Moving to the Cloud with NetApp

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NetApp

NetApp Employees Around the World
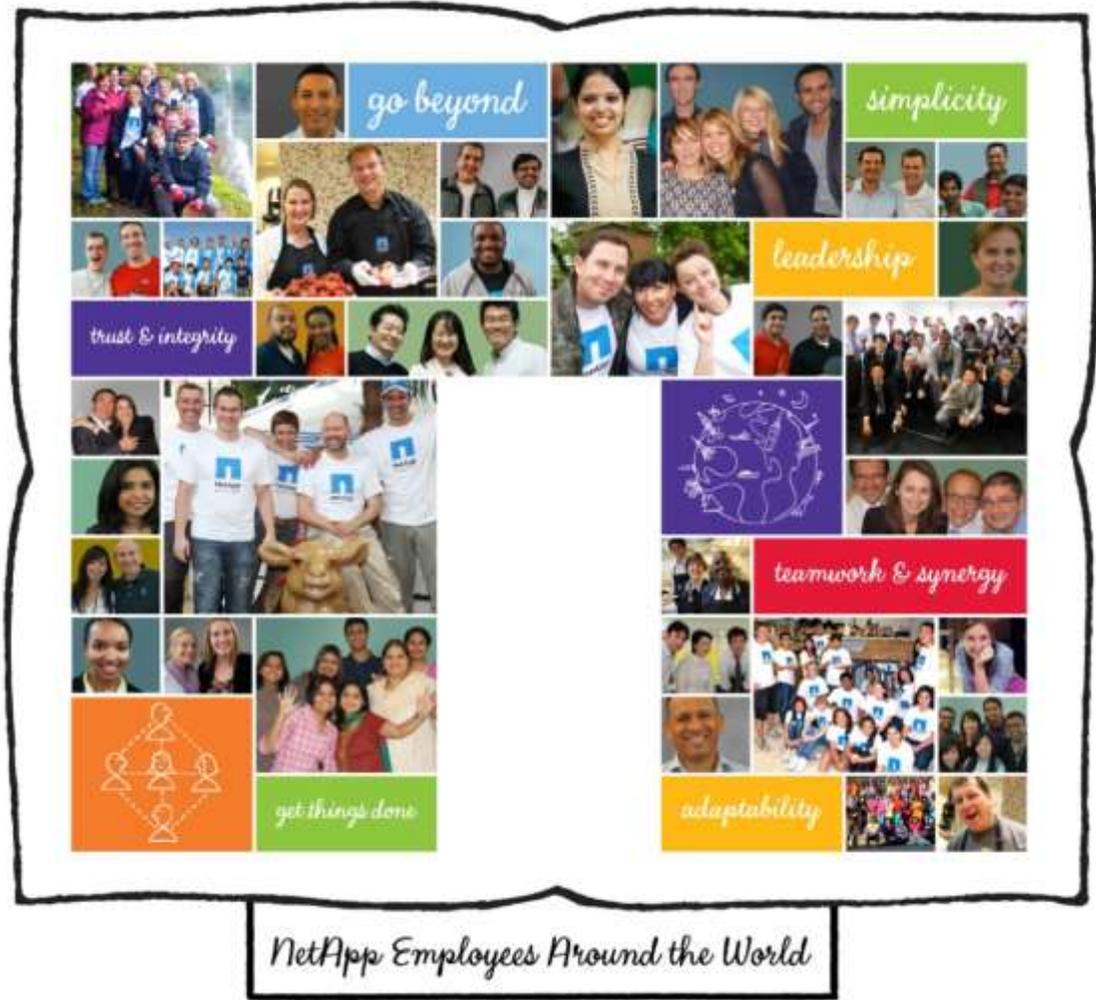
NetApp is a $6.3B Fortune 500® company that creates innovative storage and data management solutions

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Changing role of IT

Builders & ~~Operator~~Brokers of Services
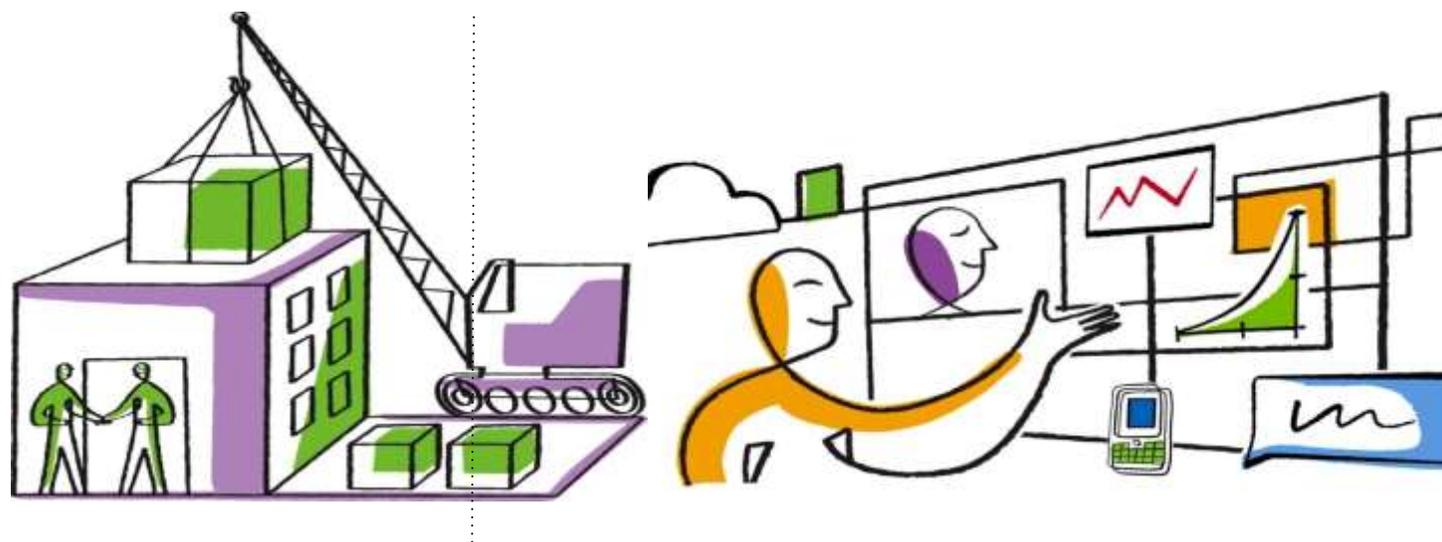
Everyone has to think like a service provider.

