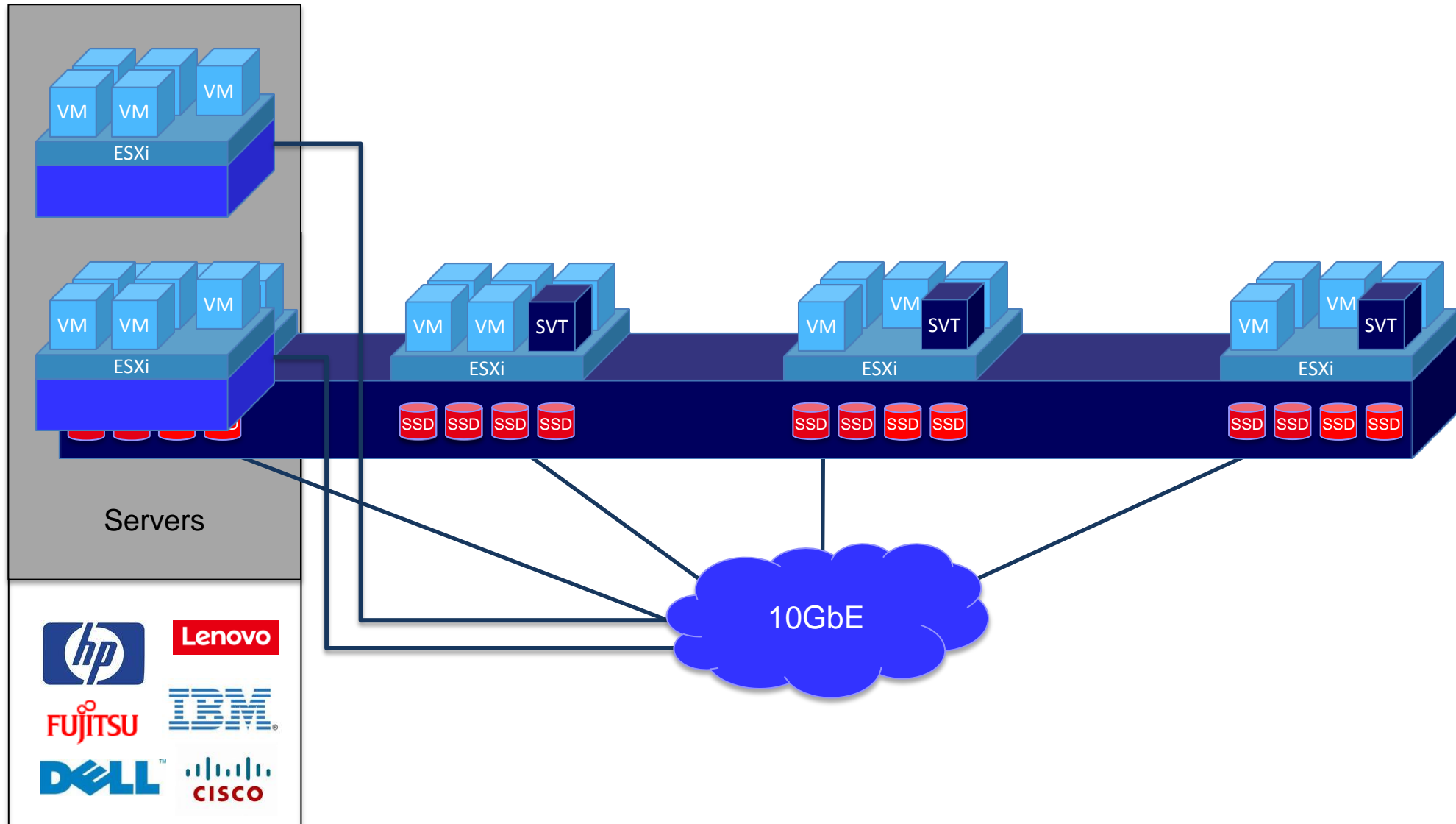
Global VM-Centric Management and Mobility
