



Hewlett Packard
Enterprise

HPE and Zerto: A Guide to Elastic Infrastructure, Clouds, and Disaster Recovery

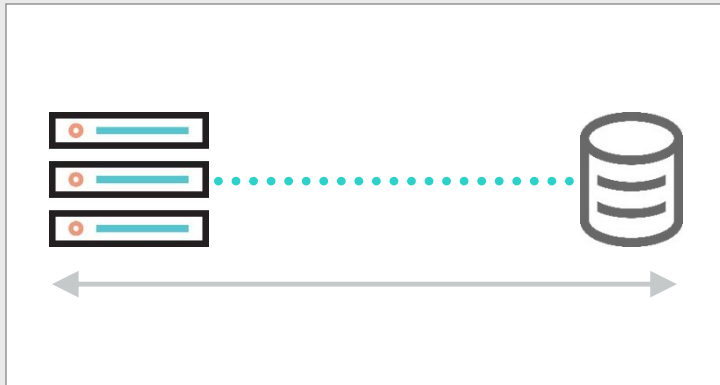
Rob Wilcox

May 21, 2019



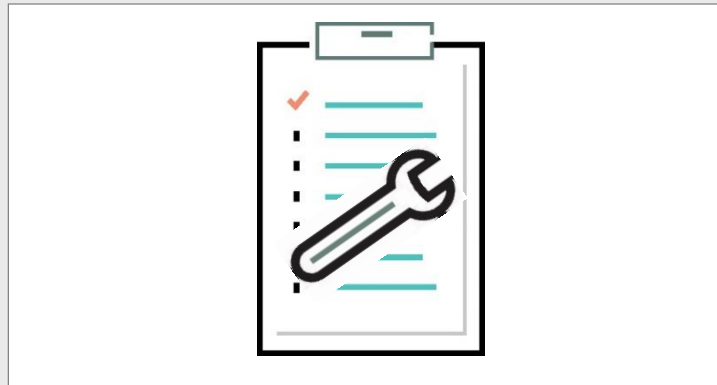
What is HPE Complete?

The HPE Complete program resells best-in-class third party branded products



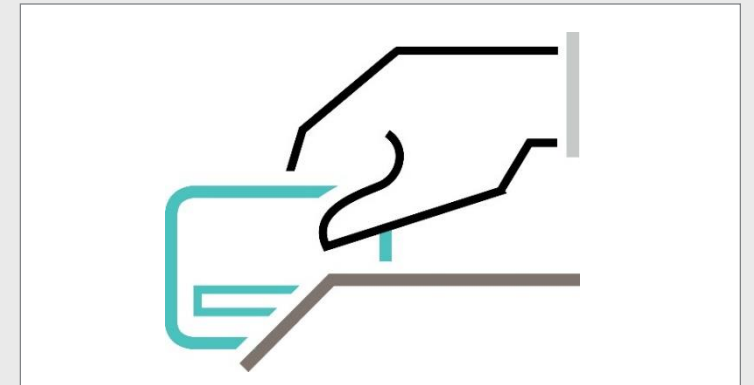
End-to-End Solutions

Minimize risk, complexity and cost of deploying 3rd party products and HPE technologies



Build with Confidence

HPE Complete Assured interoperability testing for solution validation



Multi-Vendor, Single Order

Purchase complete solutions via one HPE purchase order

HPE Complete Program: [Video](#) & [Website](#) & [Solution Brief](#)

HPE Complete Assured



Engineering Collaboration

Direct engineer-to-engineer collaboration

Joint test plan collaboration

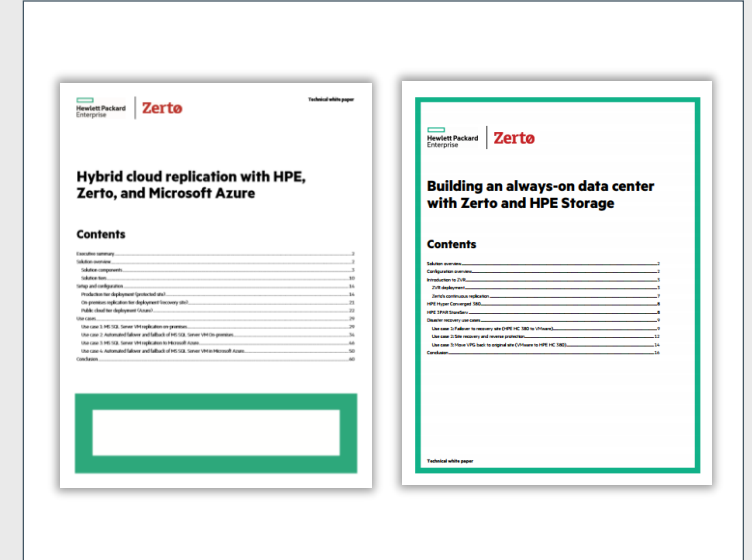
Issue triage and support



Testing and Support

Zerto tested and supported on a variety of HPE products

- HPE Nimble Storage
- HPE 3PAR StoreServ
- HPE ProLiant Servers
- More to come...