Cloud cost and flexibility for businesses

Self-Hosting, Traditional IT

Actual Demand

Customer Dissatisfaction

Waste

Predicted Demand

Resources

Rigid

Public Cloud

Cloud Compute

Actual Demand

Resources

Elastic
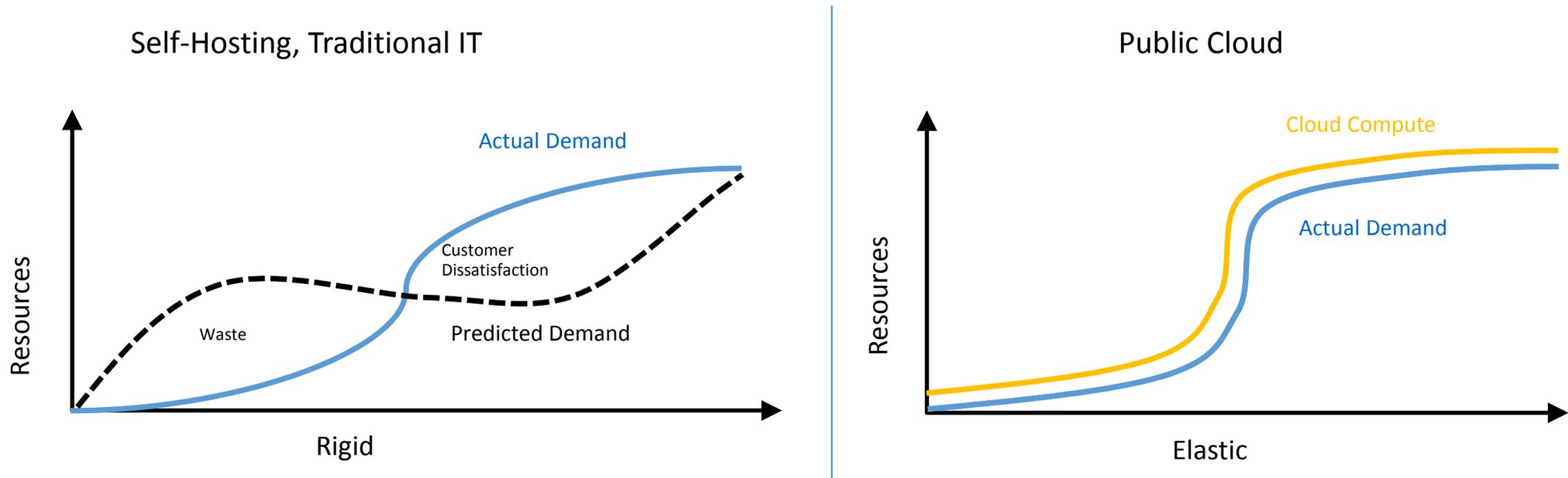
With performance, availability, and control???

