vmware

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vForum2015

9 December 2015 | Taipei, Taiwan

掌握高效雲端儲存 創新 IT 管理優勢

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Agenda

- VMware Ecosystems Integration
- VMware deeply integration
- Business Continuity and Disaster Recovery (AltaVault, NPS, Cloud ONTAP)
- High performance scale vertically or horizontally (All Flash, FlexPod)
- The best storage for virtualization (Cluster data ONTAP)
- Never challenge in Storage/Virtualization Management (OnCommand Insight)
- NetApp product portfolio and vision (Data Fabric)

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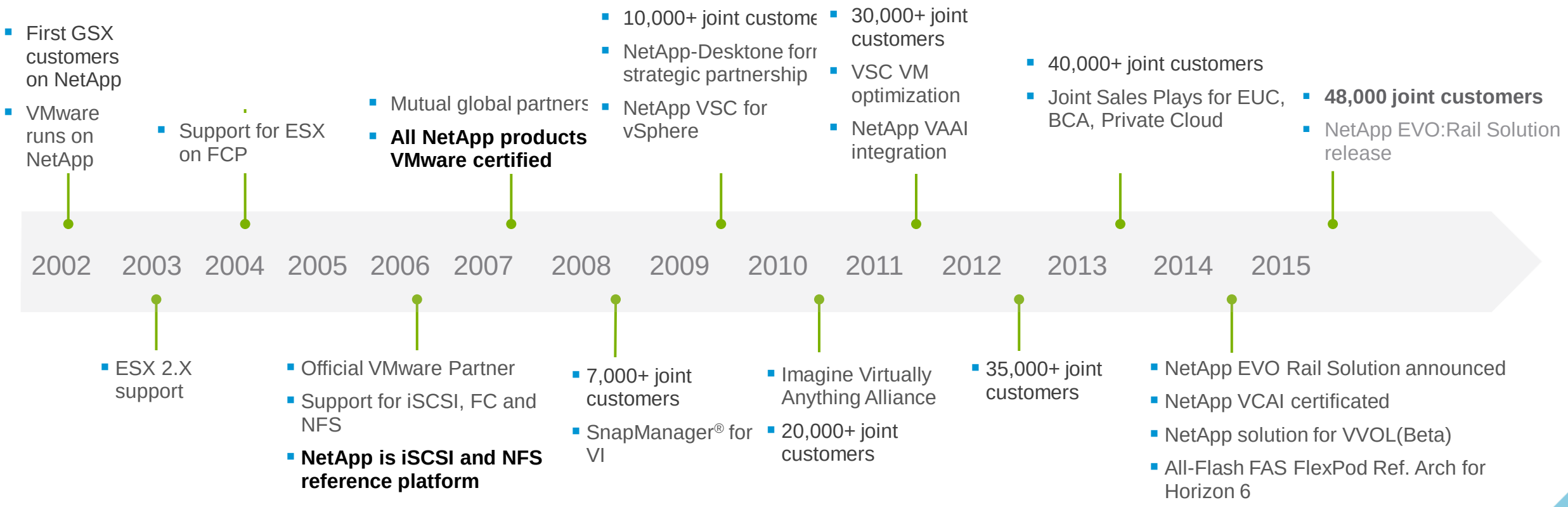
VMware Ecosystems Integration

NetApp and VMware Long-term Partnership

Delivering joint innovations



NetApp: Our special sauce is in the software.

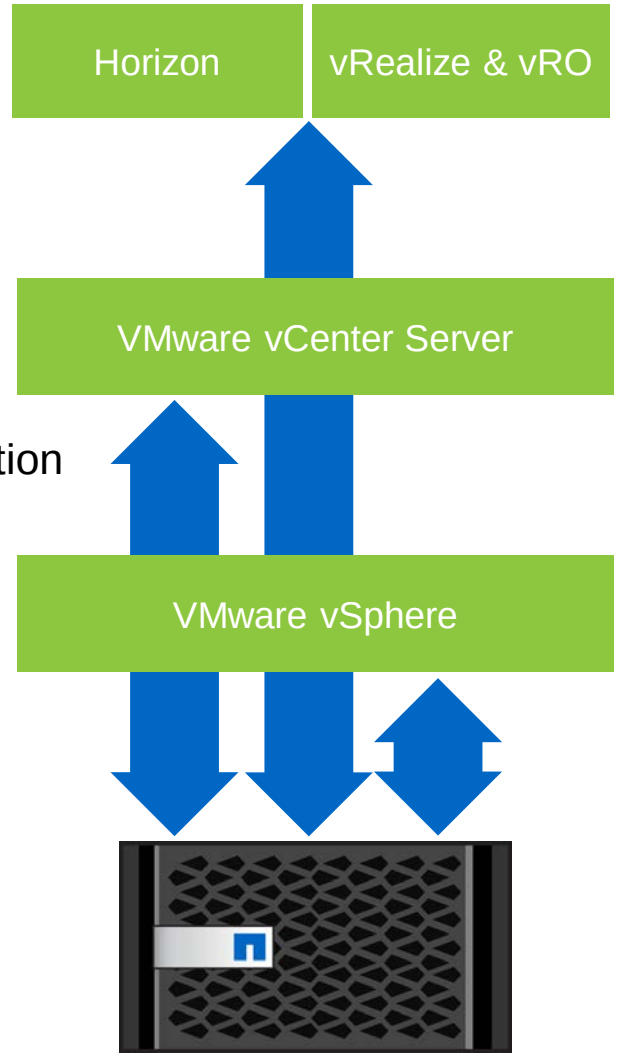
Comprehensive VMware Integration

Horizon
- View VCAI provisioning
- Horizon DaaS

vROps and vR Log Insight
- vROps adapter
- vR Log Insight Content Pack

vCenter Plug-ins
- VSC
  - Monitoring and host configuration
  - Provisioning and cloning
  - Backup and recovery
  - Optimization
- DR failover/failback with SRM

VASA Provider
- Policy-based management (aka Software-defined Storage)
- Events and alarms
- VVol management



vRealize & VRO
- vCloud backup and recovery
- DataStore provisioning
- vApp VAAI provisioning

VAAI for SAN
- Full copy
- Block zero
- HW assist locking
- Space reclamation
- Thin provisioning suspend

VAAI for NFS
- Full copy / clone
- Space reservation

vSphere I/O
- Storage I/O Control (SIOC)
- Multipathing (ALUA)

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VMware deeply integration

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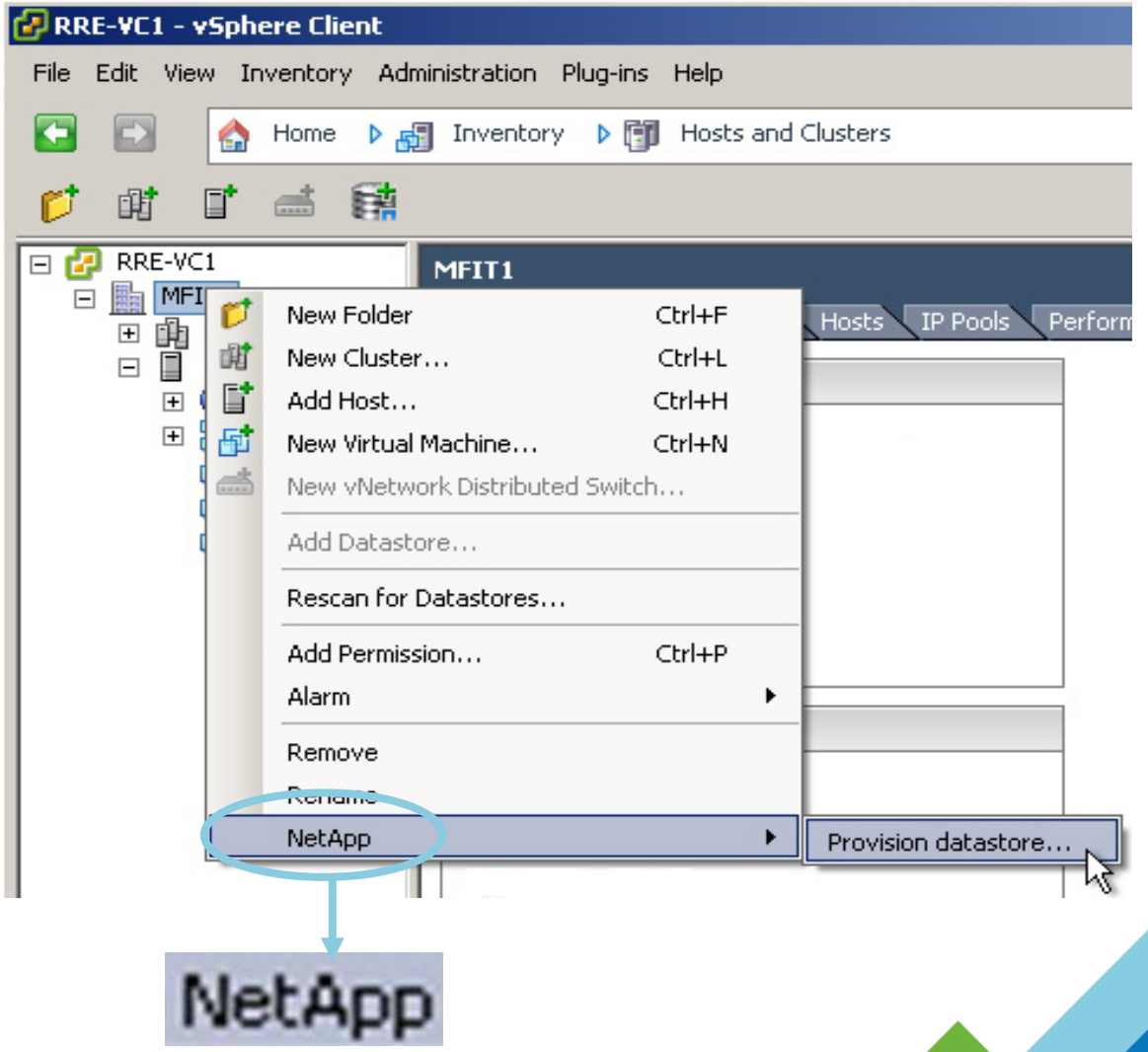
VMware Plug-In 新增 Datastores