Development

Whitepaper development

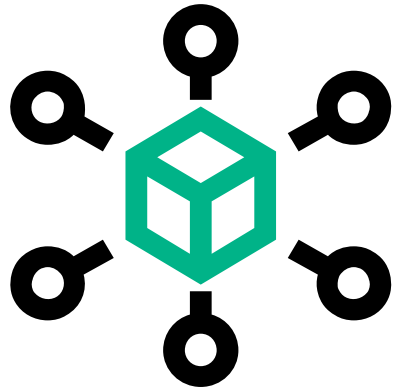
Training

HPE integration opportunities



Elastic Infrastructure, Clouds, and Disaster Recovery

Elastic Infrastructure, Clouds, and Disaster Recovery



Elastic Infrastructure

Zerto CDP with HPE compute, network, and storage

HPE Complete assurance

HPE and Zerto value-add integration

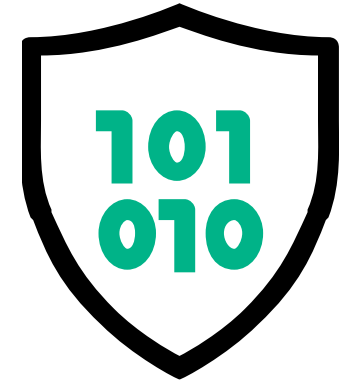


Elastic Clouds

Zerto and HPE cloud mobility

HPE Cloud Volumes

Zerto and HPE Analytics



Elastic Disaster Recovery

Zerto Long-Term Retention with CTERA Edge Filer

Hybrid cloud disaster recovery

Short-, medium-, and long-term retention

Elastic Infrastructure, Clouds, and Disaster Recovery

1

Elastic Infrastructure

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Elastic Clouds

3

Elastic Disaster Recovery

Elastic Infrastructure



Continuous Data Protection

Hypervisor-based replication

Journal-based point-in-time recovery

Change block tracking for greater granularity

One-to-many replication

Heterogeneous compute, network, and storage

Supported through HPE Complete

Simple sales and support

Test and validation

Documentation

Product integration

Elastic Infrastructure

Hybrid cloud replication with HPE, Zerto, and Microsoft Azure



Hybrid cloud replication with HPE MSA Storage, Zerto, and Microsoft Azure



Cutting-Edge Infrastructure

- HPE ProLiant Servers
- HPE Apollo Servers
- HPE M-Series Switches
- HPE MSA Storage
- HPE 3PAR Storage
- HPE Nimble Storage
- HPE Simplivity

Published Reference Architectures

[Hybrid cloud replication with HPE, Zerto, and Microsoft Azure](#)

[Hybrid cloud replication with HPE MSA Storage, Zerto, and Microsoft Azure](#)

Elastic Infrastructure

Coming soon to HPE Smart Fabric Orchestrator...

The screenshot displays the HPE Smart Fabric Orchestrator interface. On the left is a dark sidebar with navigation options: Dashboard, Managed Elements, Fabric Compliance, Self-Healing, Fabric Reports, Templates, Settings, and Activities. The main content area shows a 'Protected Server' configuration for 'c3-vm059.cxo.storage...'. A 'Software' table lists details for the server:

Property	Value
IP/Host	c3-vm059.storage.hpecorp.net
Version	6.0.31
Port	9669
Provider	Zerto/ZVR
Manufacturer	Zerto
Product	Zerto Virtual Replication
Role	Zerto Virtual Manager

Below the server details is an 'Activities' log with search and filter icons. It shows three events:

- ZERTO_ZVR c3-vm059.cxo.storage.hpecorp.net Host c3-dl380g9-198.cxo.storage.hpecorp.net has no VRA installed, and is part of cluster Zerto-Site1-ESX165-Cluster that contains hosts with installed VRAs. (Apr 26, 2019 7:34 am)
- ZERTO_ZVR c3-vm059.cxo.storage.hpecorp.net VM site2_vm3 is shut down and cannot be synced. (Apr 29, 2019 10:50 am)
- ZERTO_ZVR c3-vm059.cxo.storage.hpecorp.net ZVM Login. Success. (Apr 26, 2019 10:34 am)

On the right, a 'Notifications' panel shows a series of alerts:

- DEVICEMANAGER_ALERT: ADD MANAGED ELEMENT: HEDVIG_STORAGE - admin (Apr 29, 2019 3:18 pm)
- DEVICEMANAGER_ALERT: ZERTO_ZVR c3-vm059.cxo.storage.hpecorp.net ZVM Login. Success. (Apr 29, 2019 2:40 pm)
- DEVICEMANAGER_ALERT: ZERTO_ZVR c3-vm059.cxo.storage.hpecorp.net ZVM Login. Success. (Apr 29, 2019 2:40 pm)
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Smart Fabric Orchestrator (SFO)