Barriers to cloud adoption
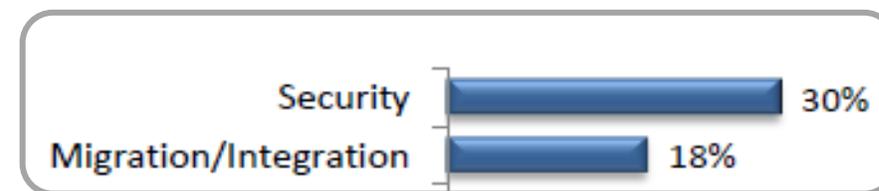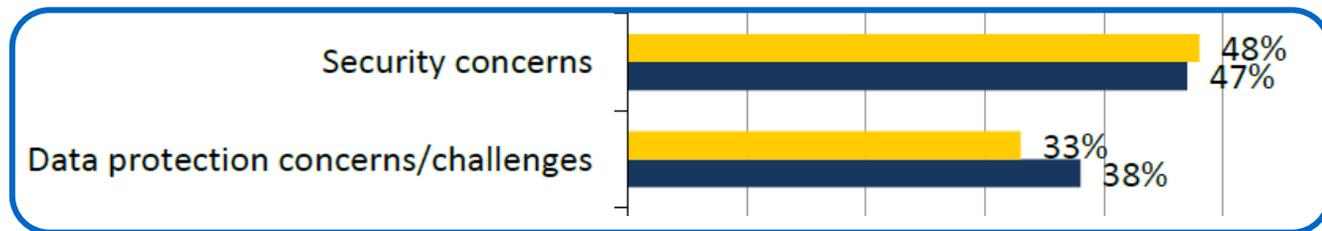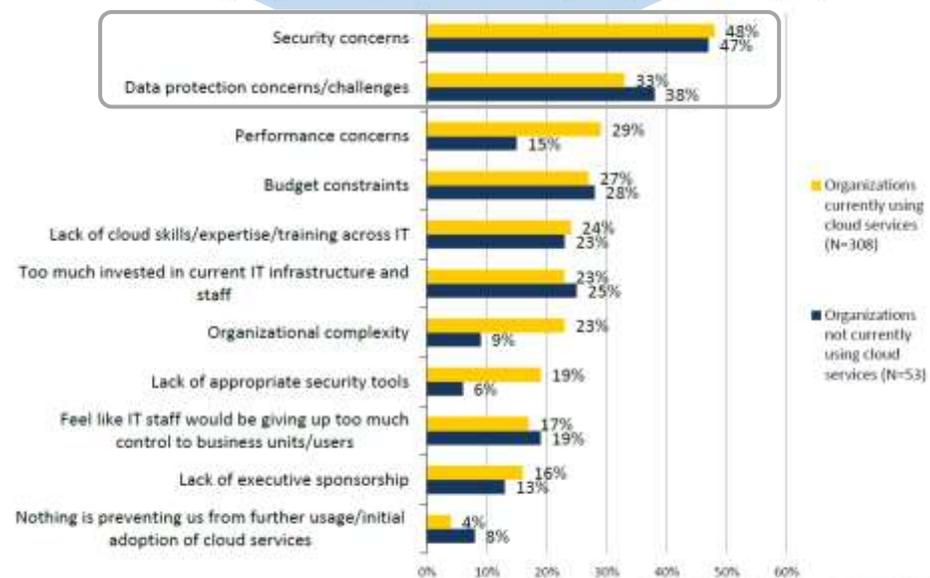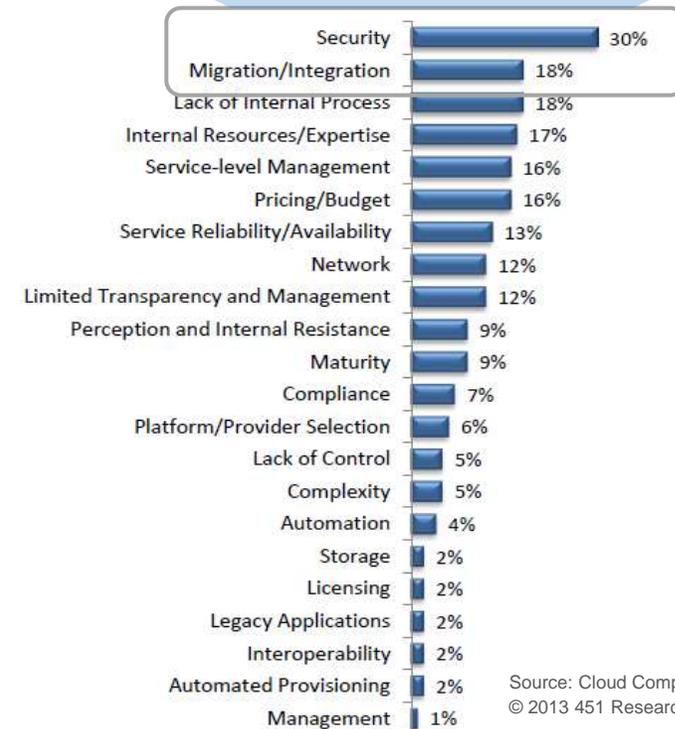
How businesses save money with cloud?

*Pure AWS Cloud vs. On-premises Infrastructure:

Pie chart:
- User Productivity, 6%
- Operating Income, 12%
- IT Staff Productivity, 28%
- Savings on Storage
- Savings on Hosting & Services, 10%
- Savings on Networking Equipment & Bandwidth, 4%
- Savings on Servers
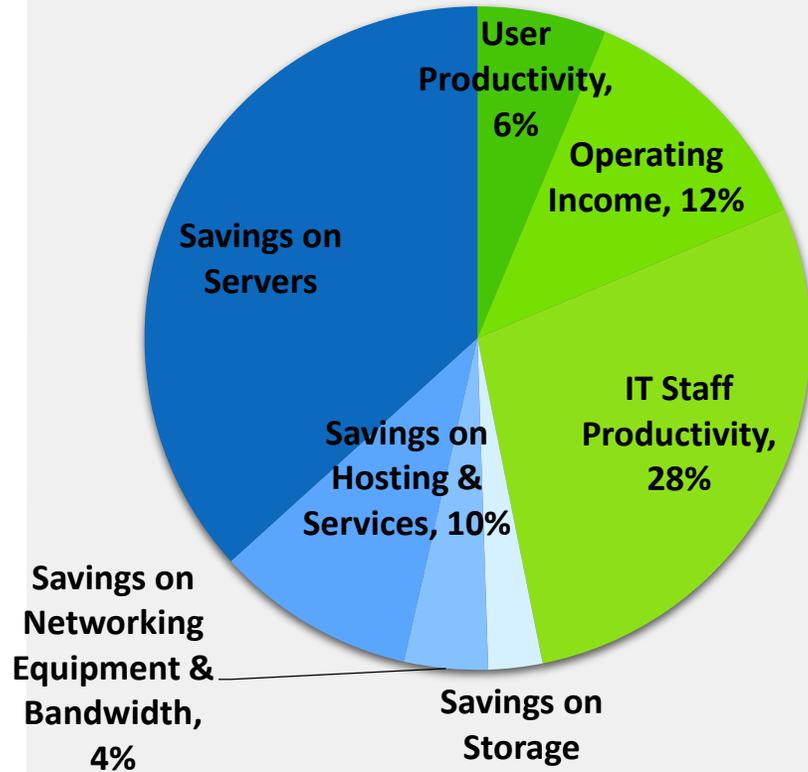
- Most cloud savings vs. on-premises are in the compute layer