- 部署 datastores
  - 無須儲存管理者的介入
- 支援在不同的等級快速部署 datastores
  - Data Center
  - Cluster
  - Host

SAN + NAS + iSCSI + FCoE



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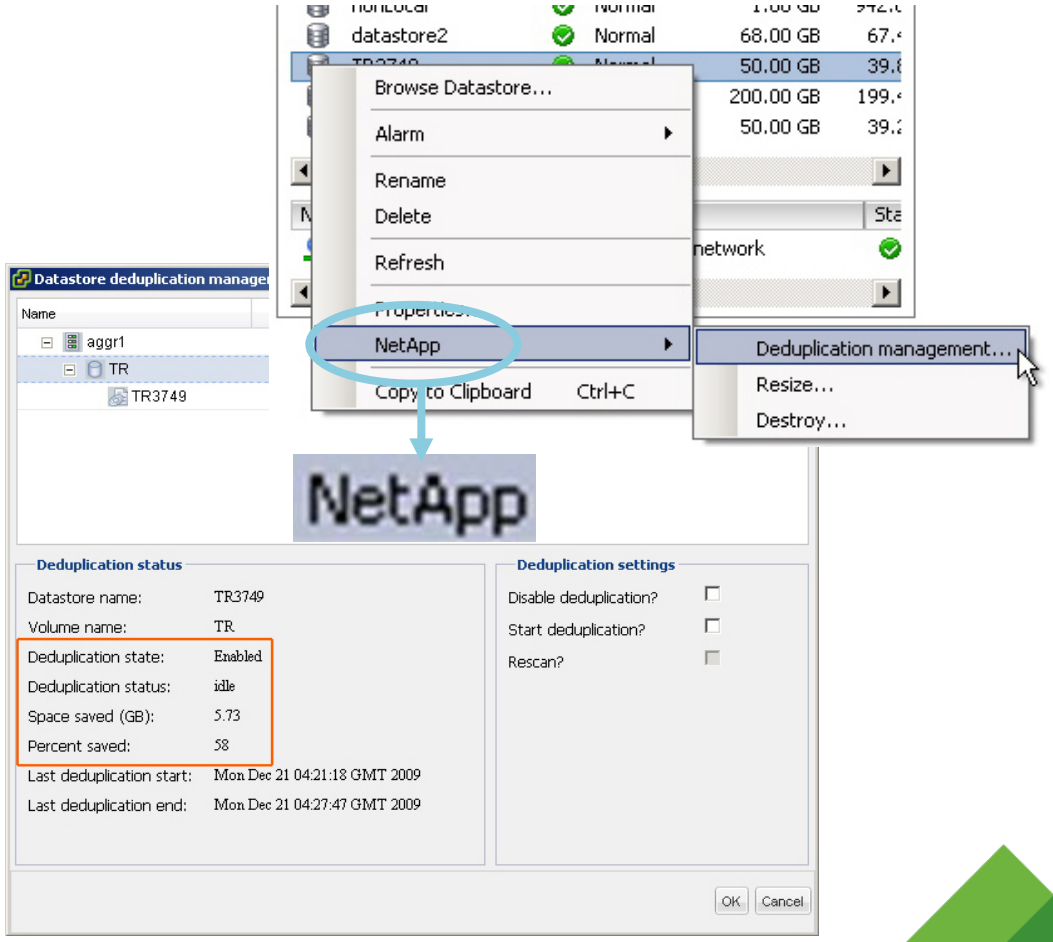
VMware Plug-In
放大/ 縮小 / 刪除 / 重複資料刪除 Datastores

- 管理儲存設備的選項及設定
  - 啟用重複資料刪除功能
  - 啟用精簡配置功能
- 調整 datastores的容量大小
  - 放大
  - 縮小 (NFS)
  - 設定自動增長 (NFS)

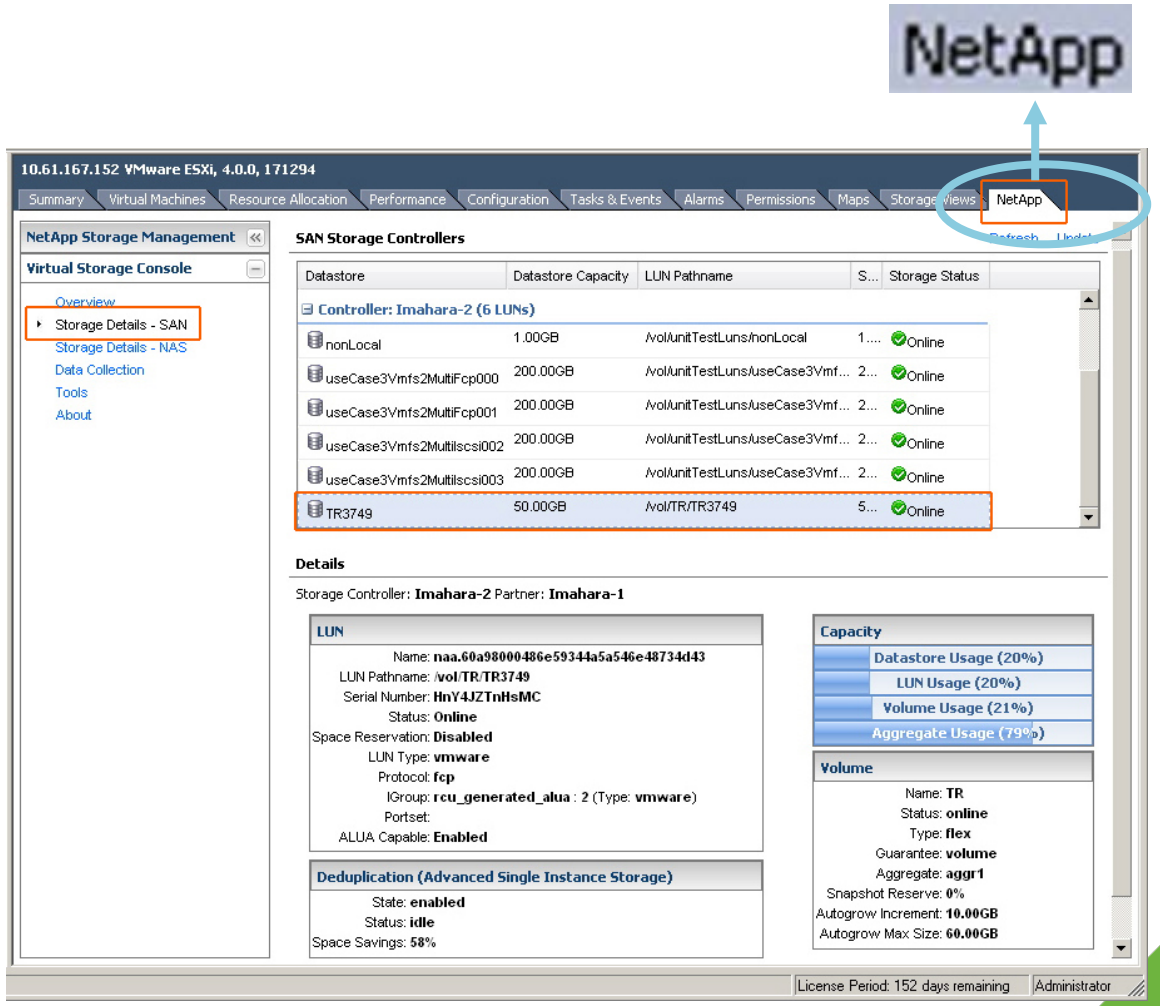
SAN + NAS + iSCSI + FCoE



VMware Plug-In 顯示儲存設備空間使用率 / 空間節省率

- 提供 VM管理者儲存使用率報告
- 完全透通於儲存層級:
  - Datastore
  - LUN
  - FlexVol
  - Aggregate (實體硬碟)