Orchestrate multi-protocol fabrics E2E
Fabric configuration and validation
Health monitoring and self-healing
End-to-end view of fabric topology and devices


Zerto Plugin Integration

Uses Zerto REST API to gather

- Version information
- Alerts, Events, and Tasks
- Protected VMs
- Site information

Future “active management” capabilities on roadmap

Elastic Infrastructure



HPE 3PAR StoreServ Storage PowerShell Toolkit

HPE Nimble PowerShell Toolkit

HPE OA Cmdlets

HPE BIOS Cmdlets

HPE OneView for Microsoft System Center

HPE OneView for VMware vCenter

HPE 3PAR Info

HPE Nimble Storage Windows

HPE 3PAR Host Explorer

HPE OS Provisioning Cmdlets

HPE SysInfo Cmdlets

HPE Virtual Copy

HPE Smart Array Cmdlets

AzureRM PowerShell

HPE iLO Cmdlets

HPE Redfish PowerShell

HPE PowerShell Cmdlets

HPE NVDIMM PowerShell

HPE OneSphere PowerShell Cmdlets

**HPE Complete
Integration Pack for Windows**

HPE Migration Advisory Tool for HPE PowerShell Cmdlets

HPE OneView PowerShell Cmdlets

VMware PowerCLI Cmdlets

Integration Pack for Windows

Automation tools, software, and documentation
Tested and assured with Zerto

Integration Pack Add-on for Zerto

HPE Simplivity Enablement Script for Zerto
Zerto-specific documentation

Coming Soon...

HPE Complete Integration Pack for Linux

Elastic Infrastructure, Clouds, and Disaster Recovery

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Elastic Infrastructure

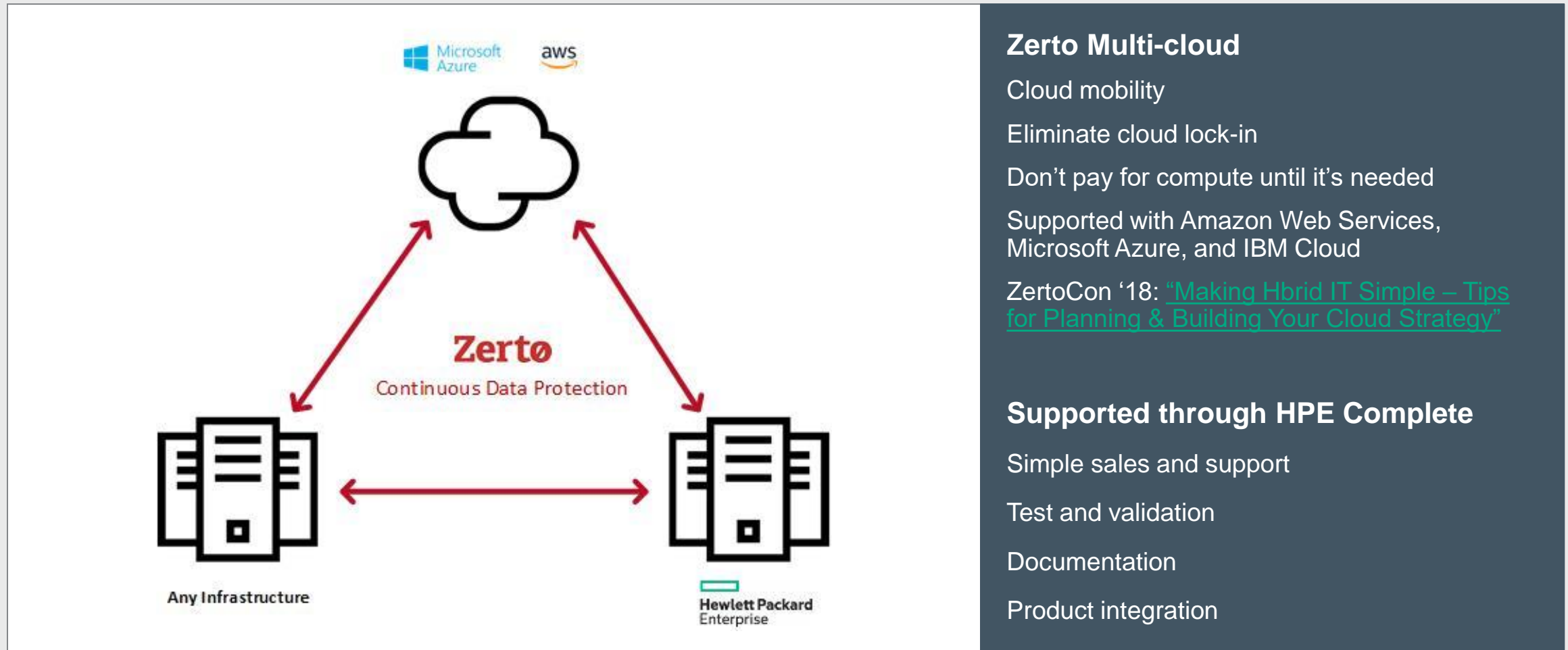
2

Elastic Clouds

3

Elastic Disaster Recovery

Elastic Clouds



Zerto Multi-cloud

Cloud mobility

Eliminate cloud lock-in

Don't pay for compute until it's needed

Supported with Amazon Web Services, Microsoft Azure, and IBM Cloud

ZertoCon '18: ["Making Hybrid IT Simple – Tips for Planning & Building Your Cloud Strategy"](#)