- Savings are only half of the benefits customers receive from cloud

- Other benefits include: increased innovation, profits, and productivity

*Source: Total Economic Benefits of AWS by IDC, sponsored by AWS in 2012

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Needed: seamless cloud services

But hybrid data centers are difficult
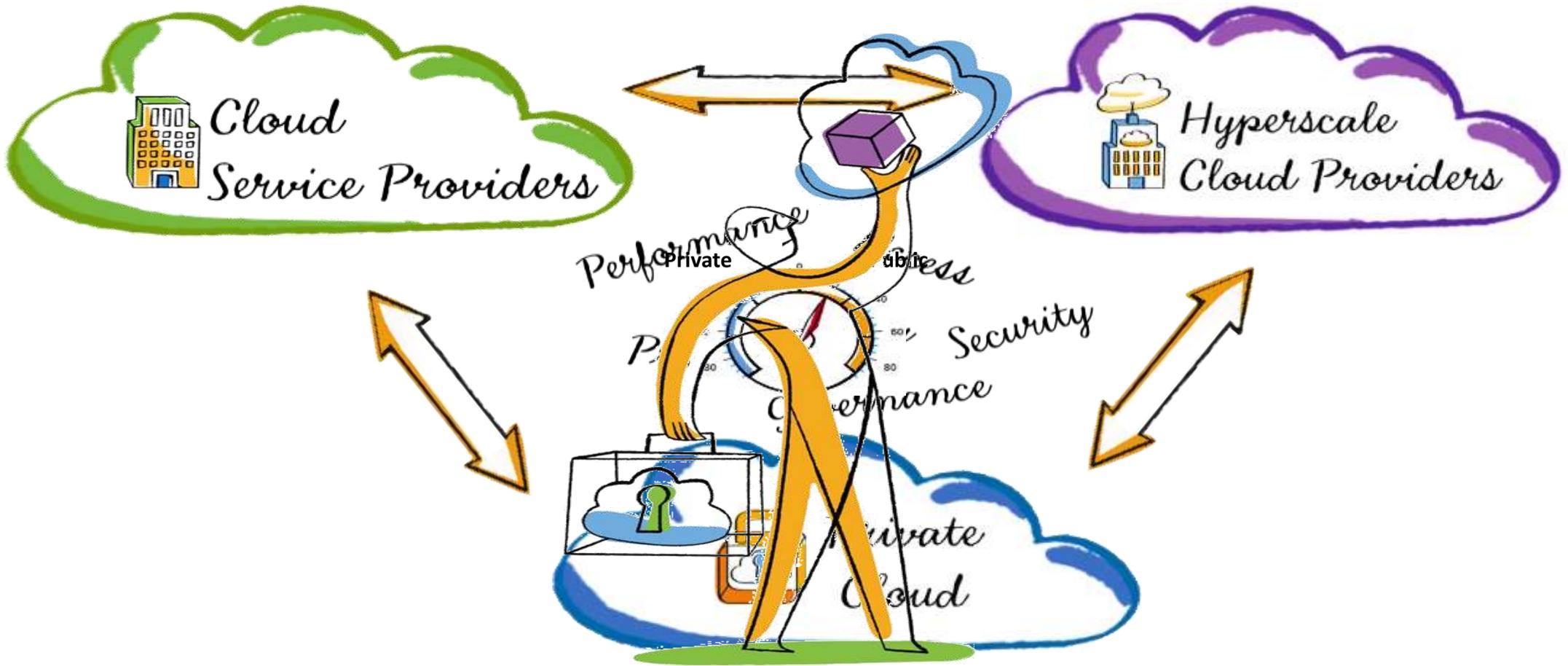
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From data center to cloud: Cloud ONTAP