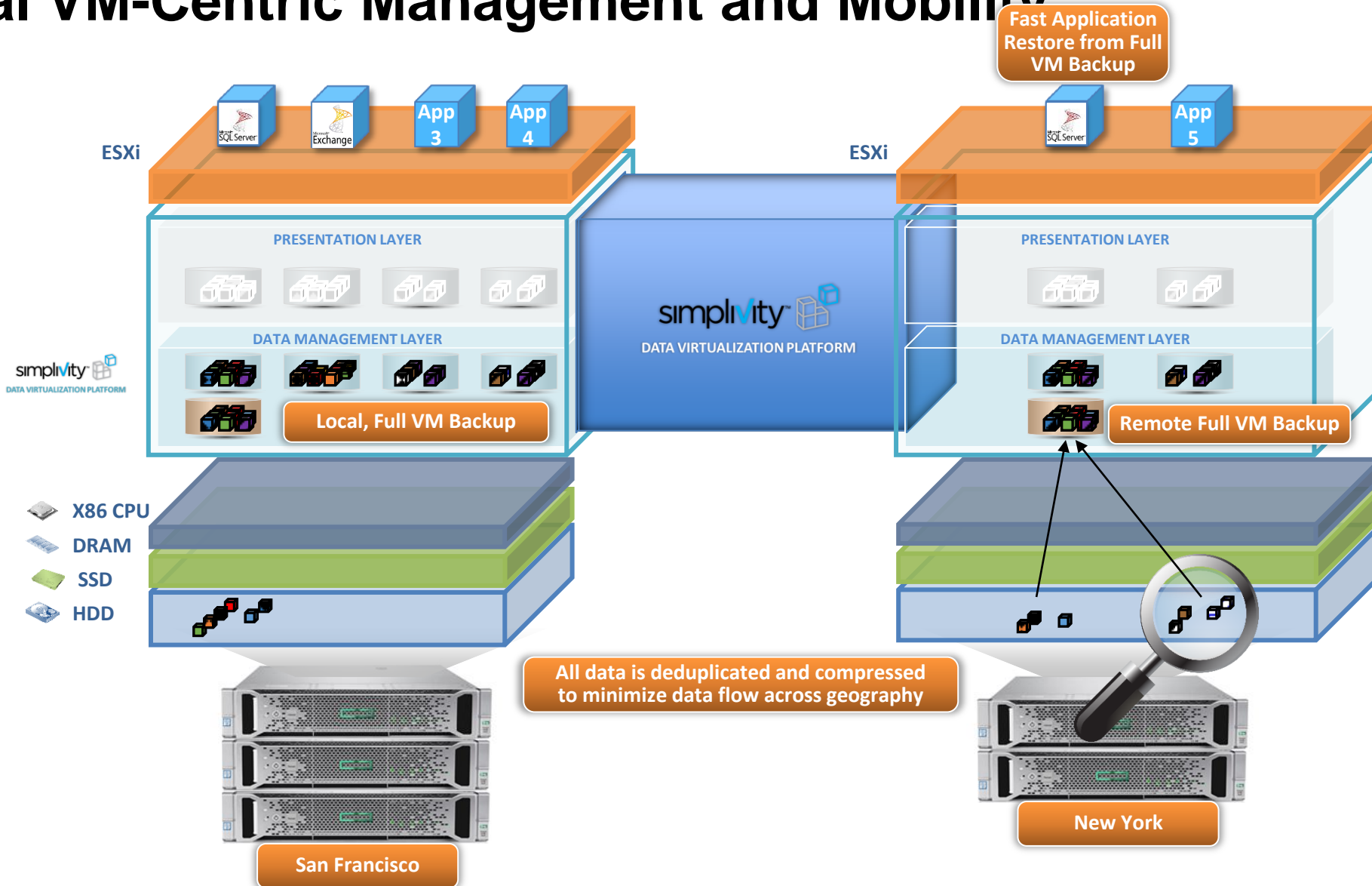
Maximize uptime and prevent data loss

