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REGION FOCUS: WORLDWIDE

The Business Value of Nutanix Unified Storage


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Executive Summary

Infrastructure modernization is underway at more than 70% of enterprises going through digital transformation, and the need for a simple, flexible, and secure storage solution is on the rise. With unstructured data growing rapidly, legacy storage systems are weighing enterprises down and inhibiting them from creating a digitally transformed organization that can quickly and effectively respond to fast-changing business and application needs. For many information technology (IT) organizations, that means software-defined infrastructure.

For many enterprises, infrastructure modernization is also associated with other goals like improving IT infrastructure efficiency. Unified storage solutions that allow enterprises to consolidate workloads using different access methods onto a single storage platform promise improved administrative productivity as well as compelling economics. Newer storage technologies like NVMe, along with an increased ability on the part of software-defined offerings to handle the performance, availability, and security requirements of mission-critical workloads, have enterprises looking to replace legacy storage area network (SAN) and network attached storage (NAS) systems with more flexible, more scalable, and easier-to-use software-defined solutions that offer better economics.

Nutanix is a software-defined infrastructure provider for hybrid multicloud environments, and it has been shipping enterprise-class storage solutions based around a hyperconverged infrastructure (HCI) architecture longer than any other major enterprise vendor. The vendor's core platform, Nutanix Cloud Platform (NCP), has delivered highly resilient and scalable data storage services for well over a decade. While it initially supported block storage, file storage support was added in 2017 and object storage support was added in 2019. In 2021, Nutanix released Nutanix Unified Storage, a platform that consolidates block, file, and object storage services onto a single, integrated, and hybrid cloud–capable platform with multiprotocol (iSCSI, NFS, SMB, and S3) support that offers significant on- and off-premises deployment flexibility under a common operating model.

IDC conducted research to validate the advantages of multiprotocol workload consolidation using Nutanix Unified Storage.

Business Value Highlights

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421%
five-year ROI

10 months
to payback

53%
reduced total cost of operations over five years

63%
more efficient IT storage management

82%
less time needed to deploy new file storage

56%
more efficient IT security teams

75%
less time needed to deploy new object storage

99%
reduction in unplanned downtime

Through a series of in-depth customer interviews and a methodology for determining business value, IDC's analysis found that the use of Nutanix Unified Storage resulted in compelling benefits across a wide range of areas by:

- Driving average annual economic benefits of $2.36 million per organization
- Enabling more efficient storage management with less overall time needed to deploy new capacity for all data types
- Enhancing the performance, availability, security, and agility associated with hybrid multicloud infrastructure while lowering operational costs by 53%
- Improving availability by reducing unplanned downtime by 99%

Based on our findings, enterprises going through infrastructure modernization efforts driven by digital transformation would do well to consider software-defined data services platforms like Nutanix Unified Storage.

$441,700
in revenue gained annually

41%
improved application performance

Situation Overview

The new workloads being deployed as part of digital transformation are demanding more performance, availability, capacity, and agility from storage as well as requiring storage products to have integrated ransomware defense mechanisms. Driven by these new, more stringent requirements, most enterprises are modernizing their storage infrastructure as they move through digital transformation. To get the capabilities they need, many enterprises are moving toward software-defined, scale-out architectures and away from more traditional multicontroller arrays. Software-defined storage is growing at more than twice the rate of the traditional storage array market because many IT managers think that it provides a better fit for the more dynamic, hybrid multicloud environments that are the future of digital infrastructure.

Ransomware and malware attacks have been rampant in the past several years and are expected to continue to increase over time. On average, these types of "bad actor antics" affect one in four U.S.

companies, with global attacks happening every 11 seconds. Today, it is not a matter of if but when an enterprise will be attacked. Security consistently ranks as a top concern of CIOs as they move through digital transformation, and IT managers are looking to new storage security capabilities and zero-trust approaches to make their infrastructure, regardless of whether it is on premises or off premises, better able to withstand these incursions. Cyber-resiliency and ransomware protection should be built into modern IT infrastructure, and this need is underlined by evolving compliance and regulatory requirements like Sarbanes-Oxley Act (SOX), Health Insurance Portability and Accountability Act (HIPAA) , and General Data Protection Regulation (GDPR).