Data Center

Cloud ONTAP

Cloud Manager
Manage and monitor cloud storage on site or directly in the cloud
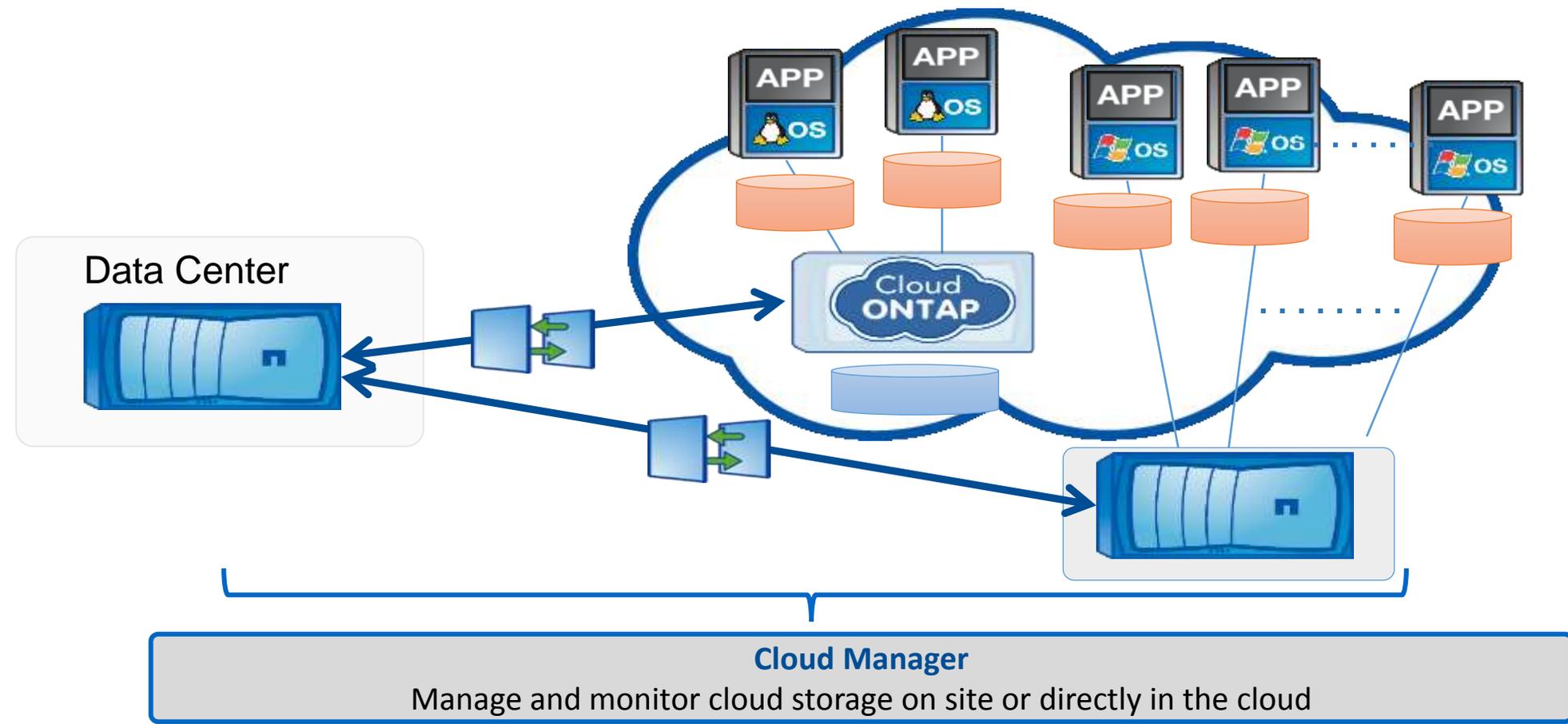
Cloud benefits, enterprise storage

- Secure, high-performance integration between NetApp and many clouds

- Add new clouds, switch clouds in minutes without moving data

- Seamless data mobility between premises and NPS for Cloud

Dedicated Link

On Premises

Data Center
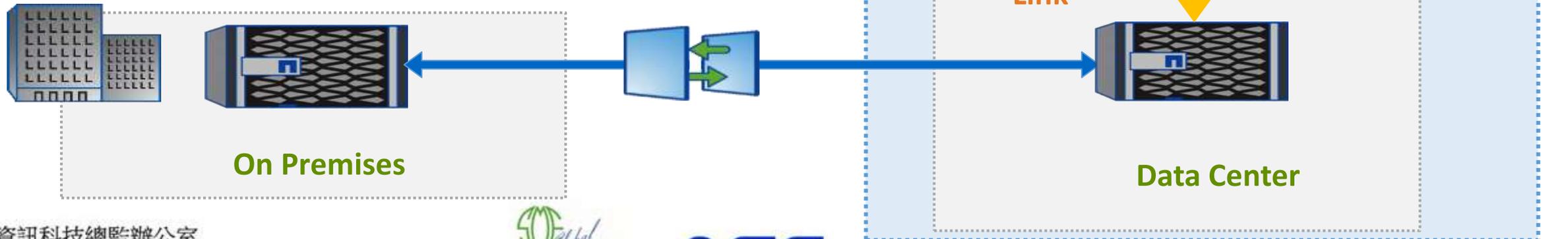
Benefits of Cloud ONTAP and NPS