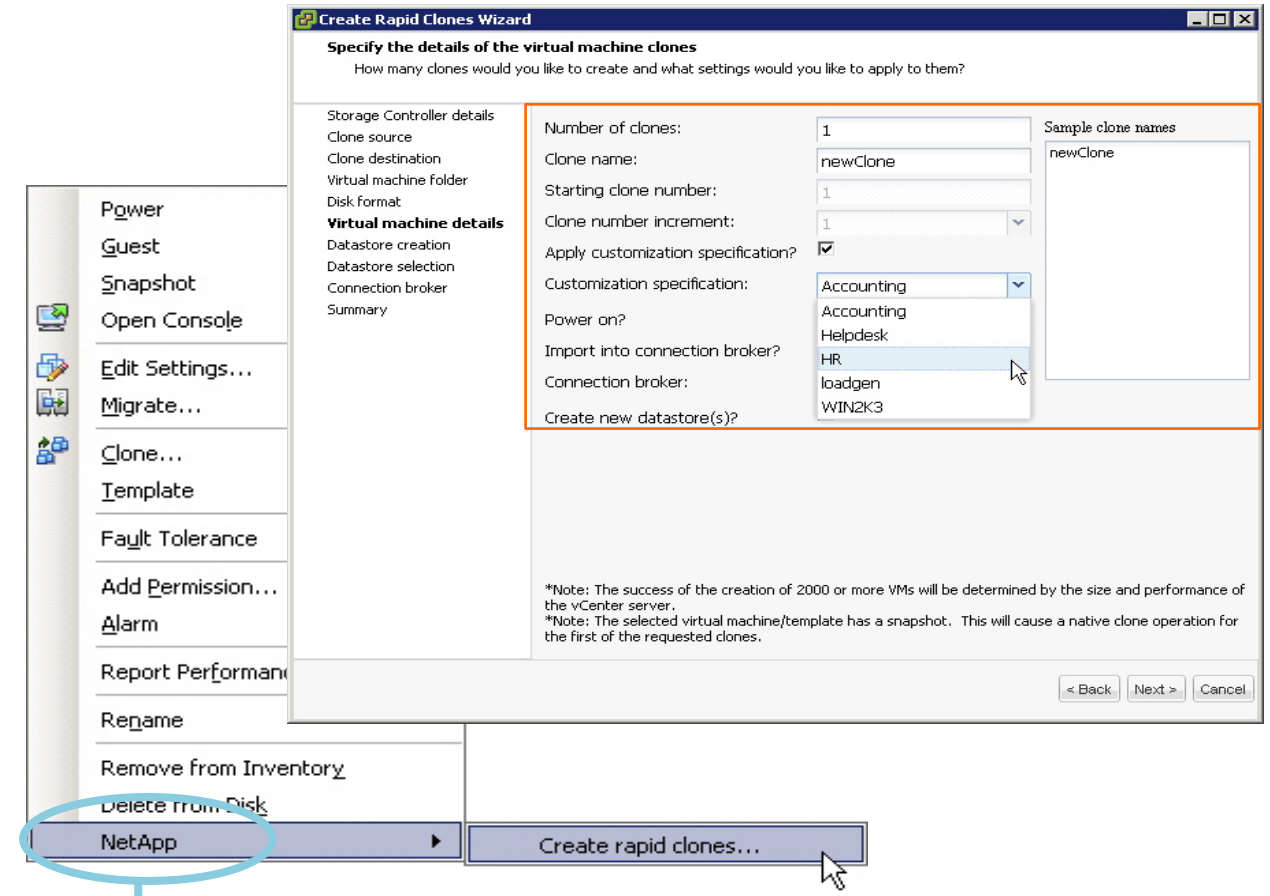
SAN + NAS + iSCSI + FCoE



VMware Plug-In VM快速複製 Rapid Cloning

- 即時快速複製 VMs
  - 虛擬伺服器
  - 虛擬桌面
- 原生的儲存高效率
  - I/O offload
  - 預先重複資料刪除的複本

SAN + NAS + iSCSI + FCoE



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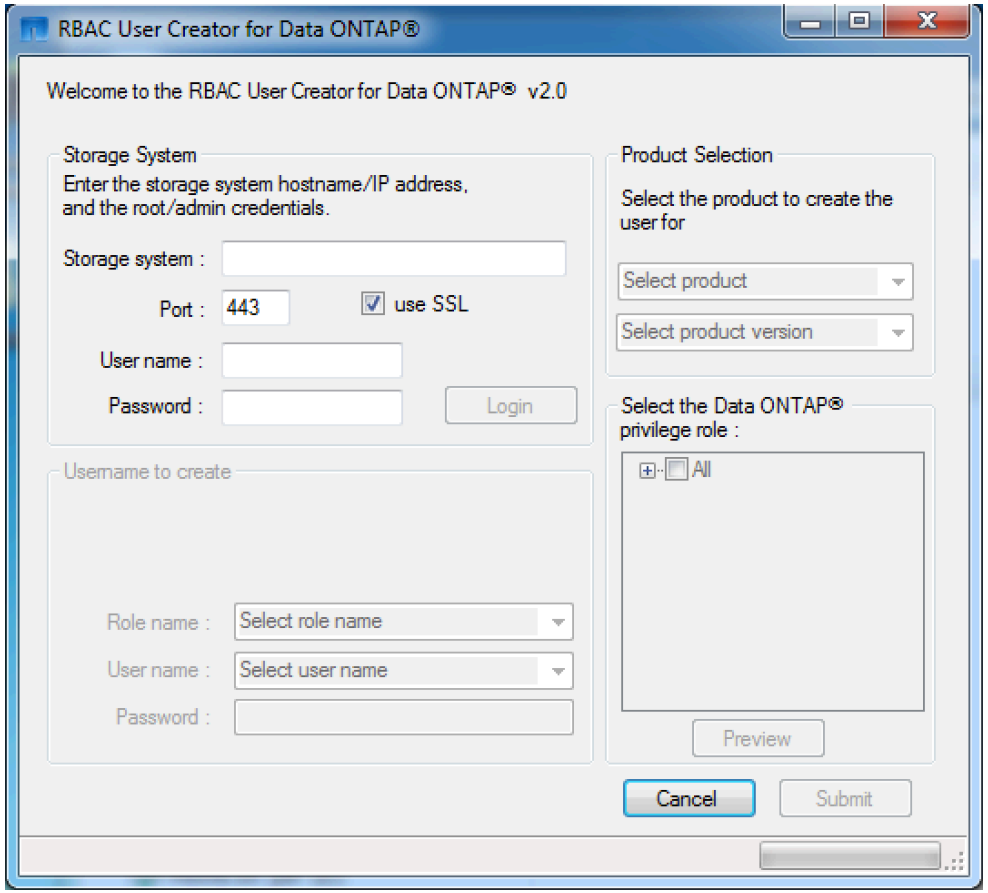
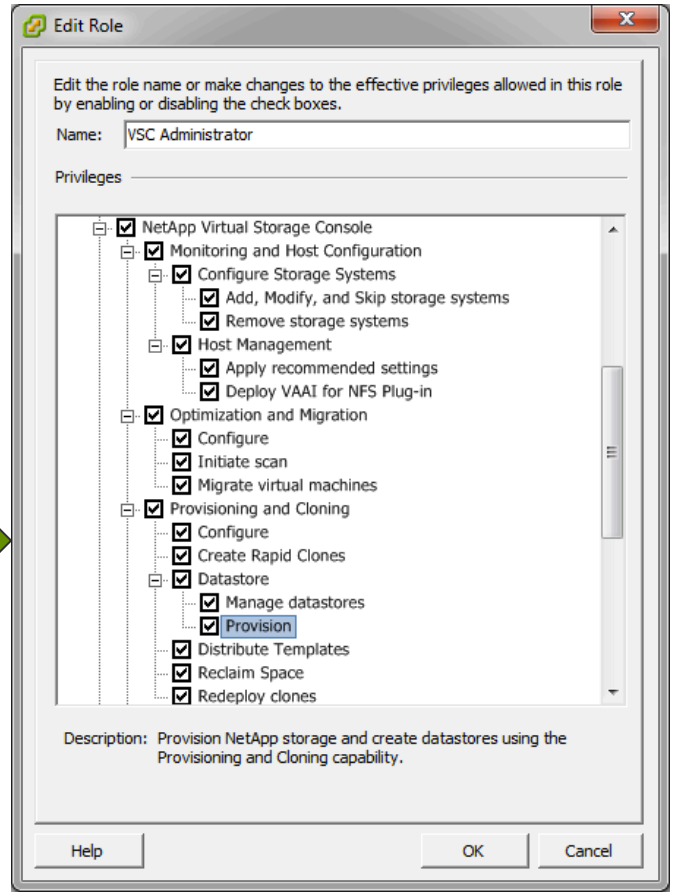
Virtual Storage Console Role-Based的全面權限安全控管

Comprehensive Role-Based Access Control



NetApp Storage

VMware vCenter



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Business Continuity and Disaster Recovery

Cloud solutions for VMware vSphere **(AltaVault, NPS, Cloud ONTAP)**

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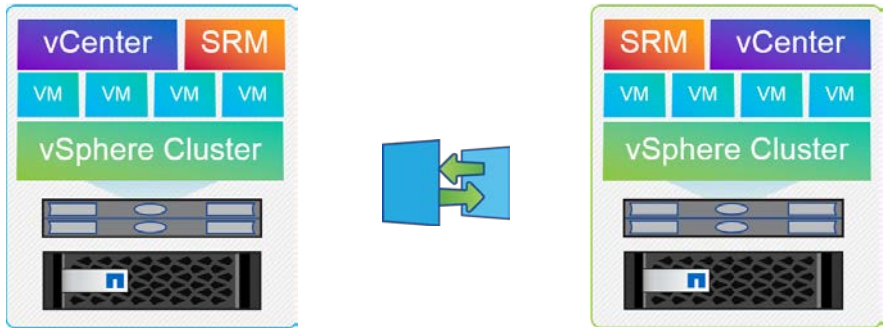
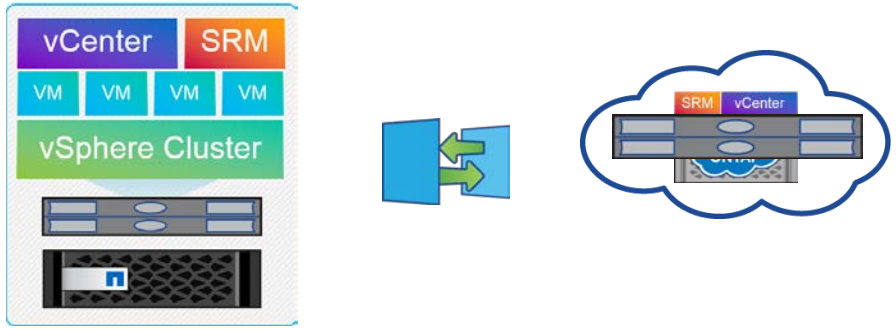
Disaster Recovery Scenarios