As CIOs refresh technology, they are also looking to increase infrastructure efficiency to make better use of budgets as they deal with annual data growth rates of 30–40%. Most enterprises today are running block-, file-, and object-based storage systems to accommodate workloads that need to use different access methods. Traditionally, block, file, and object storage have been managed by separate systems, but advancements in storage technology over the past several years are enabling enterprises to consolidate multiple workload types together on unified storage systems. Historical concerns with performance, availability, and security associated with workload consolidation have been resolved by newer, more powerful storage systems that have the flexibility to effectively accommodate quite different workloads on a single platform. IDC's interactions with enterprises clearly show that the most popular access methods of digital transformation are iSCSI (block), NFS (file), SMB (file), and S3 (object).

When workloads can be consolidated, many benefits can accrue. Unified storage systems are easier to buy and deploy, and the associated infrastructure costs less, consumes less energy, and takes up less floor space than dedicated block, file, and object storage silos. Unified storage systems also make it faster and easier to share data across different workloads, a feature important to enterprises working with multistage data pipelines for big data analytics, artificial intelligence, and other modern workloads. Unified storage improves productivity, as the same administrative skill set can be applied to managing the storage for more workloads. The economic justifications for consolidating storage workloads are compelling. Given the significant interest in enabling denser workload consolidation, IDC has written extensively about it (see *What to Look for When Considering Enterprise Storage Workload Consolidation,* IDC #US48670822, January 2022).

Hybrid multicloud environments, where an IT organization has its infrastructure split between on- and off-premises deployment models leveraging at least two public cloud providers, are the future. Already, over 84% of enterprises are using hybrid cloud infrastructure with at least one public cloud provider

in production. Capabilities that ease the integration of cloud technologies, like unified management regardless of deployment model and being able to move existing workloads to the cloud model without refactoring, make this evolution easier. The move to add other public cloud providers as part of the IT infrastructure is driven not only by price competition but also by the need for access to the several types of services that different public cloud providers offer. Providing better support for hybrid multicloud environments is another goal enterprises pursue during technology refresh. Again, software-defined infrastructure tends to be more easily compatible with hybrid cloud environments than more hardware-defined legacy infrastructure.

For unified storage systems to be integrated into hybrid cloud environments, they must support cloud-native workloads natively. It is not enough for vendors to simply extend platforms to the public cloud; they must also provide support for the Kubernetes-based automation and orchestration tools that dominate cloud deployments today. This means support for stateful virtualized and containerized applications, application programming interfaces (APIs) like the Container Storage Interface (for block and file) and the Container Object Storage Interface (for object), and enterprise hybrid cloud platforms like Red Hat OpenShift. While enterprises will need to continue to support legacy workloads, most of the new applications being deployed as part of digital transformation will be cloud-native in their design. IT managers need strategies that can support both with the same type of underlying software-defined infrastructure through a unified management interface.

While enterprises will need to continue to support block, file, and object storage, they will be managing more unstructured data (file and object) and less structured (block) data. Although most legacy mission-critical workloads used block storage, most of the new workloads being deployed as part of digital transformation use unstructured data. Buttressed by storage performance technologies like nonvolatile memory express (NVMe) and increasingly sophisticated storage management capabilities, file and object storage are taking over workloads that in the past were deployed on block storage (for example, databases). Unstructured data already dominates data growth by a wide margin (well over 90% of the data created in 2022 will be unstructured), and that will continue to be the case going forward. This reality puts the onus on CIOs to have an effective unstructured data management strategy.

Overview of Nutanix Unified Storage

Nutanix is a $1.5 billion provider of software-defined infrastructure for hybrid multicloud and public cloud environments. Founded in 2009, the company surpassed a billion-dollar valuation in 2013; today, it has more than 25,000 customers. Nutanix Unified Storage is a unified data management platform that is built on Nutanix's enterprise-class Cloud Platform. It is designed to address the requirements for modern applications deployed at the core, in the cloud, or at the edge. Nutanix Unified Storage is an integrated, software-defined, enterprise-grade IT infrastructure platform that lets customers consolidate their block-, file-, and object-based workloads onto a single highly scalable platform that accommodates all types of applications and deployment options under a common operating model. Because it is built on top of NCP, Nutanix Unified Storage inherits all of the flexibility, simplicity, and scalability as well as the hybrid multicloud capabilities of that proven platform.