**Most cloud solutions require a tradeoff between flexibility and control.
Both NPS for cloud and Cloud ONTAP give you more of both.**
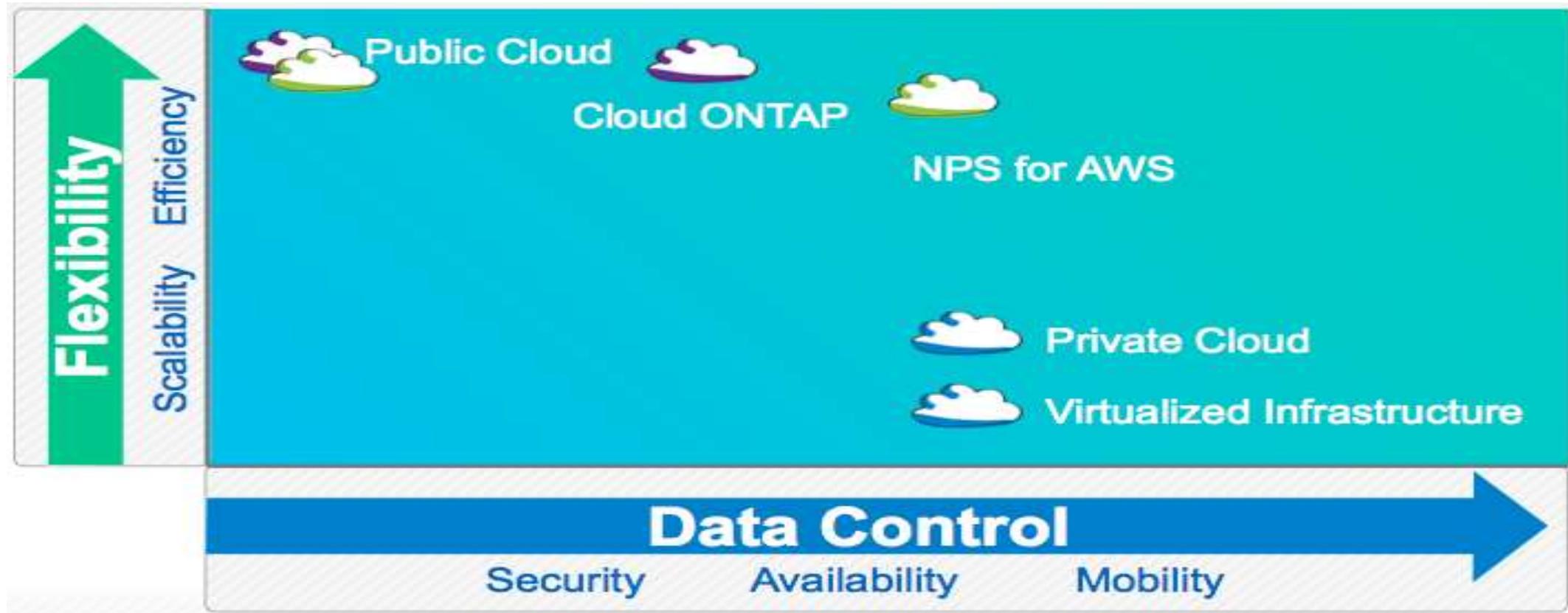
Seamless connections between cloud resources

NetApp is the only major storage vendor to offer a cloud data fabric and
a common data platform that provide seamless connections between cloud resources.
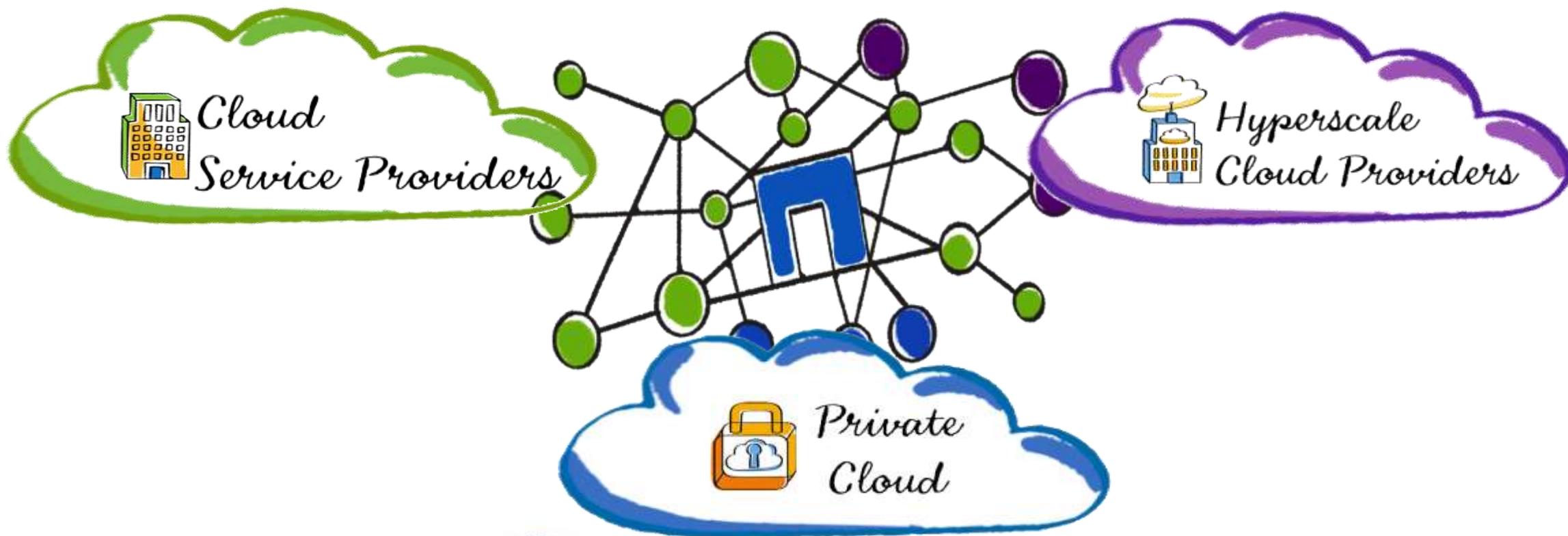
Positioning the right application environment

