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ESG WHITE PAPER

Pay-per-use with NetApp Keystone Flex Subscription

NetApp Is Simplifying IT Infrastructure Buying, Saving Organizations Time and Money

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Introduction

Pay-as-you-go procurement models for IT resources are on the rise, representing part of a larger movement to simplify IT and reduce risk.

This shift is fortunate because traditional, capital-centric storage purchase lifecycles often benefit vendors more than their customers. For example, typical three-year storage refreshes consume IT staff time in non-strategic ways as they evaluate, justify, procure, test, install, and tune new and upgraded storage to try to achieve their organization's capacity, performance, functionality, and cost objectives. Ultimately, responsibility falls to the organization, not the vendor, to accurately forecast its capacity, performance, and functionality objectives three years out (or more). And if, or accurately, when, reality fails to align with those predictions, the burden again falls to the organization to fix the situation.

The burden of this traditional, capital-centric infrastructure purchasing model was manageable when IT environments were smaller, application environments were more predictable, and IT staffs were larger and more specialized. Modern IT, however, is defined by massive, distributed infrastructure environments that span multiple data centers, cloud providers, and edge locations.

Additionally, problematic skill shortages in technical roles are rampant. The increasing demands of a digital business are fueling higher levels of infrastructure design and infrastructure spend, increasing burdens on technical talent, and forcing organizations to accelerate IT rollout timelines.

In the modern era, IT is no longer a cost center. It is vital to achieving new revenue opportunities. IT should be a competitive differentiator, but when it isn't, it's an inhibitor to the business. Technical and business leaders can play a key role in alleviating these problems and accelerating innovation by evaluating and using new payment models that simplify and accelerate new technology adoption, while reducing burdens on personnel. The NetApp Keystone Flex Subscription service is a great example of such a model. It offers cloud storage on and off premises, with payment plans that fit the needs of a business.

Pay-as-you-go Pricing Frees up Critical IT Resources

Industry-wide forces are driving interest in pay-per-use storage—public cloud services in particular are encouraging adoption of these models.

Nearly two-thirds (64%) of IT decision makers surveyed by ESG believe that IT is more complex today than it was just two years ago. In fact, mature digital organizations are *three times more likely* than organizations without digital transformation initiatives in place (29% versus 9%) to say that IT has become significantly more complex today.[1] Mainly, the complexity is driven by increased diversity in applications and technology.

Hiring more people to accelerate operations is just not possible due to problematic shortages of IT/technical talent. About one-third of senior IT decision makers surveyed by ESG reported that they are

Strong Interest for Pay-per-use

54%
of surveyed IT decision makers preferred something other than the traditional payment model.

53%
categorized half or more of their storage spending as "pay-per-use."

66%
saw similar pricing for pay-per-use models or a net cost advantage.

[1] Source: ESG Master Survey Results, *2020 Technology Spending Intentions Survey*, February 2020.

dealing with staff shortages in the areas of IT architecture/planning (cited by 32%) and/or cloud architecture/planning (cited by 33%).[2]

In response to the skills-shortage situation, IT organizations have shifted their hiring practices away from domain-specific expertise (such as storage admins) toward IT generalists instead—62% of storage decision makers reported to ESG that most of their IT organization's expected staff hiring will be for IT generalist positions as opposed to domain experts.[3]

Forecasting infrastructure demands is becoming more difficult as application environments scale and become more diverse, while finding talented staff with the experience to forecast and design IT architecture also becomes more difficult, to the point that the majority of IT organizations have shifted hiring away from domain experts.

Increased Adoption of Pay-per-use Models

ESG custom research recently conducted for NetApp highlights the increased interest in and adoption of pay-per-use models. The research found that:

- 54% of surveyed IT decision makers preferred something other than the traditional payment model.
- 53% categorized half or more of their storage spending as "pay-per-use."
- 66% saw similar pricing for pay-per-use models or a net cost advantage. (Of course, it is worth remembering that accurate cost forecasting continues to be challenging.)