Supported through HPE Complete

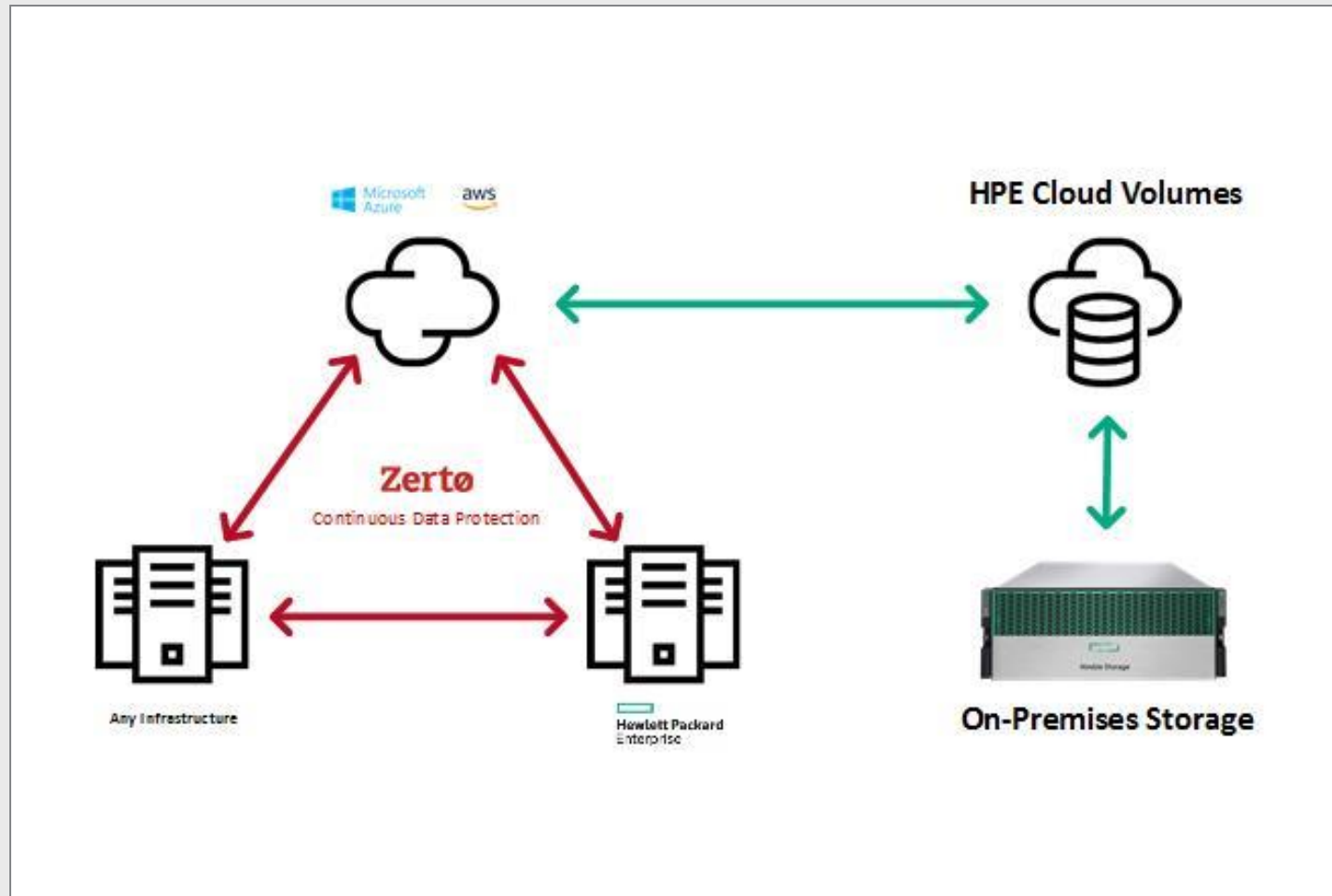
Simple sales and support

Test and validation

Documentation

Product integration

Elastic Clouds

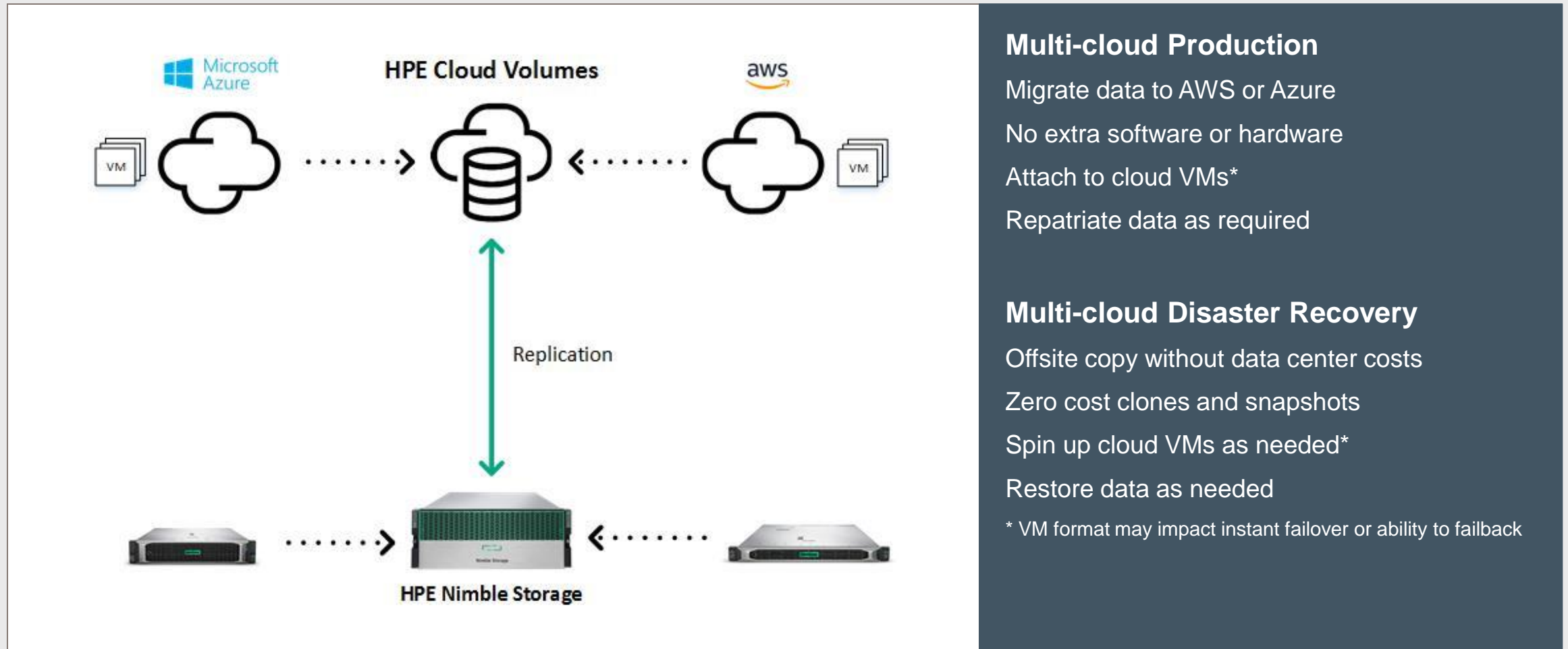


HPE Cloud Volumes

- HPE enterprise-grade cloud storage service
- Built on HPE Storage technology
- Provides hybrid cloud storage for AWS/Azure
- Share storage between multiple clouds
- Switch clouds without costly egress charges
- Low latency and high performance
- Close proximity to cloud providers in select regions