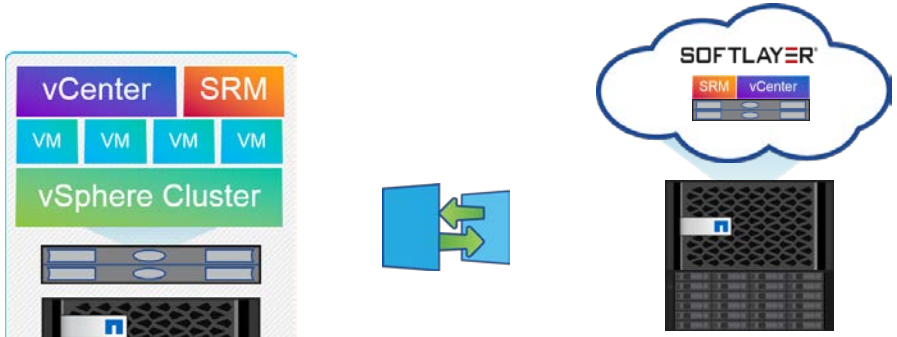
Private Cloud
Site-to-Site



Public Cloud



Hybrid Cloud
with SoftLayer and NPS



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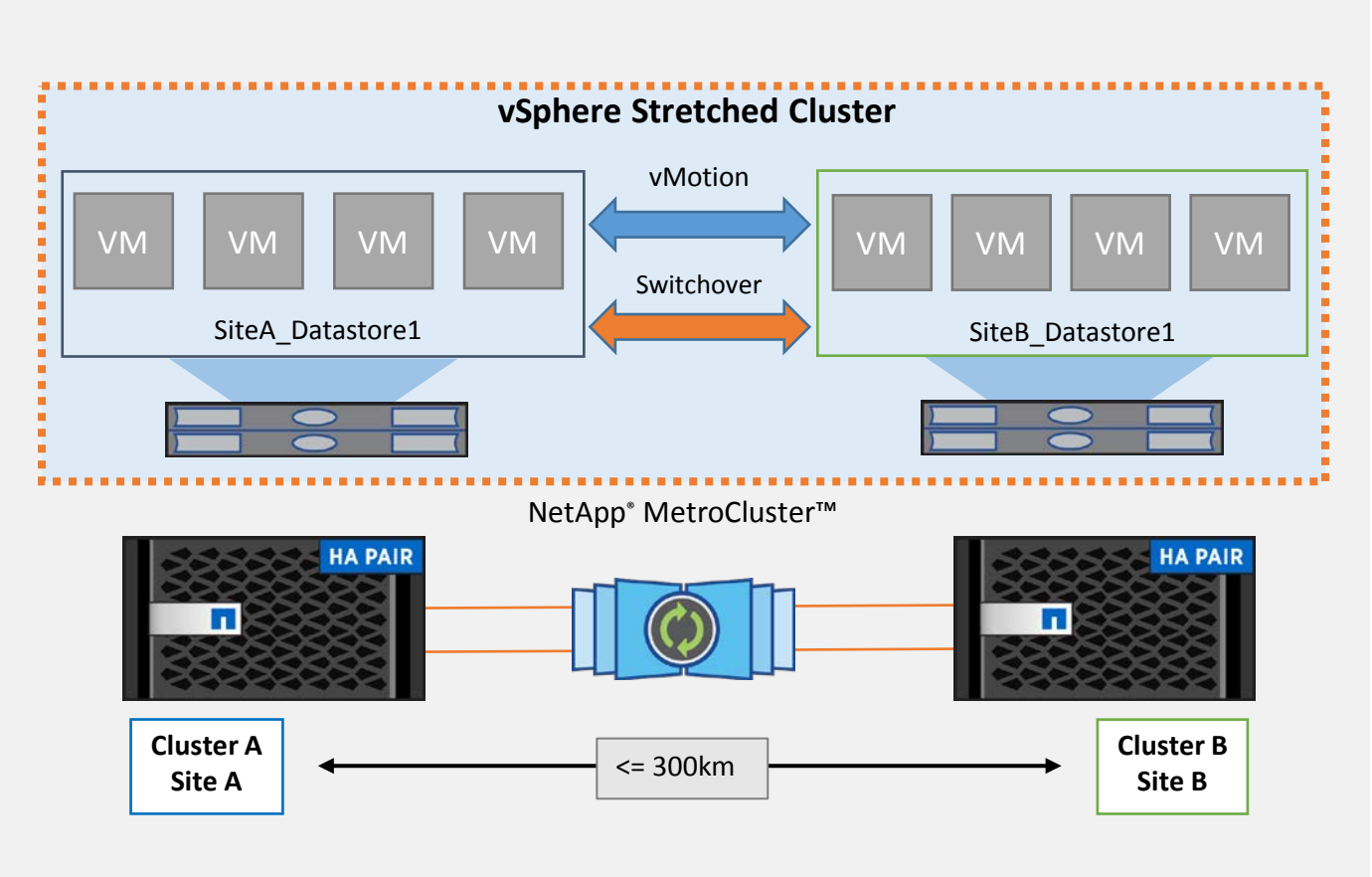
vSphere Metro Storage Cluster (vMSC)

- **What is vMSC?**
- **VMware certified** solution for HA storage architectures.
- Storage availability for two sites up to 300km.

- **What are the benefits?**
- Extend vSphere HA across **synchronous replication sites** for **automated recovery of host failures**.



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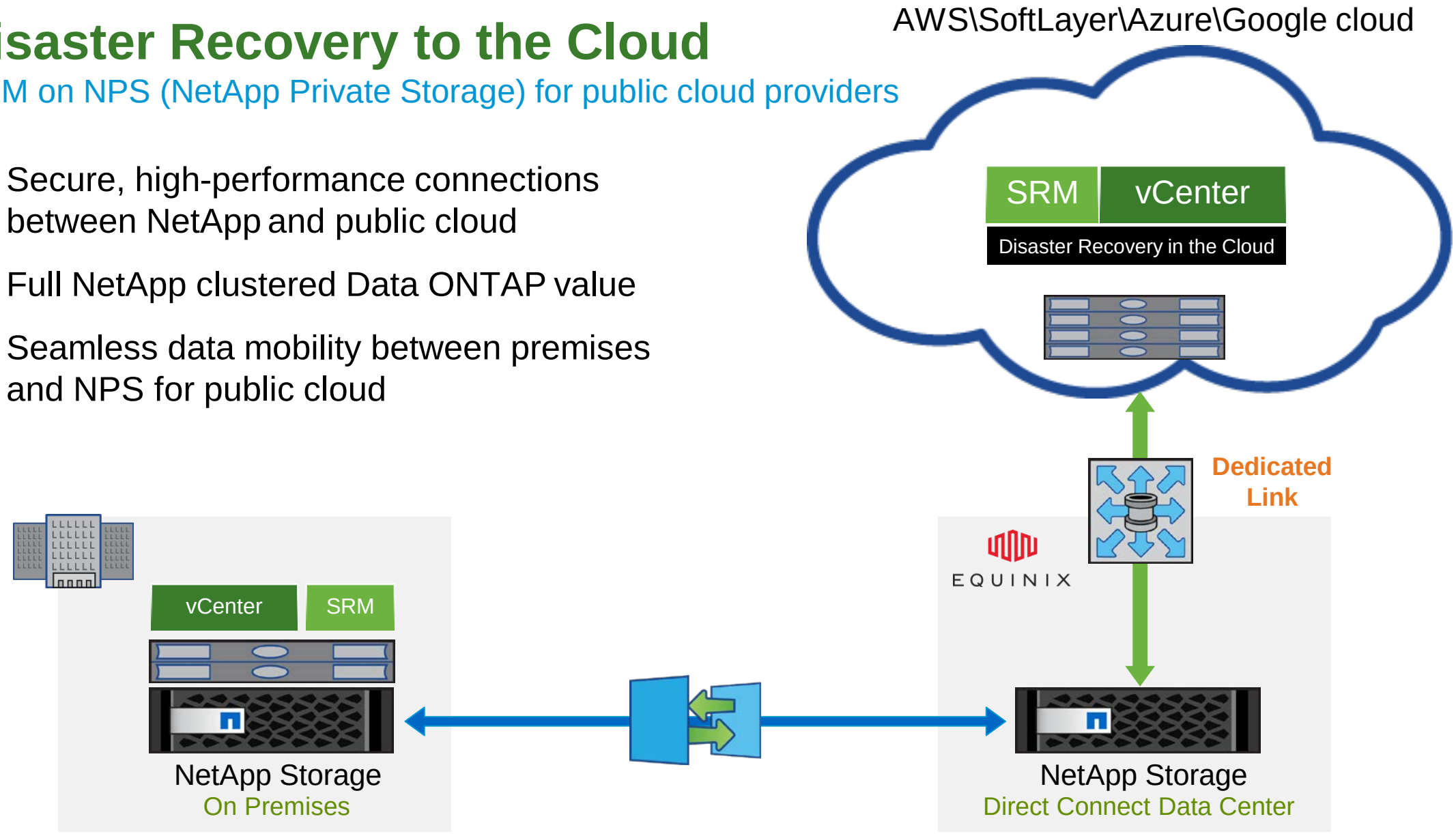
Disaster Recovery to the Cloud