File	VM	Node	Cluster	Federation

File

▼ 📁 My Documents
　　📄 desktop.ini
　▶ 📁 My Music
　▶ 📁 My Pictures
　▶ 📁 My Videos

– File level restore
– Multiple points in time
– Restore to any VM

VM

VM

– New or replacement VM
– Multiple points in time
– Fully independent

Node

– Hardware RAID
– Component-level redundancy and protection
– Integrity checks and bit rot detection

Cluster

– Per VM RAIN
– High availability

Federation

– Site-to-site DR
– Remote backup and recovery
– Unique block replication

Efficiency gains from built-in resiliency, back-up and disaster recovery

Built-in resiliency, backup, and disaster recovery

- Full, logical backups with near-zero overhead

- Granular RTOs and RPOs from hours to minutes

- Policy-based automation for backups and retention

- Simple, affordable offsite DR

- RAIN and RAID for superior built-in resiliency

70%

improvement in backup/recovery and DR reported by HPE SimpliVity customers (IDC)[1]

57%

of HPE SimpliVity customers **reduced recovery times** from days or hours to minutes (TechValidate)[2]

IDC — Analyze the Future

TechValidate™

<1 Minute to backup or restore a 1 TB VM

[1]IDC white paper, "HPE SimpliVity Hyperconvergence Drives Operational Efficiency and Customers are Benefiting," June 2017
[2]2017 TechValidate survey of HPE SimpliVity infrastructure customers

Built-in backup and disaster recovery reduces costs and risk

+ third-party backup for operational recovery

veeAM   DELLEMC DATA DOMAIN   DELLEMC AVAMAR

COMMVAULT   VERITAS

+ replication and disaster recovery automation

vmware Site Recovery Manager   Zerto
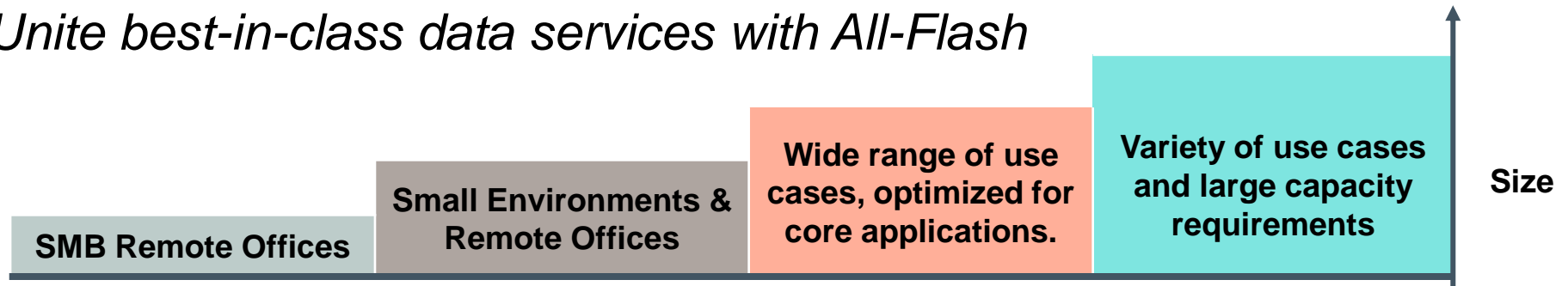
+ WAN optimization

riverbed

OR

HPE SimpliVity

HPE SimpLivity 380

- Roadmap

Hewlett Packard
Enterprise

HPE SimpliVity 380: Most powerful hyperconverged All-Flash portfolio

Unite best-in-class data services with All-Flash

Size

SMB Remote Offices	Small Environments & Remote Offices	Wide range of use cases, optimized for core applications.	Variety of use cases and large capacity requirements

	Extra Small	Small	Medium	Large
CPU	Latest Intel Xeon Scalable Processor Family spanning single, dual socket and multi-cores			
Memory	HPE Smart Memory DDR4 spanning various configurations up to 1436 GB			
Effective Capacity	3 – 6 TB	6 – 12 TB	12 - 25 TB	20 - 40 TB
Storage Configurations*	5 x 960 GB SSD RAID-5	5 x 1.92 TB SSD RAID-5	9 x 1.92 TB SSD RAID-6	12 x 1.92 TB SSD RAID-6
New Common Options	GPU Accelerator for VDI, End User Computing Data at Rest Encryption for Data Privacy RapidDR for DR automation FlexCapacity consumption options			
Common Features	Accelerated Inline Dedupe/Compression, High Availability, Redundant Power, VM-centric Policy-based Backup/Recovery/DR, Replication, VM Mobility, Integrated Management via hypervisor (VMware, MSFT SCVMM)			

* Available in two versions, 6000-series and 4000-series
  6000-series is best for high performance, IO intensive mixed workloads
  4000-series is best for typical workloads (heavy reads/lower ratio of writes)
  at lower cost than the 6000-series.

