

Making Effective Use of the Hybrid Cloud: Real-World Examples



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Enterprises are increasingly turning to cloud to drive agility and closely align IT resources to business needs. New or short-term projects and unexpected spikes in demand can be satisfied quickly and elastically with cloud resources, spurring more creativity and productivity while reducing the waste associated with over- or under-provisioning.

Figure 1) Cloud lets you closely align resources to demand.

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Explore

The Buzz from Microsoft Ignite 2015

NetApp was in full force at the recent Microsoft Ignite show in Chicago, and it was clear that NetApp's approach to hybrid cloud and [Data Fabric](#) resonated with the crowd. NetApp solutions such as NetApp Private Storage for Cloud are solving real customer problems.

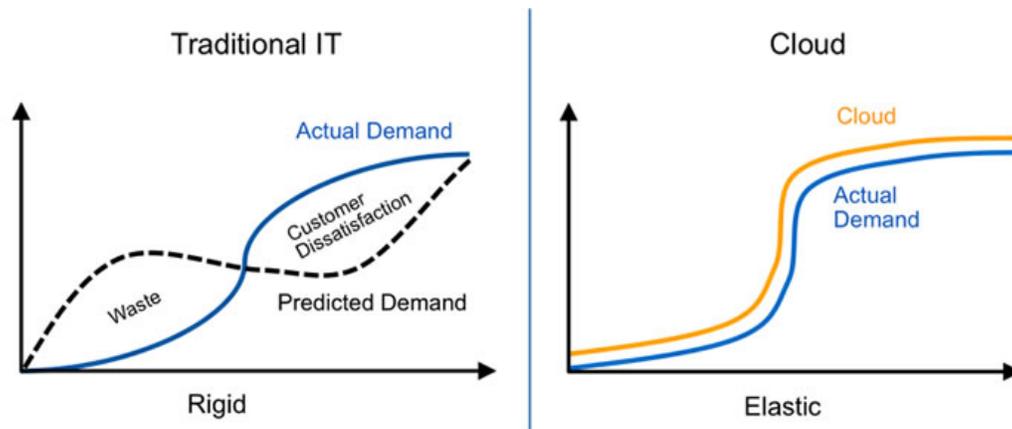
Hot topics at the NetApp booth included:

- [OnCommand® Shift](#). A revolutionary technology that allows you to move virtual machines back and forth between VMware and Hyper-V environments in minutes.
- [Azure Site Recovery to NetApp Private Storage](#). Replicate on-premises SAN-based applications to NPS for disaster recovery in the Azure cloud.

Check out the following blogs for more perspectives:

- [Microsoft Ignite Sparks More Innovation from NetApp](#)
- [ASR Now Supports NetApp Private Storage for Microsoft Azure](#)

- Four Ways Disaster Recovery is Simplified with Storage Management Standards
- Introducing OnCommand Shift
- SHIFT VMs between Hypervisors
- Infront Consulting + NetApp = Success



Source: NetApp, 2015

While the benefits are attractive for many workloads, customer input suggests that even more can be achieved by moving beyond cloud silos and better managing data across cloud and on-premises infrastructure, with the ability to move data between clouds as needs and prices change. Hybrid cloud models are emerging where data can flow fluidly to the right location at the right time to optimize business outcomes while providing enhanced control and stewardship.

These models fall into two general categories based on data location. In the first, data moves as needed between on-premises data centers and the cloud. In the second, data is located strategically near, but not in, the cloud.

Let's look at what some customers are doing with hybrid cloud in the real world, their goals, and the outcomes.

Data in the Cloud

At NetApp, we see a variety of hybrid cloud deployments sharing data between on-premises data centers and the cloud, providing greater control and flexibility. These deployments utilize both cloud service providers (CSPs) and hyperscale public clouds such as Amazon Web Services (AWS).

Use Case 1: Partners with Verizon for Software as a Service Colocation and integrated Disaster Recovery in the Cloud

For financial services company BlackLine, availability, security, and compliance with financial standards is paramount. But with the company growing at 50% per year, and periodic throughput and capacity bursts of up to 20 times baseline, the company knew it couldn't sustain its business model with on-premises IT alone.