SRM on NPS (NetApp Private Storage) for public cloud providers

- Secure, high-performance connections between NetApp and public cloud
- Full NetApp clustered Data ONTAP value
- Seamless data mobility between premises and NPS for public cloud



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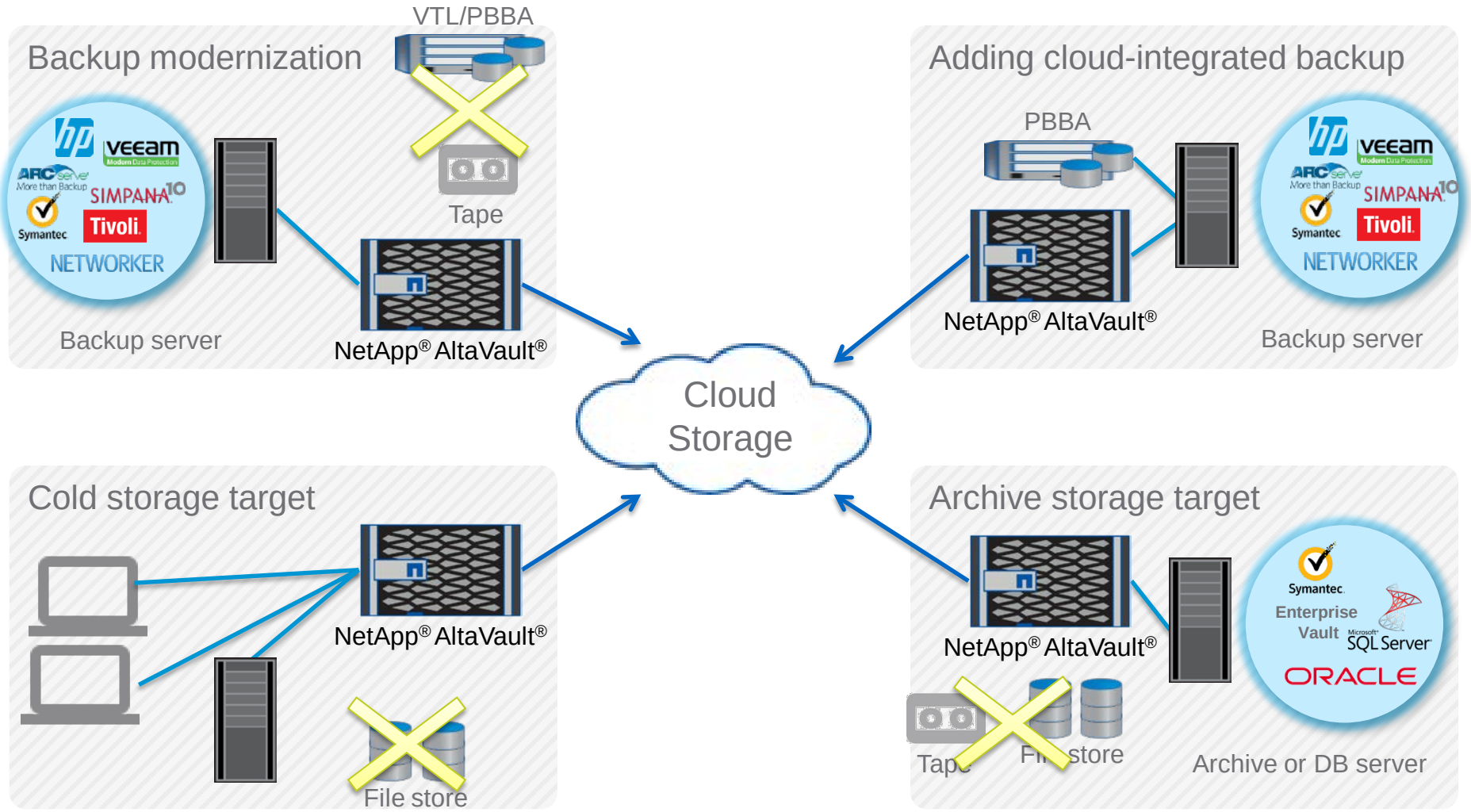
Cloud backup and archive use cases

NetApp AltaVault



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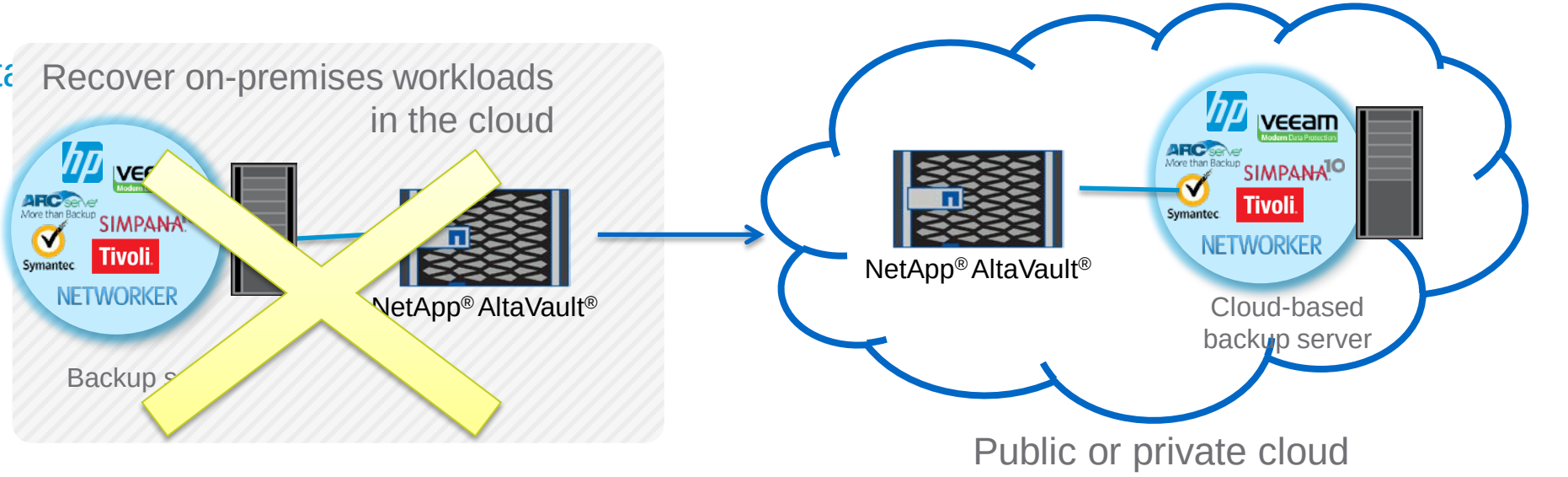
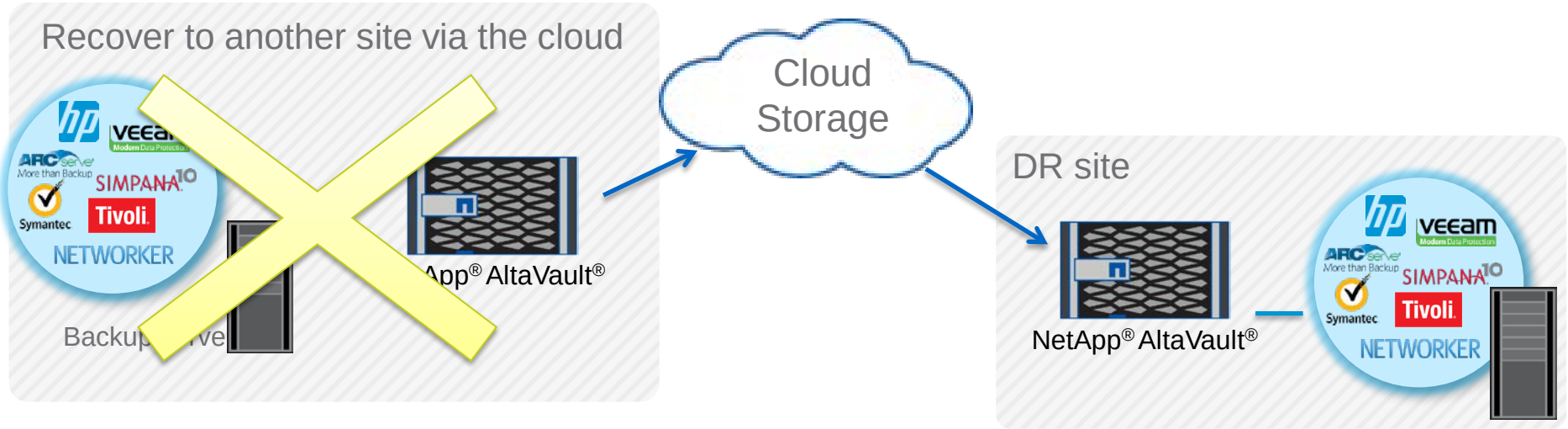
Disaster recovery options