Workload characteristics to help choose which application environment best fits your applications.

| App Location	Application Properties and Benefits
On Premises	Application usage pattern and resource requirements are well known with longer term usage
Near the Cloud	Application has high governance requirements and/or high performance and capacity but with variable usage patterns
In the Cloud	For new or unknown application requirements or applications with rapid deployment of storage requirements to accommodate varied workloads

Top use cases for HRM & Accounting

- Cloudburst for peak workloads
- Enterprise workloads
- Disaster recovery
- Development and test
- Multiregion application continuity
- Data center migration and consolidation
- Performance business apps/data analytics
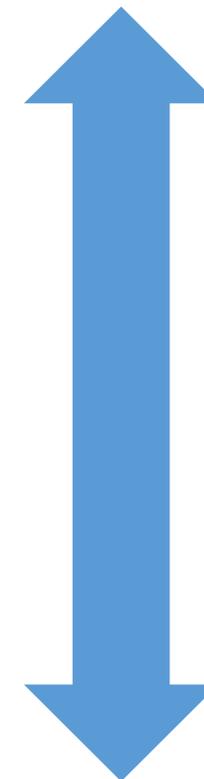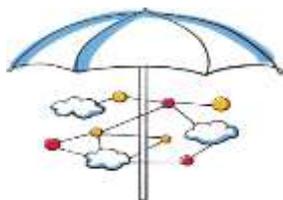
Data Stewardship

Cloud bursting and disaster recovery (DR)

- ## Best-in-class hybrid cloud

  - Red Hat OpenStack and NetApp® hybrid cloud solution

  - NPS for AWS hybrid cloud solution for cloud bursting and disaster recovery

  - Red Hat CloudForms for seamless management

  - Typhoon simulation, other HPC workloads

  - Up to 30% cost savings, data control

  - Red Hat Innovation Award 2014—**1st win in ASEAN**

High-Performance Computing Center (HPCC)

AWS

EC2 EC2 EC2

NetApp FlexClone®

Direct Connect Data Center

NTU HPCC   On Premises

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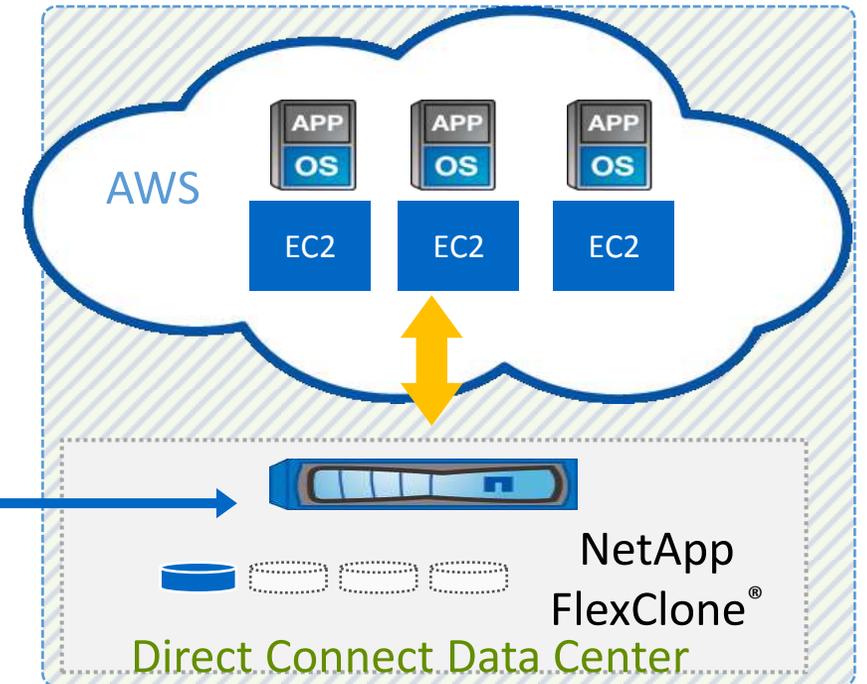
Enterprise workloads: SharePoint and SQL

- Oakland County responds to funding cuts

> "Our relationship with Blue River has changed the way we look at our future."
>
> — Phil Bertolini, Deputy County Executive/CIO

OAKLAND COUNTY MICHIGAN

G2G Cloud for Oakland
Microsoft Windows SharePoint Services and DR to start
AWS scalability with performance & data control of NetApp technology
Managed by Blue River

BlueRiver INFORMATION TECHNOLOGY

Microsoft SharePoint   Microsoft SQL Server

APP OS — EC2
APP OS — EC2
APP OS — EC2

Direct Connect Data Center

Mirror to U.S. West Region with NetApp SnapMirror® software

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Disaster recovery for ERP

- Midsize Manufacturing Company

U.S. East

- Reserved Instances
- AWS
- APP OS / APP OS / APP OS
- EC2 / EC2 / EC2

▪ 90% savings
▪ 0 physical DR servers
▪ 33% fewer network switches
▪ No DR hypervisor license
▪ 75% less DC space