Stringent requirements often lead to innovation. BlackLine deployed its private cloud infrastructure at a Verizon colocation facility. The Verizon location gives them a data center that is purpose-built for security and compliance. It enables the company to retain full control over sensitive data while delivering the network speed and reliability it needs. The colocation facility gives Blackline access to Verizon cloud services with maximum bandwidth and minimum latency. The company currently uses Verizon Cloud for disaster recovery and backup. Verizon cloud services are built on NetApp® technology, so they work seamlessly with BlackLine's existing NetApp storage.

To learn more about BlackLine's hybrid cloud deployment, read the [executive summary](#) and [technical case study](#), or watch [this customer video](#).

Use Case 2: Private, Nonprofit University Eliminates Tape with Cloud Integrated Storage

A private university was just beginning its cloud initiative and wanted to eliminate tape—and offsite tape storage. The university had been using Data Domain as a backup target in its environment, but capacity and expense had become a significant issue, and it didn't provide a backup-to-cloud option.

The director of Backup turned to a [NetApp SteelStore cloud-integrated storage appliance](#) to address the university's needs. A proof of concept showed that SteelStore™ was perfect. The on-site appliance has built-in disk capacity to store the most recent backups so that the majority of restores still happen locally. Data is also replicated to AWS, providing cheap and deep storage for long-term retention. SteelStore features deduplication, compression, and encryption, so it efficiently uses both storage capacity (both in the appliance and in the cloud) and network bandwidth. Encryption keys are managed on-premises, ensuring that data in the cloud is secure.

The university is already adding a second SteelStore appliance to support another location, and—recognizing which way the wind is blowing—the director of Backup has become the director of Backup and Cloud.

Use Case 3: Consumer Finance Company Chooses Cloud ONTAP to Move Data Back On-Premises

A leading provider of online payment services needed a way to move data generated by customer applications running in AWS to its on-premises data warehouse. [NetApp Cloud ONTAP®](#) running in AWS proved to be the

least expensive way to accomplish this.

Cloud ONTAP provides the full suite of NetApp enterprise data management tools for use with Amazon Elastic Block Storage, including storage efficiency, replication, and integrated data protection. Cloud ONTAP makes it simple to efficiently replicate the data from AWS to NetApp FAS storage in the company's own data centers. The company can now use existing extract, transform and load (ETL) tools for its data warehouse and run analytics on data generated in AWS.

Regular replication not only facilitates analytics, it also ensures that a copy of important data is stored on-premises, protecting data from possible cloud outages. Read the [success story](#) to learn more.

Data Near the Cloud

For many organizations, deploying data near the hyperscale public cloud is a great choice because they can retain physical control of their data while taking advantage of elastic cloud compute resources on an as-needed basis. This hybrid cloud architecture can deliver better IOPS performance than native public cloud storage services, enterprise-class data management, and flexible access to multiple public cloud providers without moving data. Read the recent white paper from the Enterprise Strategy Group, "[NetApp Multi-cloud Private Storage: Take Charge of Your Cloud Data](#)," to learn more about this approach.

Use Case 1: Municipality Opts for Hybrid Cloud with NetApp Private Storage for AWS

The IT budgets of many local governments are stretched tight, making it difficult to keep up with the growing expectations of citizens. One small municipality found itself in this exact situation, with aging infrastructure and a data center that not only was nearing capacity, but was also located in a flood plain.

Rather than continue to invest in its own data center infrastructure, the municipality chose a hybrid cloud using NetApp Private Storage (NPS) for AWS. Because NPS stores personal, identifiable information and data that's subject to strict privacy laws, the municipality needed to retain control of its data. NPS does just that, while opening the door to better citizen services, improving availability and data protection, and saving \$250,000 in taxpayer dollars. Read the [success story](#) to find out more.

Use Case 2: IT Consulting Firm Expands Business Model with NetApp Private Storage for Azure

A Japanese IT consulting firm specializing in SAP recognized the hybrid cloud as a way to expand its service offerings and grow revenue. By choosing NetApp Private Storage for Microsoft Azure, the firm can now offer a cloud service with greater flexibility and control over data versus services that store data in the cloud.