NetApp Alta





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High performance scale vertically or horizontally

Scale out with standard and proven configurations **(All Flash, FlexPod)**

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NetApp 3x performance guarantee

Guaranteed performance for enterprise applications when comparing NetApp® flash to disk-based systems

- **Systems:** NetApp AFF8080 and EF560
- **Performance: At least 3x more IOPS at 1-millisecond latency than with disk**
- **Workloads:** SQL Server and Oracle Database
- **Offer period:** October 20, 2015, through April 29, 2016
- **Implementation:** NetApp or NetApp authorized partner

If the system does not meet the guarantee, **NetApp will provide up to two days of Professional Services to optimize the system** or to assess performance bottlenecks

Switch to NetApp and get
3x the performance. Guaranteed.

www.netapp.com/3xguarantee

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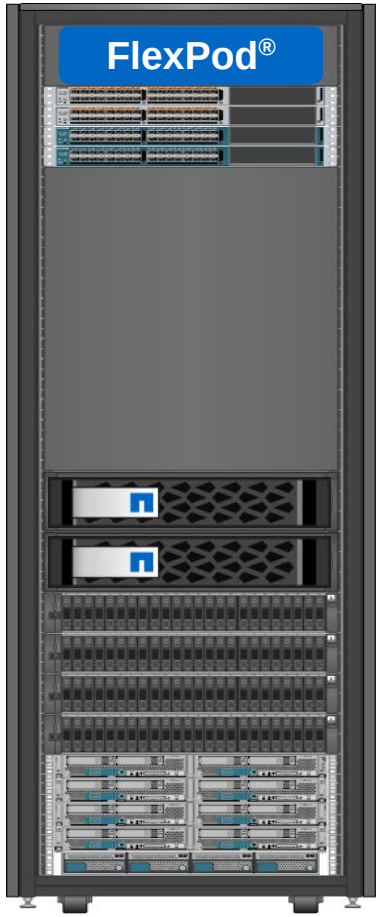
Optimize for Any Workload

FlexPod NetApp (Cisco) for VMware, Hyper-V, Oracle, SAP, Citrix, Red Hat, OpenStack, Hadoop, Oracle(RAC)

Production-Balanced Infrastructure



CPU
Memory
Capacity
IOPS

VDI

Higher-performance blades and more input/output operations per second (IOPS)

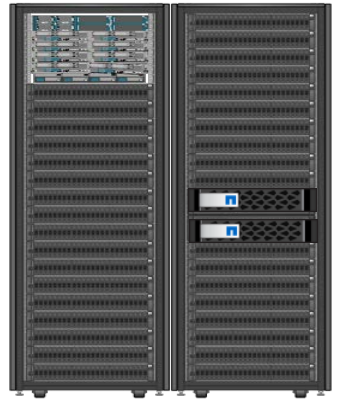
Develop and Test

More computing and less storage

Entry-Level

Deploy entry-level system, then scale up

Data Protection and Backup



Less computing and more storage

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The best storage for virtualization

Non-disruptively **(Cluster data ONTAP)**

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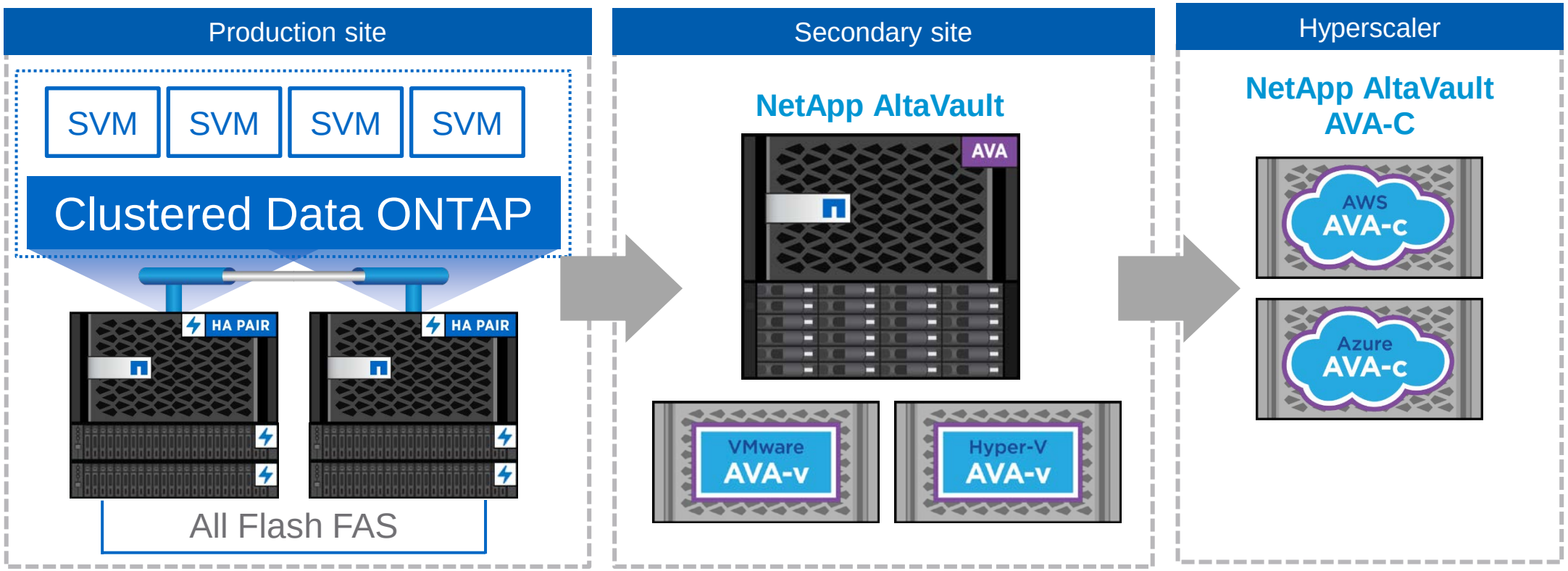
Backup and Recovery Architecture with AltaVault



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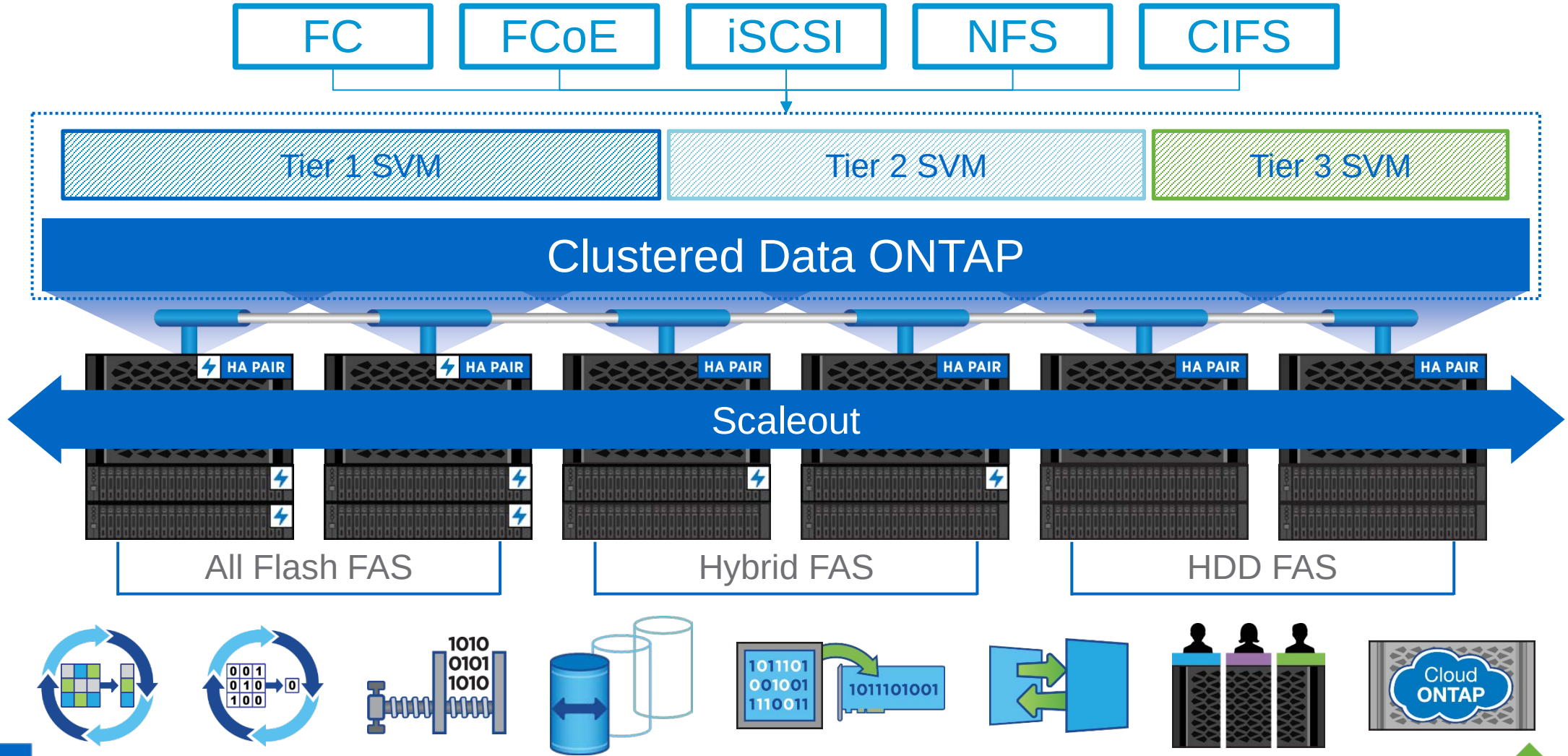
Enterprise Capabilities