Server

Network

APP OS / APP OS / APP OS — SAP

FAS

On-Premises Data Center

Amazon Direct Connect 10Gb

1Gb

FAS

FlexClone®

Direct Connect Data Center
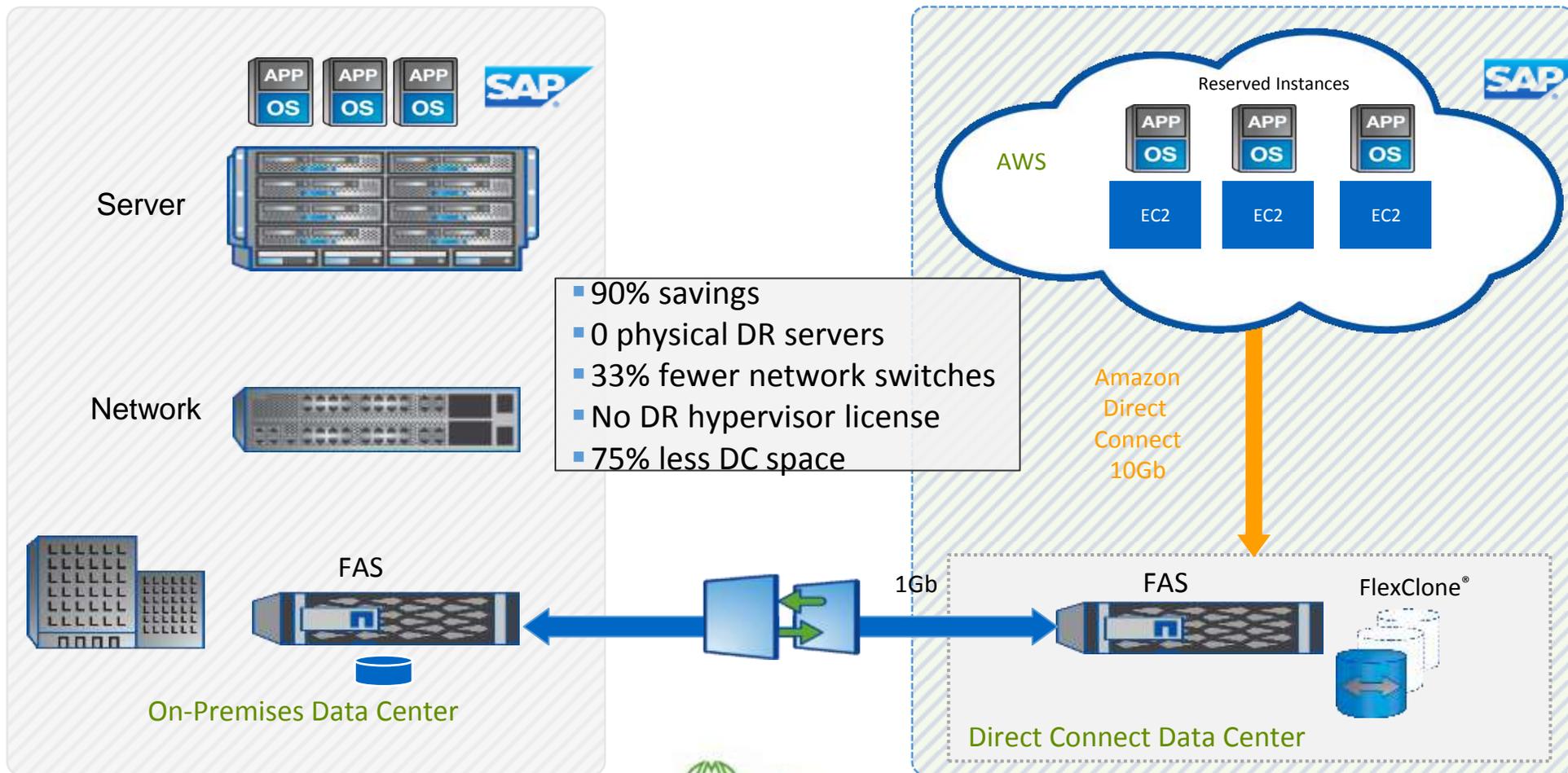
1. Critical data is replicated to NetApp in Equinix

2. Reserved instances are set up in AWS

3. Failure occurs at on-premises site

4. Bring up VM instances in AWS and connect to data on NetApp in Equinix

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Global Alliance
中小企國際聯盟

ASC

Dev/test, production, and multiregion DR

- Financial SW Co. Gains Efficiency for Payroll App
- "90% of the Benefits of Public Cloud with 10% Risk" – Architect

US West

AWS

APP OS | APP OS | APP OS

EC2 | EC2 | EC2

- Move 90% of VMs to EC2
- Save 70% server cost
- Cost-effective DR via SnapMirror®
- Maintain compliance processes
- Goal: Address ~10K VMs

Amazon Direct Connect 1Gb

FAS Dev | FAS Prod

Direct Connect Data Center

US East

AWS

Reserved Instances

APP OS | APP OS | APP OS

EC2 | EC2 | EC2

Amazon Direct Connect 1Gb

FAS DR

NetApp FlexClone®

Direct Connect Data Center

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Consolidation M&A

- Multinational Manufacturing and Financial Services Company

Thank you