HPE Hyperconverged Platform Roadmap

Heritage ········· **Current** ········· **Next** ········· **Futures**

SimpliVity
OmniCube
Cisco, Dell, Lenovo

HPE SimpliVity 380
Gen 9
All-Flash

HPE HC380
Gen 9
StoreVirtual VSA

HPE SimpliVity 380
Gen 10 (ESXi & Hyper-V)
All-Flash Series 4000 and 6000
Composable Fabric

HPE SimpliVity 380
Gen 10 Snap 1 (ESXi & Hyper-V)
All-Flash Series 4000 and 6000
Hybrid Series
Composable Fabric

HPE HC250
for VMware
Gen 9
StoreVirtual VSA

HPE SimpliVity 2600
Gen 10 (ESXi)
All-Flash Series 4000
Composable Fabric

HPE SimpliVity 325
AMD (ESXi), All Flash Series

HPE SimpliVity
for Composable Cloud

HPE SimpliVity
for Synergy

Additional
Platforms

Public Cloud
Expansion

Notes: This is a rolling (up to three-year) Roadmap and is subject to change without notice.
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HPE Hyperconverged Software Roadmap

Current

Key Features

1. Comprehensive REST API
2. Stretch Cluster
3. Policy-based VM centric management
4. Integrated inline compression and deduplication
5. Built-in enterprise grade resiliency
6. Self service Deployment and Upgrade
7. Built-in data protection including app aware SQL backups
8. DR Automation with RapidDR
9. Multi Hypervisor (ESXi, Hyper-V)
10. Orchestrated HPE SimpliVity and Hypervisor Update
11. Increased Cluster (16 nodes) and Federation (96 nodes) Scale
12. HPE SimpliVity with Composable Fabric
13. Support for ESXi 6.7 U1
14. vCenter HTML5 Plugin
15. Parallel Deployment and Upgrade
16. Storage capacity and CPU expansion (HPE SimpliVity 380)

Next

Key Features

1. HPE InfoSight Integration
2. Orchestrated Firmware Update
3. VDI Instant Clone
4. Additional Hyper-V node sizes and deployment improvements
5. 4 nodes cluster and 16 node Federation for Hyper-V
6. Hyper-V Support for RapidDR
7. Air-gapped Backup (StoreOnce)
8. Role Based Access Control
9. Multi GPU Support
10. HPE SimpliVity Hybrid Nodes

Future

Key Features

1. Extended HPE Platform Support (Composable Cloud, Synergy, Edge, etc.)
2. Next Gen OmniStack Accelerator card
3. Larger Federation Scale
4. Unattended Upgrade
5. Multi Hypervisor Federation
6. Dynamic Resource Balancing across Hypervisors
7. NVMe Storage Options
8. OneSphere Support
9. Air-gapped backups to cloud
10. Public Cloud Integration
11. Additional Hypervisor Support (KVM)
12. Native container support on HPE SimpliVity
13. Additional Storage Protocols
    a. Persistent Container Storage
    b. Block Storage
    c. NAS
    d. Object Storage

Notes: This is a rolling (up to three-year) Roadmap and is subject to change without notice.

Summary

- SVT 特色:
  - 單一窗口, HPE 支援 SimpLivity HW, SW, VM OEM service
  - 單一界面, vCenter 管理多個 data center, 包含VM, HW
  - 高效率 Storage, All Flash
  - 提昇SSD價值/per G, 內建 in-line dedup, compression,
  - 資產活化, 可外接compute nodes/storage, 可擴充 CPU/RAM/HDD
  - 減少資料損失, 1分鐘內執行完整備份1TB VM，讓RPO<=1min
  - 內建備份/異地備援/本地雙活功能
  - 主要銷售對象:
  - 傳統架構
  - 中小企業
  - ROBO
  - SWD 替代方案
  - 機房空間有限

Thank you