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Never challenge in Storage/Virtualization Management

Simplify troubleshooting and analysis **(OnCommand Insight)**

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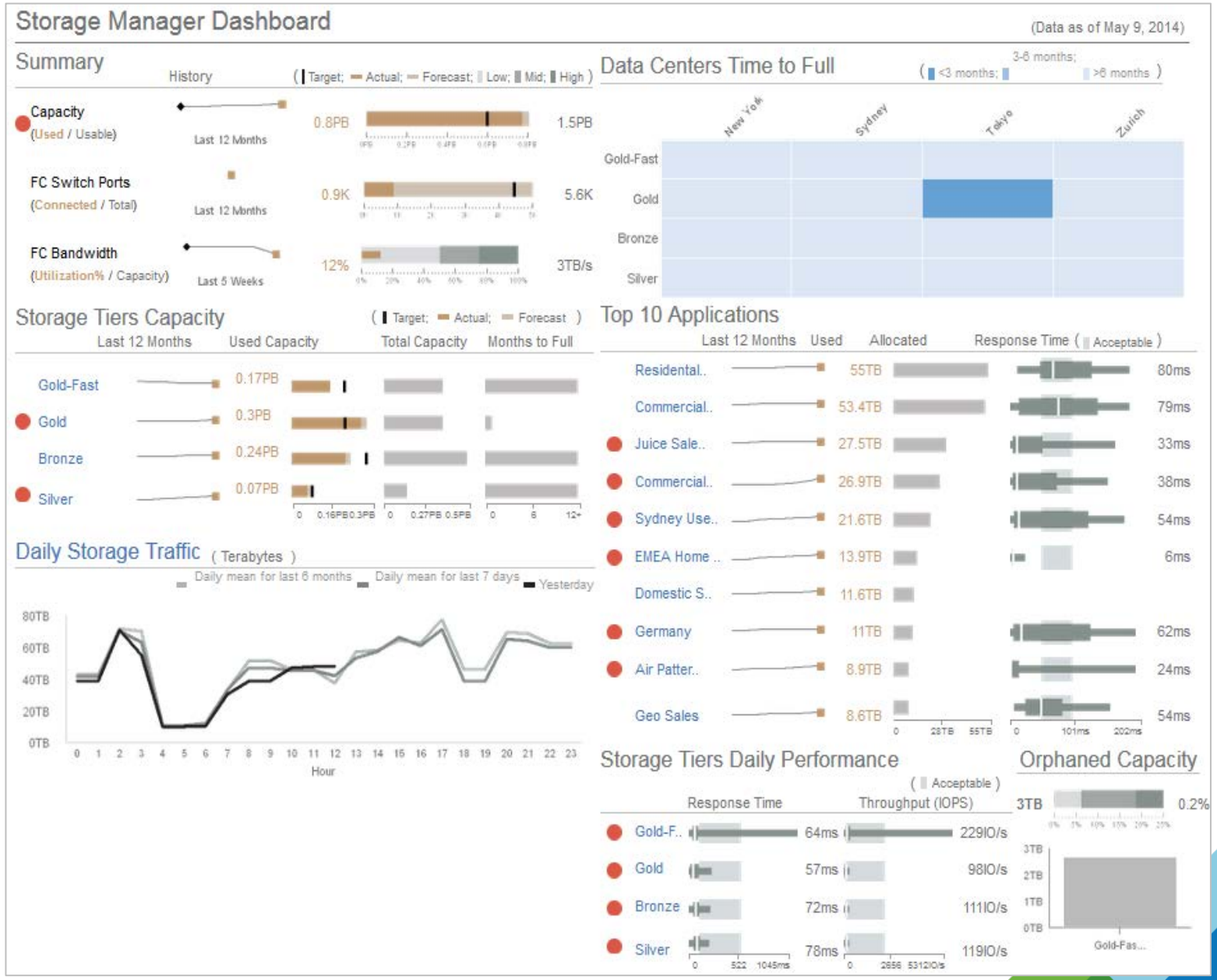
OnCommand Insight

Broker and monitor storage across the cloud

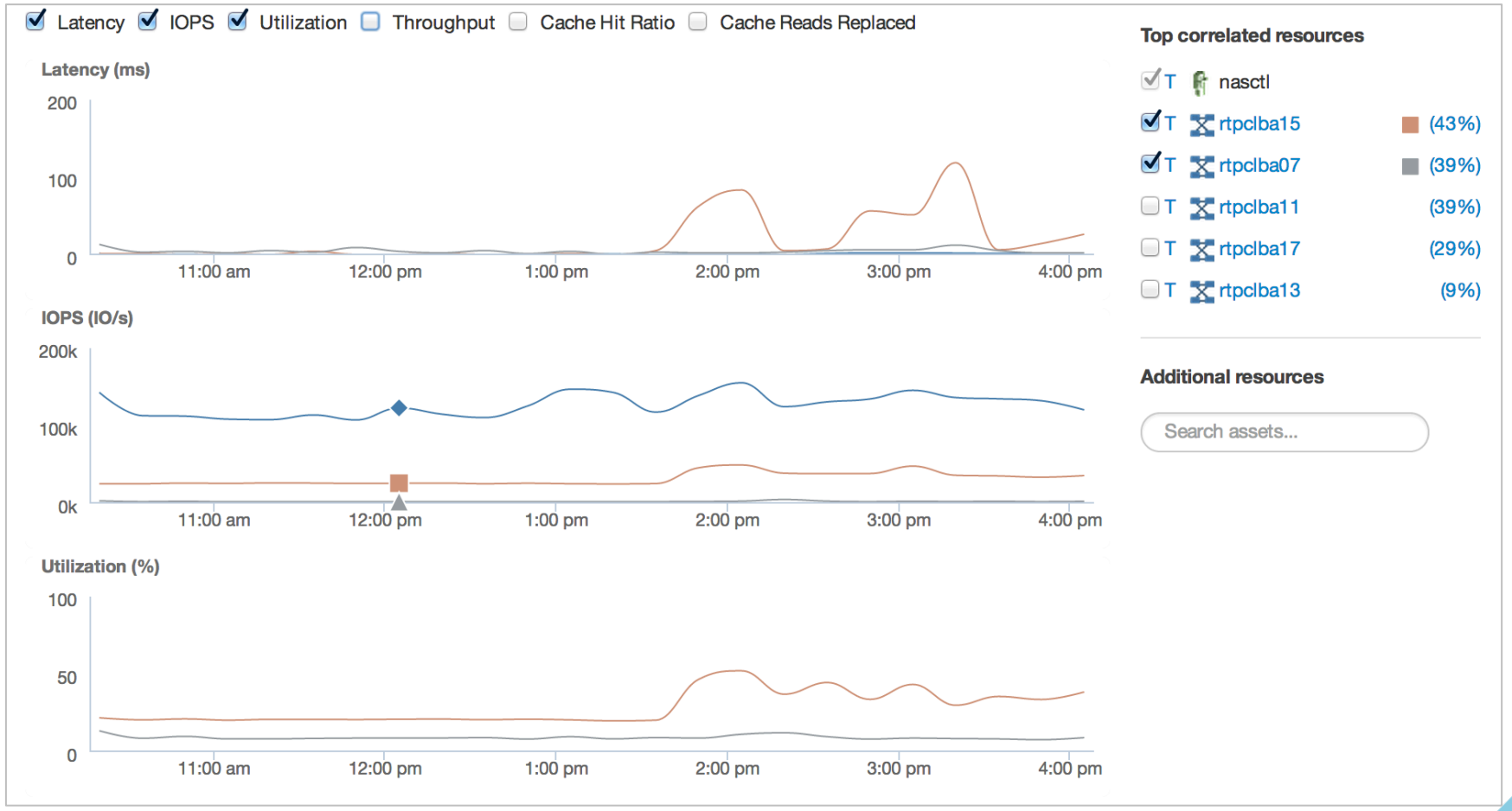
- Operations
  - Determine where to put workloads
  - Monitor and troubleshoot performance issues
- Service quality
  - Reduce risk
  - Assure service levels
- Cost management
  - Measuring cloud elasticity
  - Determine whether services are aligned and optimized
  - Implement cost accountability (showback, chargeback)
  - Rationalize and optimize costs
  - Manage capacity



Operational Troubleshooting

Advanced Analytics

- Analyze and audit configuration to understand the impact on performance
- Identify infrastructure downtime risks
- Ensure compliance with architecture and best practices
- Analyze the impact of servers' workloads on storage



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Multivendor infrastructure

- Operations, servic

Only NetApp® OnCommand® Insight has advanced analytics for intelligence across the **multivendor infrastructure**

Industry Leading Multivendor Multi Platform Support

Storage Support

NetApp
NetApp FAS Series 7-Mode/cDOT
NetApp Data ONTAP Edge
NetApp E-series
SnapVault (7-Mode) *-new*

EMC
EMC Atmos
EMC Celerra NAS
EMC Clariion
EMC Data Domain
EMC Isilon
EMC Solution Enabler
EMC StorageScope
EMC Symmetrix /VMAX
EMC VNX
EMC VMAX3 *-new*
EMC XtremeIO *-new*

