

Will Your Data Benefit from a Cloud Consumption Model?

On-Demand Strategies Align Spending with Business Needs,
Both On-Premises and in the Cloud

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1. A New Landscape for IT Leaders

With the advent of cloud computing, IT leaders are faced with a variety of new options for deploying and consuming IT resources. What used to be a relatively straightforward lease or buy decision for servers, storage, and networking gear has expanded to include considerations such as:

- Pay-as-you-go service offerings that you can purchase in increments ranging from minutes to hours
- Subscription services that enable flexible scale and procurement, but also require longer-term commitments lower per-unit pricing and reserved resources
- On-demand agreements that enable you to deploy on-premises hardware using an operating expenditure (opex) model

This eBook examines some of the reasons for moving to a consumption model for IT and reviews the three types

of NetApp storage offerings that can be purchased using this type of model: cloud data services, cloud connected storage, and on-demand storage services that run on hardware and software deployed within your own facilities.

“Business units embracing cloud and digital business drive the move toward agility, scalability, and on-demand commitment operating expenditure (opex) models. Hybrid compute and storage models are uniquely able to meet the needs of these evolving business models.”

—Gartner 2016 Strategic Roadmap for Data Center Infrastructure, 03 June 2016

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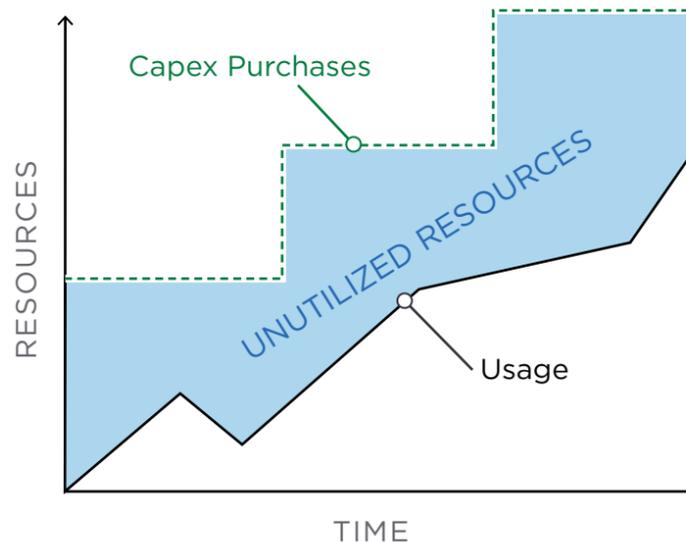
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2. When to Consider a Consumption Model

IT organizations have typically determined how much equipment to lease or buy by estimating user demand over the expected life of their hardware platforms—usually between three and seven years—and taking into account financial considerations, such as depreciation policies, cost of capital, lease terms, and so on. Although this approach was manageable when dealing with individual applications, it became increasingly complex once virtualized environments were used to host multiple mission-critical applications.

Figure 1: Traditional IT consumption model.
Source: NetApp



When forecasting resource needs for multiple applications over a multiyear timeframe, many variables should be considered, such as:

- Which workloads will ultimately use the infrastructure?
- How variable are their usage patterns?
- What are the consequences of underprovisioning resources?
- What are the consequences of overprovisioning?

You don't want to make a purchase that's too small and have to go back and request more equipment on short notice. You also don't want to overspend and never achieve the utilization levels you expected when you started.

In fact, it may be impossible to accurately assess what resources you will need in the future. In the past, this has led most IT teams to err on the side of conservatism when planning for new equipment, which typically resulted in overspending on hardware and underutilization of resources as shown in Figure 1.

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3. The Impact of the Cloud

The cloud has transformed IT infrastructure from a capital component into a service. Hyperscalers such as Amazon Web Services (AWS) and Microsoft Azure have changed the way we look at infrastructure by redefining the data center and making it easy to purchase individual components on a per-use basis.

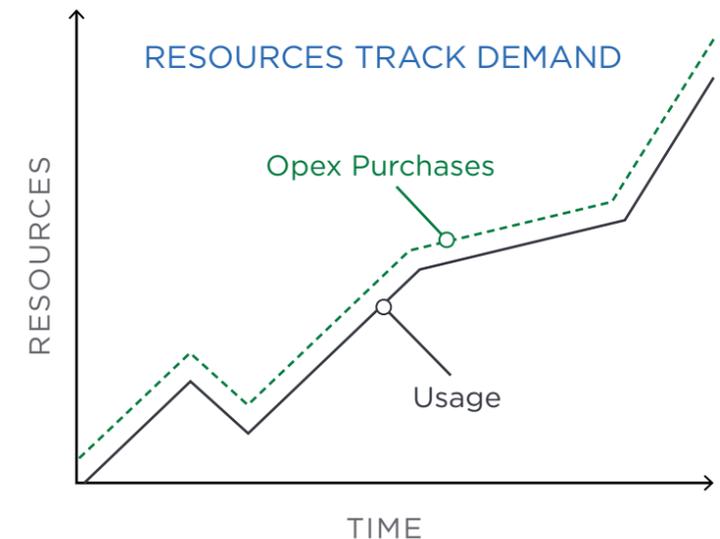
This new model changes the economics of deploying applications and services by providing organizations with a more flexible way to acquire resources. Cloud users can purchase what they need, when they need it, and dynamically adjust as business demand changes.