There are several reasons why organizations stay with traditional payment models. Those reasons are due more to process restrictions than desire:

- 43% have a formal policy in place to procure IT products via that traditional consumption model.
- 33% said they view pay-per-use as too expensive.
- 31% said their current budget structure makes it too difficult to leverage pay-per-use pricing.

But without question, the pay-per-use model does have benefits. They include:

- Greater flexibility in terms of infrastructure options.
- Increased ability to regularly adjust forecasts and spending based on need at a given time.
- Shifting of risks to the vendor and away from the organization.
- Decreased burden on scarce IT personnel resources.

Choosing Between Traditional and Pay-per-use Procurement Models

The following table can help organizations self-select which pricing model is right for them (see Table 1).

[2] ibid.
[3] Source: ESG Master Survey Results, *2019 Data Storage Trends*, November 2019.

Table 1. Selecting Between a Traditional and Pay-per-use Procurement Model

TRADITIONAL CAPITAL PROCUREMENT MODEL	PAY-PER-USE MODEL
Tends to be leveraged by older companies Companies older than 20 years are 1.8x more likely to believe that traditional purchasing offers a cost advantage (33% vs. 18%)	**Tends to be leveraged by younger companies** Companies 20 years or younger are 1.75x more likely to already procure some on-premises storage via a pay-per-use model (58% vs. 33%)
Tends to be more suitable for predictable or unchanging application environments	**Tends to be more suitable for more dynamic application environments** For example, environments marked by strong DevOps activity and multiple application types
Tends to be more suitable for organizations with predictable data growth	**Tends to be more suitable for organizations with rapid data growth rates that are difficult to predict**
Tends to be more suitable for organizations that are "on-premises first" or expect few cloud migrations/initiatives in the future	**Tends to be more suitable for organizations that are "cloud or hybrid cloud first" or expect multiple cloud migrations/initiatives in the future**

Source: Enterprise Strategy Group

NetApp Keystone Flex Subscription

The NetApp Keystone Flex Subscription service offering is a pay-per-use model that features a variety of characteristics that make it highly appealing to organizations looking for such an approach:

- Organizations can select a service tier that is appropriate for their performance requirements (e.g., their I/O per second (IOPS) requirements or their latency requirements), from a range of service offerings. NetApp offers multiple options from extreme performance to value tiers.
- Flex Subscription offers a range of capacities and timeframe options, starting at 100 tebibytes (TiBs) with a minimum 12-month commitment.
- NetApp ensures a 99.999% availability SLA.
- Organizations commit to a capacity level, and then pay based on any usage that exceeds that committed capacity. NetApp knows that accurate capacity forecasting is difficult, so it charges the same rate as the committed capacity level for any usage up to 20% over the committed level. This gives organizations flexibility by simplifying their planning and keeping infrastructure costs lower and somewhat more predictable.
- Flex Subscription can span infrastructure deployed within the data center, co-location data center environments, and public cloud services.
- The title sits with NetApp.
- All Flex Subscription services include support for FlexVol and FlexGroup and support multiple protocols, clones, snapshots, and encryption capabilities.

Figure 1 shows the NetApp Keystone Flex Subscription tier options.

Figure 1. Flex Subscription Tier Options

	File and Block						Object	Block		
	Extreme	Extreme w/data tiering[2]	Premium	Premium w/data tiering[2]	Standard	Value	Object	Extreme	Premium	Standard
Workload Type	Analytics, databases		VDI, virtualization apps, SW dev		File shares, web servers	Archive, Backup targets	Media repository, archiving	HPC	Video surveillance	Backup
Target IOPS/TiB	6,144	6,144[1]	2,048	2,048[1]	128	N/A	N/A	N/A	N/A	N/A
Max IOPS/TiB	12,288	12,288[1]	4,096	4,096[1]	512	N/A	N/A	5,500	4,000	N/A
Max throughput MBps (32KB/IOP)	384	384[1]	128	128[1]	16	N/A	N/A	43	31	N/A
Latency	<1 ms	<1 ms[1]	< 2 ms	< 2 ms[1]	<17 ms	N/A	N/A	< 0.5 ms	<0.5 ms	N/A
Minimum capacity	100TiB*^						1 PiB	100 TiB	100 TiB	300 TiB
Protocols	NFS, CIFS, iSCSI, FC						S3	FC, iSCSI		