Dell
Dell Compellent *–new*

Fujitsu
Fujitsu Eternus

HP
HP CommandView AE/AE Lite
HP 3PAR
HP EVA
HP XP

Hitachi (HDS)
HDS 95x/99x, SA800, AMS, HM700, HUS 1xx, HUS VM, NSC, USP/USPv, SMS, VSP, WMS

IBM
IBM DS, DS6000/DS8000
IBM ESS Shark
IBM TotalStorage DS4000
IBM N-series
IBM XIV

Violin
Violin 6000 Series

Storage Virtualization

NetApp v-Series
EMC Vplex
IBM SVC

Fibre Channel Switches

Brocade (McData) Sphereon/Intrepid
Brocade (McData) EFCM
Brocade Multi-Protocol Router
Cisco MDS/Nexus
QLogic SANSurfer

Access Gateway / NPV

Brocade Access Gateway
Cisco NPV

Server Virtualization

VMware Virtual Center
VMware vSphere
IBM PowerVM
MicroS Hyper-V

New in OCI 7.1

EMC VMAX3
EMC XtremIO (beta)
Dell Compellent
SnapVault 7 Mode (beta)

NetApp product portfolio and vision

Overall storage and virtualization solution provider **(Data Fabric)**

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NetApp Data Fabric

Partner Ecosystem

Cloud Service Providers

dimension data

FUJITSU

CenturyLink

T···Systems···

at&t

orange

UBER

Alibaba.com 阿里巴巴

facebook

airbnb

PLATFORM
ECOSYSTEM
TECHNOLOGY

Private Cloud

vmware vCloud Air Network

Hyperscale Cloud Providers

Google Cloud Platform

阿里云 aliyun.com

Windows Azure

amazon web services

SOFTLAYER an IBM Company

vmware CITRIX SAP cisco Microsoft ORACLE

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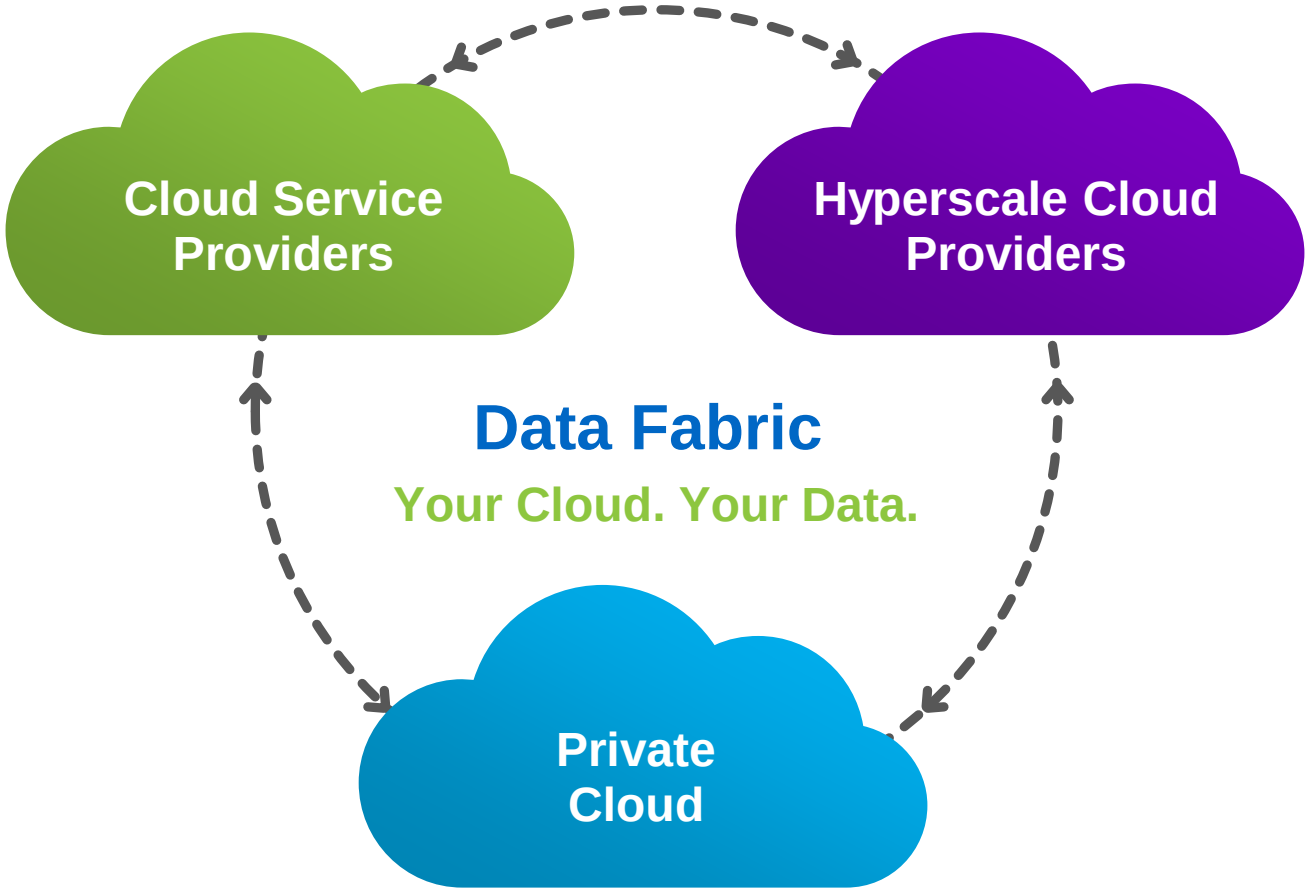
Vision: Connecting all “your clouds” with NetApp



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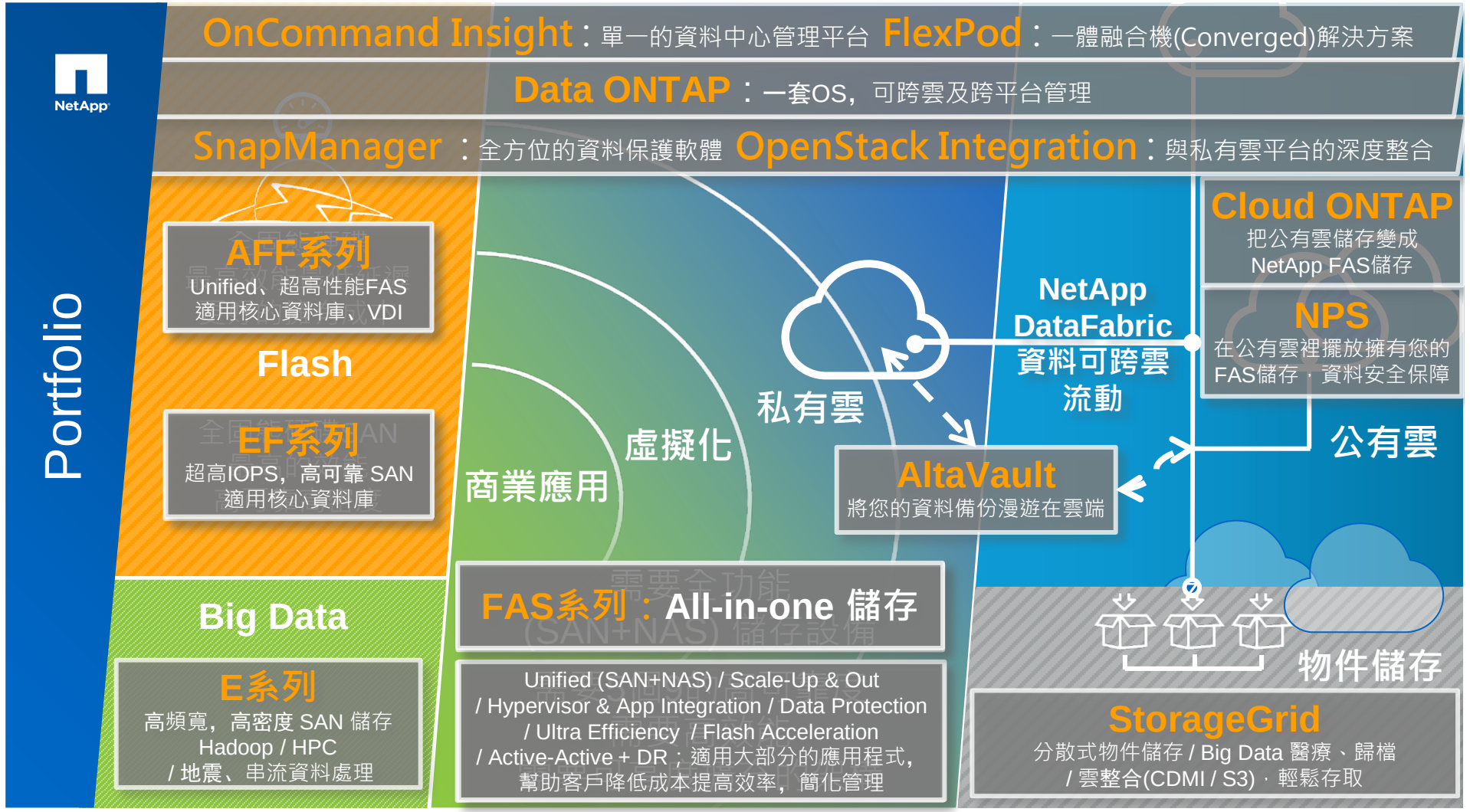
NetApp product portfolio



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