Take, for example, an application development environment. If a team wants to spin up a new environment for their dev/test needs, they can instantly do so based on their expected usage. If their initial assessment of resources was inaccurate, they can adjust on-the-fly by either purchasing more resources or turning off those they don't need.

This flexibility means they pay only for what they need, when they need it. They no longer have to take the risk of requesting resources and underutilizing that environment if their usage patterns are lower than expected. They also do not have to worry about going through a complete procurement process for new resources if their usage is higher than expected or grows rapidly. They can dynamically add or subtract infrastructure as needed.

Figure 2 shows the benefits of using the flexible consumption model approach enabled by the cloud.

Figure 2: Cloud consumption model. Source: NetApp



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4. On-Demand Options for Data Management

The cloud model has changed how IT leaders and their business stakeholders think about infrastructure. Cloud customers can now choose to consume hardware and software resources in many different ways depending on their requirements. Options include consuming by the minute or by the hour, purchasing longer term leases or subscriptions, or even moving traditional data center purchases to an on-demand model.

Short-Term Rental Model

The option to “rent” resources as-a-service was introduced by cloud providers and is one of the defining characteristics of the cloud model. Pay-as-you-go pricing enables experimentation and evaluation with no commitment and little risk. When resources are only needed for a short period of time, they can be consumed by the minute, by the hour, or even on a transaction-by-transaction basis. Renting resources can lower risks and satisfy urgent timelines even when used for longer term projects. You can get applications running rapidly, evaluate their success, and then

“One key shift that cloud computing as a style of computing brings, along with its many associated platform services, is the promise of not only doing things better, but also doing entirely new things.”

—Gartner 2016 Strategic Roadmap for Data Center Infrastructure, 03 June 2016

consider the best options for meeting your longer-term resource needs.

Renting resources on-demand is valuable for short periods, but organizations pay a premium for this granularity and flexibility. If you plan to use the resources for months at a time, then purchasing by the hour can quickly become an expensive proposition.

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Longer Term Subscription Model

As cloud projects transition from experimentation into production, most customers seek to reduce costs and improve predictability and availability. Longer term subscriptions increase your level of financial commitment in return for lower rates and other benefits. With an up-front commitment that a customer will purchase resources for a given period, cloud service providers and IT vendors will typically offer lower per-unit rates for their infrastructure and software offerings, along with well-defined service levels and resource commitments, such as reserved capacity.

On-Demand Agreements

By substituting opex for capital expenditure (capex), you can free up capital for other IT investments, while still meeting your near-term demands. IT suppliers have begun to apply this new consumption approach to data center hardware and software, providing organizations with an option to consume and pay for on-premises resources on-demand, similar to a cloud service. With on-demand agreements, infrastructure hardware is preinstalled and available for immediate use—to meet both planned and unplanned capacity requirements. You pay only for the capacity consumed and the supplier monitors and meters your

environment, adding capacity as your applications require it, on-demand.

On-demand agreements combine a traditional, on-premises infrastructure model with true pay-as-you-go consumption. You get the resources you need, when you need them, with no price negotiation, no new contract to approve, and no extended procurement process.

On-Demand Solutions from NetApp

NetApp® offers on-demand solutions that can be deployed either in an on-premises data center or as part of a hybrid cloud design. These solutions provide you with options for where to deploy your applications so you can accelerate business outcomes while maintaining control over critical enterprise data. The following sections of this eBook provide a snapshot of three types of solutions:

- Cloud data services
- Cloud connected storage
- Customer premises solutions

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5. Cloud Data Services

NetApp cloud data services run on popular cloud platforms, such as AWS or Azure. They can be deployed as cloud-native solutions or integrated with on-premises resources as part of a hybrid design. They are offered on a subscription basis for both pay-as-you-go and long-term use cases.

NetApp ONTAP Cloud

NetApp ONTAP® Cloud is a software-only storage appliance that runs in AWS or Azure. It combines the power and control of an enterprise storage software solution with the convenience of a cloud service. With ONTAP Cloud, you can:

- Reduce your cloud data footprint with advanced storage efficiency features
- Replicate data center systems to the cloud for cost-efficient, off-site disaster recovery
- Increase DevOps agility with rapid workspace cloning

NetApp Cloud Control

The NetApp Cloud Control for Office 365 enables you to protect your Office 365 data in the event of accidental deletion

and from the consequences of ransomware or malicious intent. The NetApp Cloud Control service gives you a simple way to back up your data to the location of your choice: either in Cloud Control provided storage or your own storage location. This comprehensive solution covers Exchange Online, SharePoint Online, and OneDrive for Business.