* Minimum one-year term and 100TiB of storage.
^Channel led opportunities: Starts with 15TiB for Extreme

[1] Performance SLOs are applicable for data in hot tier
[2] Max allowed data in hot tier: 25%

Source: NetApp

Flex Subscriptions also offer optional services allowing organizations to select hybrid cloud capabilities and the right level of data protection based on their specific requirements. Options include:

- Hybrid Cloud Services Subscription - Flex Subscription is capable of spanning hybrid cloud environments with the ability to integrate NetApp technology deployed on public cloud services. Users will still need to procure the underlying storage service directly from their cloud provider. With Flex Subscription, NetApp offers one orchestration tool for creating, provisioning, migrating, and managing storage on- and off-premises with a single dashboard for visibility. As a result, organizations can leverage Flex Subscription to simplify the payment of hybrid cloud resources for multiple use cases, including: bursting to the cloud, tiering or migrating data to and from the cloud, backing up to the cloud, and replicating to the cloud for disaster recovery.

- Data Protection Basic Services Subscription –This services option includes backup with SnapVault and disaster recovery with SnapMirror. The service requires additional storage for the replicated data, and NetApp offers the flexibility to leverage storage that is either part of the Flex Subscription service or use already purchased and owned storage for that additional storage deployment. Whether as part of Flex Subscription or purchased and owned, either NetApp storage deployment can serve as the replication source or the target. As part of this service, snapshots for backup purposes are taken every four hours, replicated every 24 hours, and retained for 7 days. For disaster recovery, snapshots are taken every hour, replicated every four hours, and retained for 7 days. With data protection essential for any production workload, organizations leveraging Flex Subscription should strongly consider adding this data protection service option.

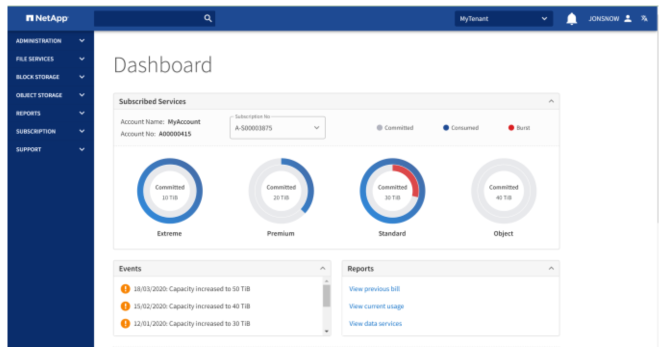
- Data Protection Advanced Services Subscription – This service option is effectively an add-on to the Data Protection Basic Services subscription option that adds MetroCluster capability. This service is designed to provide high availability and ensure that applications stay available even in the event of a site outage. This option should be a consideration for any mission-critical applications.

- Automated Tiering Services Subscription – With Flex Subscription, users can reduce storage costs with automatic data tiering from performance storage tiers to lower cost storage. With this capability, infrequently accessed data is automatically tiered to lower cost storage either on premises or in the cloud of your choice. NetApp supports tiering to AWS S3, Azure Blob, or Google GCP. This service delivers the necessary data movement as well as the on-premises storage. Similar to the hybrid cloud services, users must still procure the cloud storage directly from their cloud provider if they choose to tier to the cloud.

The management dashboard enables subscribers to provision storage; set data protection policies; monitor committed capacity and usage; review daily burst capacity, usage, and billing; and request more capacity or additional storage services.

Subscribers receive alerts and notifications of capacity changes, and they gain visibility into monthly and historical billing.

