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The Future of
Storage Can Be
Seen in the Cloud

E-BOOK



YOUR CLOUD, YOUR WAY

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The Rise of Cloud Culture: All Enterprise Storage Is Becoming Cloud-Like

These days, it is easy to assume that the cloud is the answer for every IT requirement. However, today's typical enterprise storage environment is more likely a hybrid of one or more clouds, both public and private, alongside legacy and continually added storage technologies installed on premises.



The hybrid approach is not an indictment of the cloud, but rather an endorsement of cloud culture's impact on all storage. It is a direction informed by the many valuable lessons taught by the cloud. Thanks to the cloud, federal agencies are becoming more mature and savvy about aligning storage to their needs. The rise of cloud culture has radically increased expectations concerning the capabilities of storage. The enduring impact of the cloud will be that all enterprise storage, regardless of location, is going to be more cloud-like in terms of its elasticity, support for automation, enabling of self-service, and rapid deployment.

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When Cloud Is Not the Best Choice

In contrast to the strategy of going all-out for cloud, there are still reasons for a federal agency to keep some data off of cloud storage platforms. For example:

- Data regulation and data sovereignty requirements require retainment of large amounts of data on premises, where agencies can maintain maximum control over their data.
- The disparity of speed between on-premises storage and cloud solutions can be a barrier when networks slow the delivery of data from cloud storage to demanding high-performance computing workloads.
- In some cases, data stored in the cloud has been repatriated to on-premises systems when the cost of cloud services does not align with budgets as popular workloads scale to meet increased demand.

Choosing the right storage for the future is not a decision driven solely by place. It is the product of setting a new goal: enhancing an agency's flexibility by providing it with access to on-demand scalability for capacity, unlimited performance and agility, and dramatically simplified management. Today's decision-makers face new considerations as they adapt their storage to gain those benefits. Here are three ways to make the most of the emerging hybrid storage infrastructure.



1. Storage Technology That Achieves Cloud-Scale On Premises

Whether organizations are retaining data for analytics, applications, or regulatory reasons, they need appropriate places to put their exploding volumes of data. The cloud can offer seemingly endless storage, but federal agencies do have other options. For example, the Hitachi Virtual Storage Platform (VSP) 5000 series can provide up to 69PB of fast, enterprise-class NVMe data storage either on premises or as a private, tailored, virtual storage-as-a-service solution.

The emergence of such large-scale and high-performing storage technology frees an organization to make storage decisions based on what best fits the shape of its mission requirements. For example, many agencies have significant legacy data silos on premises that are difficult to manage, costly to maintain, and not up to the challenge of modern workloads. Yet, the data stored in these silos is also not appropriate to migrate to the cloud. This scenario no longer needs to be a barrier, as it is possible to achieve cloud-like scalability while retaining control over data.

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2. Storage as a Service (STaaS) – Where Opex Models Shine

Operating expenditure (opex) acquisition models like STaaS continue to lower costs while enabling data-driven organizations to take advantage of the latest storage technology. STaaS is another fast-growing trend highly influenced by the advantages of cloud. Platforms like the VSP 5000 offer a choice of consumption models via EverFlex from Hitachi that give customers all the benefits of the newest storage technology without the burdens of owning or managing the hardware.

Look for
elasticity that
allows increase
and decrease
of resources as
needed.

3. Powering Missions With Performance and Agility

How fast a federal agency operates and adapts is a crucial determinant of mission outcomes. In the past, scaling up the on-premises IT infrastructure to support new use cases such as analytics came at the cost of bottlenecks that slowed down overall performance. External cloud providers seemed attractive because they make it possible to buy more and more compute resources to keep pace with that need. Today, however, that is no longer the only choice. New technologies such as NVMe storage and storage-class memory (SCM) offer on-premises storage options that don't slow down at scale.

Data mobility will also be critical for enterprise operators. When you have multiple distributed clouds from various service providers and an active on-premises data center, it is vital that there also be connectivity. This capability must support efficient data movement between public clouds, private clouds, edge storage, storage in the core, and back again as requirements change. By including connectivity considerations in its evaluation, an agency gets in position not only for today's workloads but also future workflows, such as real-time analytics, that are very performance intensive.

In the past, federal agencies tended to overbuild storage architectures in anticipation of peak needs, which led to a lot of storage and compute capacity sitting idle. The cloud has helped organizations recalibrate. They now expect elasticity that lets them increase and decrease the resources they provision, and thus the associated expense, as needs change. Cost will be the determining factor for federal agencies when they shop for elasticity, which means they will be selecting from among service providers that are transparent about their rates. Decision-makers need to know what the bill will look like so the benefits of elasticity aren't offset by painful surprises.

Simplifying Storage Management – The Rise of the Storage Generalist

There are many reasons why organizations should simplify the management of their storage operations. Some are cultural. For example, the next generation of employees managing data may not be accustomed to getting their hands “dirty” by writing scripts and applying other specialist skills. In many cases, the people who wrote the scripts for legacy storage infrastructure may be gone, taking institutional knowledge with them. This cultural shift has led to the rise of the “storage generalist.” Visual consoles are essential because they make it easy for storage generalists to assemble workflows from preconfigured, automated storage procedures, enabling them to support new requirements without needing low-level configuration skills.

With proper automation, configuring storage can be as simple as a button push.



The cloud has recalibrated expectations for how fast and easy it should be to provision the things one needs. With proper automation, configuring storage can be as simple as a button push. Better still, another department could get the resources it needs entirely on its own through a self-service portal, freeing the storage staff to focus on developing new architectures to support future initiatives.

Storage Is Power

The cloud is essential not because it is a new destination but because it has redefined how IT approaches the puzzle of solving mission needs. The rigid doctrine of the old data center has given way to a cloud-informed world where rapid change in response to shifting demands, cost pressure, and new opportunities is the norm. Sometimes things are best done using the cloud services of Amazon Web Services (AWS) or Google. Other times, it may be more desirable to achieve goals on premises. Storage used to be defined by high costs and limitations. Cloud culture has taught us that the future of storage is about variable costs without limits. The cloud and STaaS have set new standards that say that the best storage decision is the one that positions storage as an enabler: capable of getting agency initiatives up and running quickly, smoothly, and with optimal performance characteristics.

Learn how Hitachi Vantara Federal can help you with infrastructure modernization and all aspects of modernizing your digital core.



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Hitachi Vantara Federal guides United States federal agencies from what's now to what's next in the digital domains that matter most: the data center, data operations, and digital transformation.

Hitachi Vantara Federal



Corporate Headquarters
11950 Democracy Drive, Ste 200
Reston, VA 20190 USA
hitachivantarafederal.com

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