Elastic Clouds



Multi-cloud Production

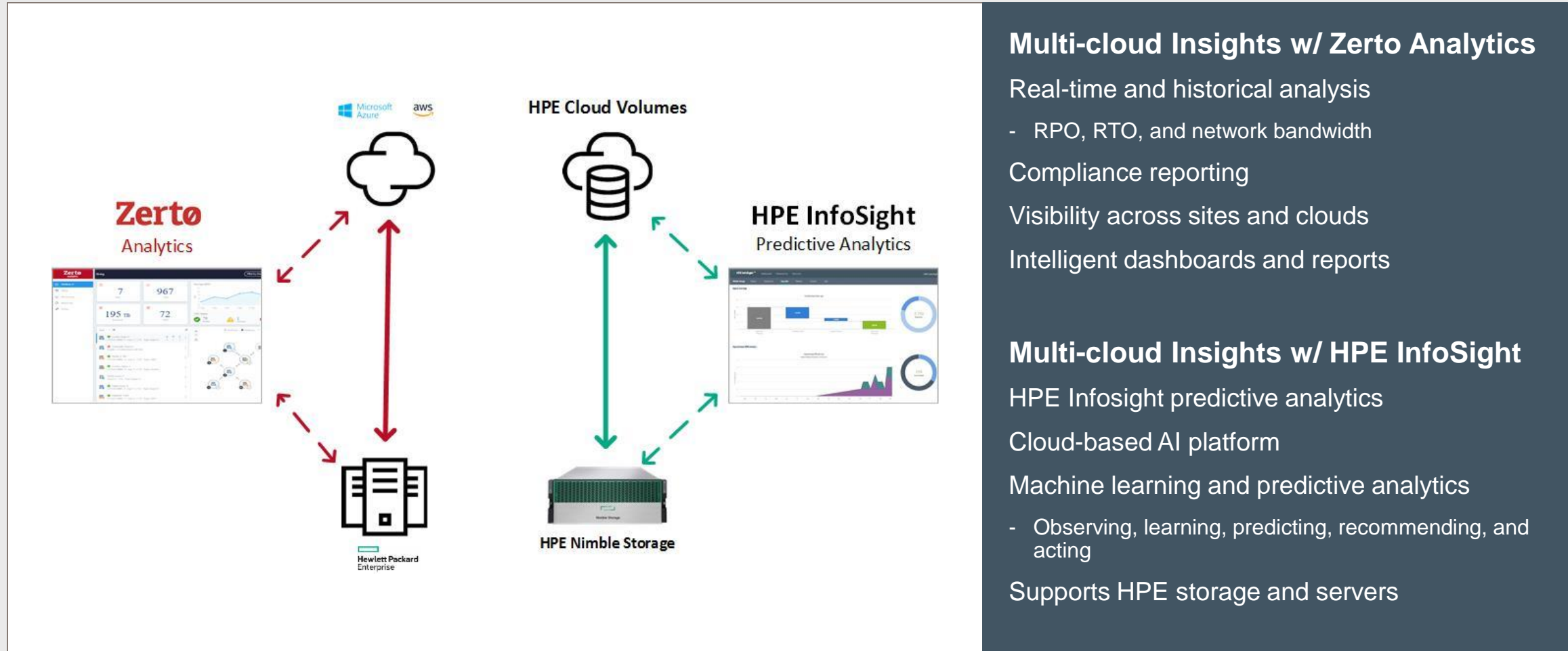
- Migrate data to AWS or Azure
- No extra software or hardware
- Attach to cloud VMs*
- Repatriate data as required

Multi-cloud Disaster Recovery

- Offsite copy without data center costs
- Zero cost clones and snapshots
- Spin up cloud VMs as needed*
- Restore data as needed

* VM format may impact instant failover or ability to failback

Elastic Clouds



Multi-cloud Insights w/ Zerto Analytics

Real-time and historical analysis

- RPO, RTO, and network bandwidth

Compliance reporting

Visibility across sites and clouds

Intelligent dashboards and reports

Multi-cloud Insights w/ HPE InfoSight

HPE Infosight predictive analytics

Cloud-based AI platform

Machine learning and predictive analytics

- Observing, learning, predicting, recommending, and acting

Supports HPE storage and servers

Elastic Infrastructure, Clouds, and Disaster Recovery

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Elastic Infrastructure

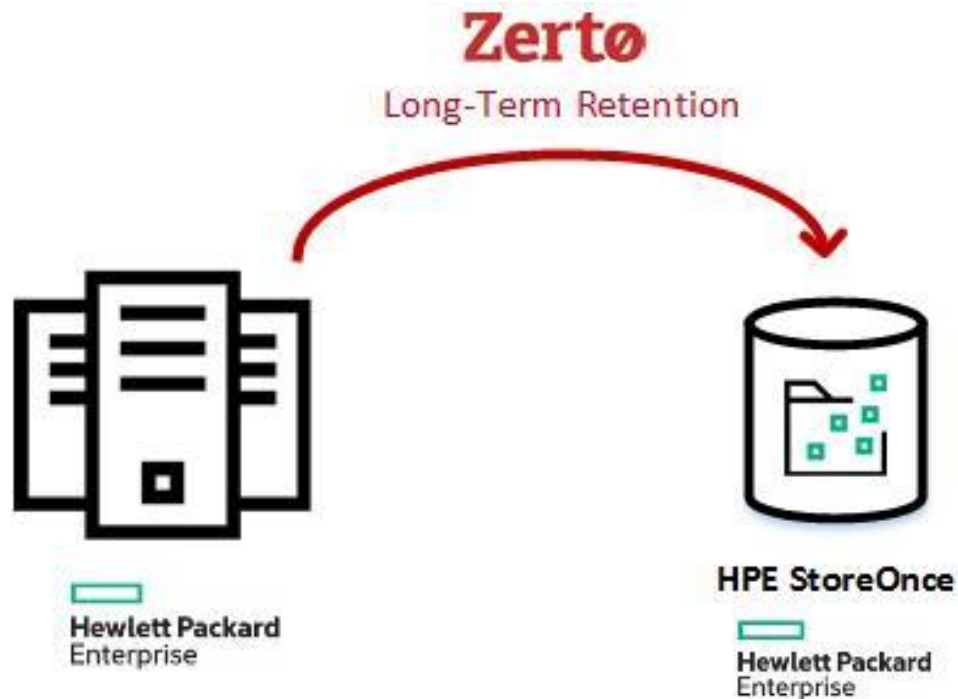
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Elastic Clouds