NetApp Cloud Sync Service

NetApp Cloud Sync is a hybrid cloud data management service that enables seamless and secure synchronization of data between on-premises storage and AWS Simple Storage Service (S3), reducing transfer times from hours to minutes. You benefit from a continuous sync capability that effectively minimizes the time it takes to get your data to AWS as it:

- Provides rapid and secure data synchronization with AWS S3
- Automates cloud-based analytics for on-premises and cloud-based datasets
- Continuously converts and copies file-based data to S3 objects

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6. Cloud Connected Storage

NetApp cloud connected storage solutions make it easy to integrate your data center infrastructure with on-demand services from the industry's leading cloud providers.

NetApp Private Storage for Cloud

NetApp Private Storage (NPS) for Cloud is a data storage solution that puts your data next to the cloud and connects to hyperscalers such as AWS, Azure, IBM Bluemix and other cloud providers' compute facilities through the Equinix Cloud Exchange. The connection to these clouds can be made through Direct Connect (Amazon), ExpressRoute (Microsoft), Direct Link (Bluemix), or any other vendor's connectivity solutions from an Equinix data center.

By keeping your data next to—rather than in—the cloud, an NPS for Cloud approach helps mitigate data privacy and sovereignty issues. This approach enables companies to maintain mastery over their data and provides a simple way to comply with privacy regulations while benefiting from the advantages of the cloud compute services.

NetApp Private Storage as a Service

NPS as a Service provides all of the benefits of NPS for Cloud but without the need for a capital expenditure. Setting up service is easy. You can start small and scale up as your business grows, adjusting your compute and storage resources on the fly in line with your business needs.

AltaVault Cloud-integrated Backup

NetApp AltaVault™ cloud-integrated storage enables customers to securely back up data to dozens of popular cloud services at up to 90% lower cost compared with on-premises solutions. AltaVault enables IT organizations to tap into cloud economics while preserving their investments in existing backup infrastructure and meeting backup and recovery SLAs.

- Inline deduplication and compression deliver data-reduction ratios up to 30:1
- Integrates with your existing backup software
- Data encryption at-rest and in-flight reduces risks

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7. Customer Premises Solutions

NetApp offers several consumption-based options to help IT organizations transition to an opex model for their on-premises data management hardware and software.

NetApp OnDemand

NetApp OnDemand is a program that combines the benefits of on-premises infrastructure, the flexibility of a usage-based consumption model, and the agility of the public cloud. The infrastructure is NetApp owned but can be managed by your own IT team so that you can maintain strong control and governance of your data environment.

The OnDemand program begins with a NetApp Service Design Workshop in which you work with data management experts to identify the portfolio solutions that can meet your service level objectives. Once the equipment is installed, a customer:

- Pays for resources on a monthly basis
- Has complete responsibility for the data
- Performs all data management tasks, including backups, disaster recovery, and so on

Customers also have the option of purchasing NetApp Managed Services to further streamline operations and improve business results.

Software Subscription Services

In addition to its OnDemand program for turnkey storage systems, NetApp offers subscription options for two of its on-premises, data management software offerings: OnCommand Insight and StorageGRID Webscale.

OnCommand Insight

NetApp OnCommand® Insight management software delivers consistent insight across your data center and enables you to monitor and manage a multivendor environment, including both cloud-based and on-premises infrastructure. OnCommand Insight is available as a subscription service for both six- and twelve-month terms. A utility pricing option provides the flexibility to pay-as-you go for usage over and above your base level as needed.

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StorageGRID Object Storage

NetApp StorageGRID® Webscale is a software-defined object-based storage solution. It maximizes your control over rich content data and metadata while enabling its secure, fluid movement across on-premises and public cloud infrastructures. This makes it ideal for managing large-scale data repositories, such as media files, unstructured web data, and enterprise-wide archives.

StorageGRID Webscale software can be purchased on a subscription basis when deployed with third-party white box storage or as part of a turnkey NetApp solution. This pricing model allows customers to start with a minimal upfront investment and then scale flexibly and as their storage footprint grows.

- Subscriptions are licensed by used capacity rather than raw provisioned capacity
- Start as small as 10TB and add capacity as needed
- Convenient six-month subscription terms



8. Next Steps

When moving to an on-demand model, it's important to have choices for how and where you can deploy applications and services across your hybrid cloud environment. NetApp makes it easy to evaluate your options by providing

free trials for many of our cloud-based, cloud-connected, and on-demand storage options. IT teams can get started by visiting the links in the table below.

Deployment Scenario	NetApp Solutions	Typical Use Cases	How to Get Started
Cloud Data Services	<ul style="list-style-type: none">• ONTAP Cloud• Cloud Control• Cloud Sync	<ul style="list-style-type: none">• DevOps, DR• SaaS Backup• Analytics	Free Online Trials with AWS and Azure
Cloud Connected Storage	<ul style="list-style-type: none">• NPS for Cloud, NPS-as-a-Service• AltaVault	<ul style="list-style-type: none">• Production Apps, DevOps, DR, Analytics• Backup, Archive	Free Online Trials for NPS and AltaVault
Customer Premises Solutions	<ul style="list-style-type: none">• All-Flash & Hybrid Storage Systems• StorageGRID Software• OnCommand Insight Software	<ul style="list-style-type: none">• Production Apps• Backup, Archive, Secondary Storage• Multivendor Storage Management	Learn About NetApp OnDemand