NetApp Keystone Flex Subscription Dashboard

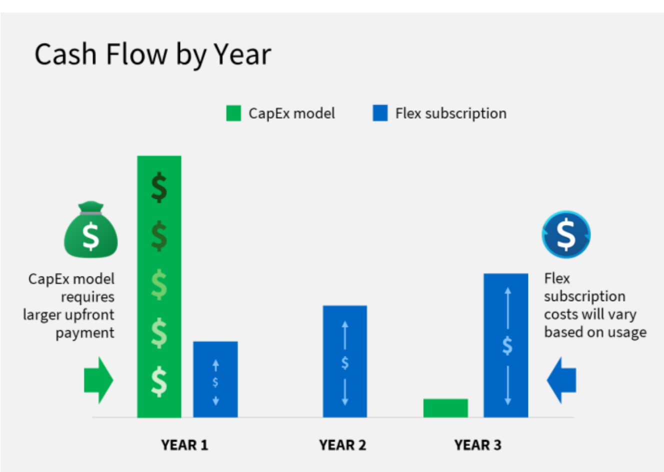


Source: NetApp

NetApp offers Active IQ integration for Flex Subscription as a way for users to view Flex Subscription details along with information on any other NetApp infrastructure that they own. Active IQ provides a single dashboard view with visibility into capacity usage as well as trend data with the ability to create detailed reports. This visibility spans both on-premises and the public cloud infrastructure. Users can also manage their Flex Subscription via Active IQ with the ability to order new services for their subscription or update the capacity for existing services.

For subscribers who prefer not to perform infrastructure operations, they can opt to either allow NetApp to fully operate the Flex Subscription service offering or have their certified NetApp partner operate it. Subscribers can also choose to operate the infrastructure themselves, if desired.

Making the Comparison Between the NetApp Options



Flex Subscription is just one of several options NetApp offers for procuring infrastructure. It also offers the traditional capital-centric (CapEx) model and traditional leasing options. With a traditional CapEx model, infrastructure procurement typically requires a larger upfront payment, with the option for smaller payments in the future to extend maintenance. Flex Subscription as an alternative will require a lower payment upfront, and future payments vary based on usage.

While NetApp works to ensure that the two options deliver comparable costs, the option that ends up being less costly will likely depend on how accurate an organization can project its future storage demands. If the future demands are well understood, making a larger CapEx purchase upfront will likely provide the lower overall cost of infrastructure.

If future demands are less predictable, however, due to higher growth rates of data or variations in application types and needs, leveraging Flex Subscription can provide a lower cost option as NetApp ensures that the environment delivers on its service level agreements even as demands fluctuate. In other words, the CapEx model has the potential for delivering a lower overall cost, but Flex Subscription eliminates the risk that the initial design may not keep pace with application demands in future years.

Other considerations that would likely lead an organization to choose Flex Subscription include preferences for:

- A true OpEx/off-balance sheet treatment model. This is important when analyzing any internal debt covenants and company accounting practices.
- A true "as-a-service" model and moving away from purchasing large amounts of storage upfront, hoping to grow into it over time.
- Acting as an internal or external service provider and better aligning costs with actual usage.
- A short-term solution before migrating specific workloads to the cloud or repatriating workloads back from the cloud to on-premises.

The Bigger Truth

Some organizations will benefit most from a traditional payment model. Perhaps they want to own or lease their own assets, or maybe they operate under stringent security requirements that dictate no external monitoring and billing software can be used.

But for many other organizations, pay-per-use can be highly beneficial. NetApp Keystone Flex Subscription is a great option for any organization that is looking for alternatives to continually spend capital on storage infrastructure. This service delivers a seamless hybrid cloud experience, with far fewer monetary outlays necessary upfront.

By leveraging NetApp Keystone's mix of payment, subscription, and usage-based plans, organizations can increase their financial flexibility, reduce their financial risk, simplify their purchasing, avoid overbuying/over-provisioning capacity, alleviate their staff-shortage issues, and much more.

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