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Elastic Disaster Recovery

Elastic Disaster Recovery



Zerto Long-Term Retention

Recovery site used as backup source

No impact to production workloads

Eliminates backup windows

Zerto Elastic Journal – 7 seconds to 7 years

HPE StoreOnce

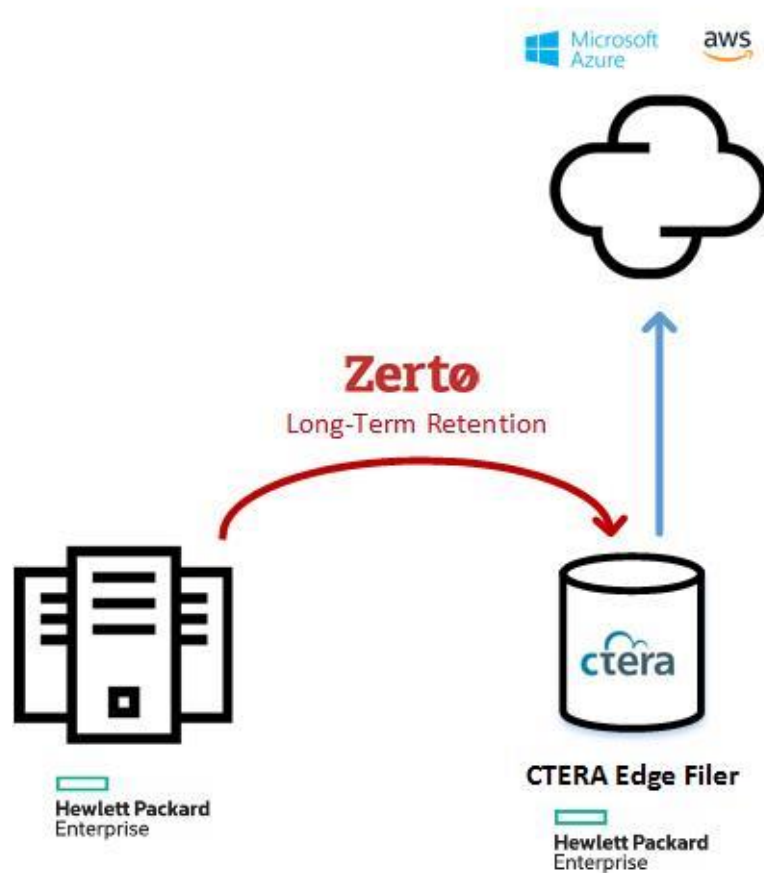
Fully tested as NFS fileshare

HPE Catalyst and CloudBank coming soon...

Other HPE Complete Solutions

CTERA Edge Filer

Elastic Disaster Recovery



CTERA Edge Filer

All-in-one solution for storage, backup, and file collaboration across the enterprise

Full featured NAS –NFS/SMB/CIFS

Supports variety of object storage and cloud IaaS providers

Store frequently used file on-premises

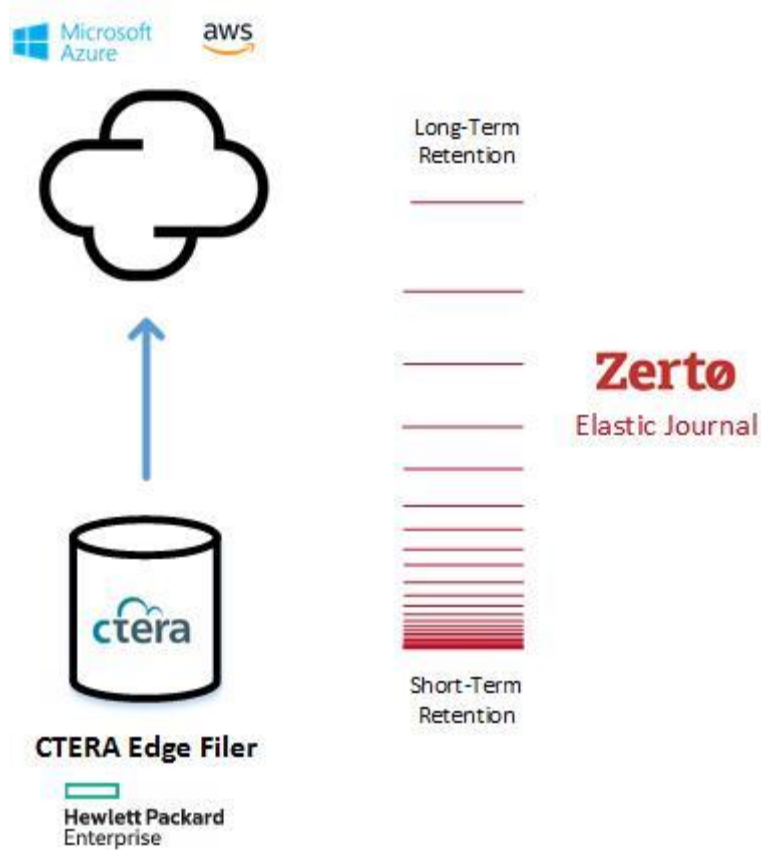
Offload non-critical files to the cloud

File caching for consistent performance

Qualified and supported on HPE ProLiant

- HPE ProLiant DL360 Gen10
- HPE ProLiant DL380 Gen10
- HPE Simplicity 380 Gen10

Elastic Disaster Recovery



On-Premises Backup and Recovery

Policy driven

Short-term retention (short RPO/RTO)

Frequently restored or used (warm data)

Use cases: User error, Viruses, worms, ransomware, etc.