Nutanix Unified Storage provides the option of servicing applications using different data types from a single platform and managing the entire software-defined infrastructure from a single pane of glass. The platform improves infrastructure efficiency by collapsing the requirement for dedicated storage silos to support each data type, reducing infrastructure spend along with energy and floor space consumption. It also makes it much easier to share data across different applications using different access methods without having to migrate data between storage silos, a task that can be time-consuming and risky.

With Nutanix Unified Storage, IT administrators have the freedom to choose from a wide range of several types of underlying hardware while still delivering enterprise-grade data services to their constituency. The platform is supported on any node type supported by AOS, the Nutanix storage operating system, giving customers significant choice in hardware platforms as well as many different appliance choices (which are available directly from Nutanix channel partners). Nutanix Unified Storage can be deployed in either a dedicated (standalone) or a hyperconverged infrastructure mode. The platform runs on AOS, but in dedicated mode, the virtual machines (VMs) on a node all run storage services, while in HCI mode, nodes can also run user VMs. The dedicated mode gives administrators the ability to deliver file-, block-, and object-based data services, while the HCI mode provides a different deployment model to deploy along with other workloads all the while keeping the same operational and platform flexibility regardless of the deployment option chosen.

Although Nutanix Unified Storage was created as a single, integrated platform in 2021, it is based on block, file, and object services from Nutanix that have been shipping for many years. The block services, supporting Internet Small Computer Systems Interface (iSCSI) access, were introduced in 2013, when Nutanix first shipped its hyperconverged, software-defined infrastructure; the file services, supporting Network File System (NFS) and Server Message Block (SMB) access, were introduced in 2017; and the object services, supporting S3 access, were introduced in 2019. Because of this heritage, Nutanix Unified Storage is a mature platform whose access methods have already been validated by years of production use. Nutanix Unified Storage did, however, make it possible to service block-, file-, and object-based workloads, regardless of whether they are deployed on premises or off premises, with a single license and manage them with a unified management interface for higher administrative productivity.

Enterprises have several workloads where the use of files makes it easier for end users to effectively manage and share their data. Nutanix file services provide a comprehensive set of file management capabilities with support for NFS (NFSv3 and NFSv4), SMB (SMBv2 and SMBv3), and multiprotocol support (NFS users accessing SMB data, etc.). In addition to core file-based capabilities, the platform supports user quotas, snapshots, tiering, file immutability (WORM), and replication. File offers both disaster recovery (DR) for the entire file server and the ability to DR at the share level. It includes integrated analytics concerning access patterns, capacity consumption, file distribution, file operations, and more that provide audit trails as well as deep insights and visibility against data under management. File services apply to a broad set of workloads, including enterprise file sharing for end-user computing, home directories, sensor data, audio and video stores, medical imaging, and data analytics.

Because of its rich metadata and massive scalability, object storage has been immensely popular as a cloud-based storage option, but as enterprises are deploying more data analytics workloads, they are also deploying object storage on premises a lot more. Nutanix object services deliver a highly scalable and secure S3-compatible object store, providing high performance for modern cloud-native, big data analytics and other modern workloads. The object services include several features important for enterprise applications, including versioning controls, immutability (WORM), S3 select capabilities, data life-cycle management, data-at-rest encryption, identity and access management, and integrated real-time replication for load balancing, data protection, and disaster recovery. Nutanix object services are integrated with data protection partners such as Commvault, HYCU, Veeam, and Rubrik for easier management of backup and archiving workflows. In addition to the more traditional backup and archiving use cases, object storage is increasingly being used for analytics, artificial intelligence and machine learning workloads, and cloud-native applications.