The new service is being rolled out first to support the development work of the firm's internal systems integration

engineering teams, and will later provide SAP development and testing, and disaster recovery services for mid-market customers in financial services, retail, and pharmaceutical industries.

Use Case 3: Financial Services Leader Partners with NetApp for Major Cloud Initiative

In the heavily regulated financial services industry, the journey to cloud must be orchestrated to address security, data privacy, and compliance. A leading Australian company recognized that cloud would enable new business opportunities and convert capital expenditures to monthly operating costs. However, with nine million customers, the company must know exactly where its data is stored. Using native cloud storage is not an option for certain data, and regulations require that the company maintain a tertiary copy of data and retain the ability to restore data under any circumstances. The company also needed to vacate one of its disaster-recovery data centers by the end of 2014.

To address these requirements, the company opted for NetApp Private Storage for Cloud. The firm placed NetApp storage systems in two separate locations: an Equinix cloud access facility and a Global Switch colocation facility both located in Sydney. This satisfies the requirement for three copies of critical data and allows them to take advantage of AWS EC2 compute instances as needed, with the option to use Microsoft Azure or IBM SoftLayer as an alternative to AWS without migrating data. For performance, the company extended its corporate network to the two facilities.

The firm vacated the data center on schedule, a multimillion-dollar cost avoidance. Cloud services are being rolled out in three phases. In the first phase, NPS will provide disaster recovery for the company's 12,000 virtual desktops. In phase two, NPS will provide disaster recover for enterprise-wide applications. In the final phase, the company will move all enterprise applications to NPS and AWS. NPS gives the company a proven methodology for moving production workloads to the cloud, enabling it to offer new services faster. Because the on-premises storage is the same as the cloud storage, making application architecture changes will also be faster and easier than it would be with other options. Read the [success story](#) to learn more.

NetApp on NetApp: nCloud

When NetApp IT needed to provide cloud services to its internal customers, the team naturally turned to NetApp hybrid cloud solutions, with a Data Fabric joining the pieces. The result is nCloud, a self-service portal that gives NetApp employees fast access to hybrid cloud resources. nCloud is architected using NetApp Private Storage for AWS, FlexPod®, clustered Data ONTAP and other NetApp technologies. NetApp IT has documented details of its efforts to help other companies on the path to hybrid cloud. Check out the following links to learn more:

- [Hybrid Cloud: Changing How We Deliver IT Services](#) [blog and video]
- [NetApp IT Approach to NetApp Private Storage and Amazon Web Services in](#)

- [Enterprise IT Environment](#) [white paper]
- [NetApp Reaches New Heights with Cloud](#) [infographic]
- [Cloud Decision Framework](#) [slideshare]
- [Hybrid Cloud Decision Framework](#) [infographic]

See other [NetApp on NetApp resources](#).

Data Fabric: NetApp Services for Hybrid Cloud

As the examples in this article demonstrate, NetApp is developing solutions to help organizations of all sizes move beyond cloud silos and unlock the power of hybrid cloud. A Data Fabric enabled by NetApp helps you more easily move and manage data in and near the cloud; it's the common thread that makes the uses cases in this article possible. Read [Realize the Full Potential of Cloud with the Data Fabric](#) to learn more about the Data Fabric and the NetApp technologies that make it possible.

Richard Treadway is responsible for NetApp Hybrid Cloud solutions including SteelStore, Cloud ONTAP, NetApp Private Storage, StorageGRID Webscale, and OnCommand Insight. He has held executive roles in marketing and engineering at KnowNow, AvantGo, and BEA Systems, where he led efforts in developing the BEA WebLogic Portal.

Tom Shields leads the Cloud Service Provider Solution Marketing group at NetApp, working with alliance partners and open source communities to design integrated solution stacks for CSPs. Tom designed and launched the marketing elements of the storage industry's first Cloud Service Provider Partner Program—growing it to 275 partners with a portfolio of more than 400 NetApp-based services.

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