Cloud Backup and Recovery

Store unlimited recovery points in cloud

Long-term retention (longer RPO/RTO)

Infrequently restored or used (cold data)

Uses cases: Compliance, archiving, and audits

Elastic Infrastructure, Clouds, and Disaster Recovery

1

Elastic Infrastructure

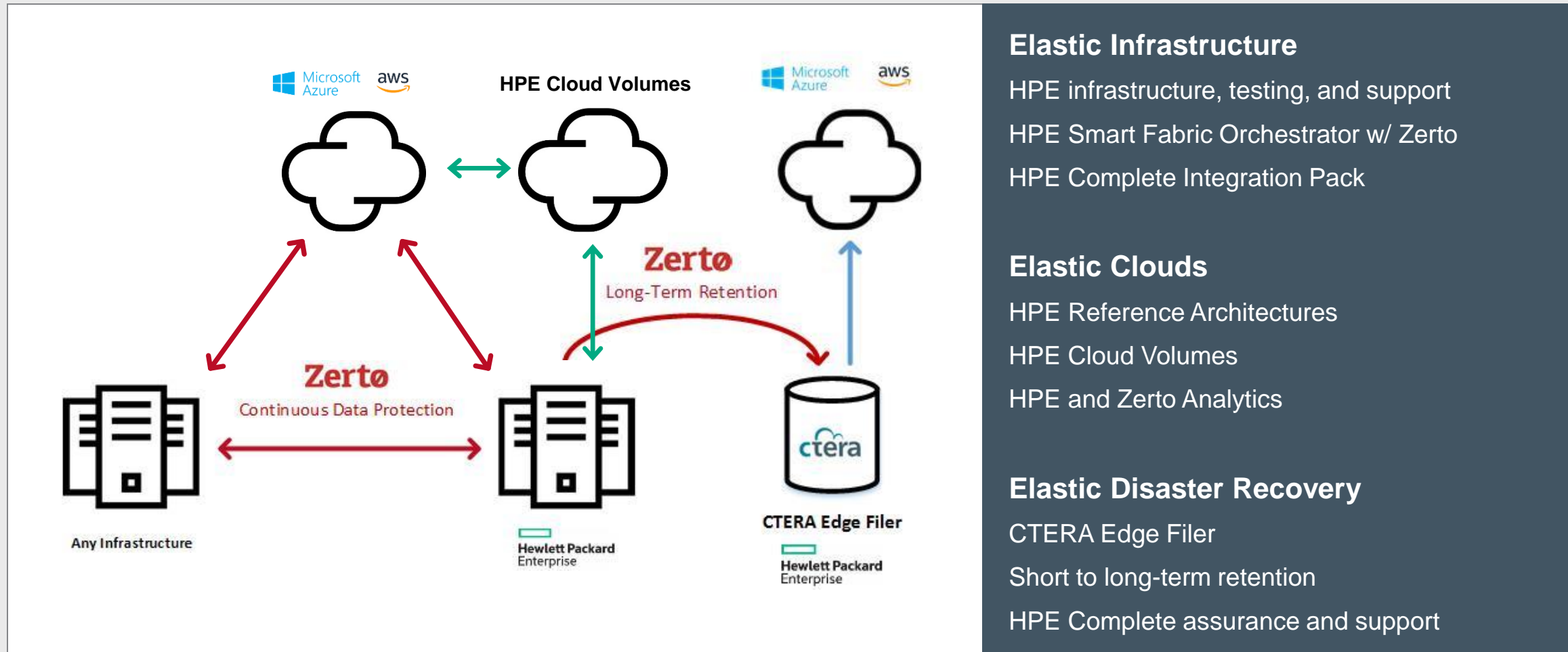
2

Elastic Clouds

3

Elastic Disaster Recovery

Elastic Infrastructure, Clouds, and Disaster Recovery



Elastic Infrastructure

- HPE infrastructure, testing, and support
- HPE Smart Fabric Orchestrator w/ Zerto
- HPE Complete Integration Pack

Elastic Clouds

- HPE Reference Architectures
- HPE Cloud Volumes
- HPE and Zerto Analytics

Elastic Disaster Recovery

- CTERA Edge Filer
- Short to long-term retention
- HPE Complete assurance and support