Administrators will find the comprehensive nature of the analytics integrated into Nutanix Unified Storage to be a compelling capability. Nutanix refers to this feature as Nutanix Data Lens — a software-as-a-service (SaaS)–based data governance service that not only provides comprehensive and unified monitoring across file services regardless of their deployment location but also proactively assesses data risks and automates responses to help administrators and end users take more effective control of their data. Given that most unstructured data today is "dark" in the sense that the metrics that most storage systems collect to manage it are limited, Nutanix Data Lens makes a significant difference in giving administrators what they need to implement effective security, meet governance and compliance requirements, and efficiently manage data growth.

Nutanix Data Lens comes with integrated ransomware protection to deal with the rampant incursions of "bad actors" seeking to compromise enterprise data. It enables administrators to monitor and alert anomalous behavior; review permission lineage; track access patterns, data age, and types; peruse audit trails; and protect against a continuously evolving list of known ransomware signatures (which today includes more than 5,000 different signatures).

Because Nutanix Unified Storage leverages Nutanix Cloud Platform, it builds on many of the core HCI platform features to offer feature-rich storage services. Features like SmartDR and SSR make it quite easy to implement resilient DR strategies for the consolidated set of workloads. For each of the data services (block, file, and object), Nutanix has built upon those core capabilities to provide data type–specific capabilities of interest. For example, for block services, administrators can tier volumes to several types of storage media at the volume level, replicate volumes, and create consistency groups. For file services, SmartDR enables file server–level DR and allows file-level backup data to be employed for other read-only use cases like data analytics, making more efficient use of storage capacity resources. SSR has been enhanced to support granular, file-level recovery. For object services, buckets can be snapshotted, tiered to different media, and replicated. While these examples are representative of how core features are enhanced to provide additional data type–specific functionality, they are not comprehensive.

Nutanix Unified Storage provides the support needed for both legacy workloads, which can be moved unchanged into virtual machines, and cloud-native workloads, which may be running either on premises or off premises. Nutanix's full-featured Container Storage Interface deploys with every Kubernetes cluster and natively integrates with Nutanix Volumes, Nutanix Files, and Nutanix Objects to enable support for modern applications as well as third-party platforms like Red Hat OpenShift.

As enterprises move through digital transformation, they need to be able to easily move application workloads around as the optimal deployment location evolves over time. With Nutanix Unified Storage supported on Nutanix Cloud Clusters (NC2), the portability and consistency in the data and control planes allow for flexible data availability to designated end users and applications, delivering the right data at the right time and place to meet diverse needs. With the same underlying infrastructure across locations, NC2 de-risks application mobility, simplifies cross-cloud management, and provides frictionless access to native public cloud–based services in both AWS and Microsoft Azure environments. Handy features of NC2 include "one-click" suspend/resume, auto-host remediation, and intelligent rack awareness, which lead to more resilient deployments.

When it comes to customer experience, Nutanix is hard to beat. Nutanix has distinguished itself as having had the highest published net promoter score (NPS) for any enterprise infrastructure provider. Over the past seven years, Nutanix has consistently been able to achieve an NPS of 90+, putting it ahead of every other IT vendor in the industry. For more information about NPS and its importance, see *Net Promoter Score Becoming an Important Metric for Enterprise Storage Managers to Understand* (IDC #US43896818, June 2018).

A key factor driving this extremely high customer satisfaction is the ease with which Nutanix Unified Storage can be upgraded and/or accommodate nondisruptive, multigenerational technology refresh. "One-click" upgrades make it easy to move to new releases, performing an upgrade pre-validation to reduce risk. The scale-out architecture of Nutanix Unified Storage allows customers to add new nodes with innovative technology over time, retire older nodes, and run clusters in mixed node configurations — all without having to shut down applications. As a result, Nutanix has a higher percentage of its customer base on the latest releases than other storage vendors, a factor which improves reliability and offers added functionality. Moreover, as upgrades and data life-cycle management are simplified, it becomes easier to upgrade to resolve any existing issues in addition to gaining access to the valuable new functionality. The ability of Nutanix Unified Storage to support easy, nondisruptive upgrades and new compute and storage technologies as they become available extends the useful life of the platform far beyond the typical four to five years of most storage systems. This is far less disruptive, less expensive, and much easier than the forklift upgrades that more traditional storage systems require.

Taken together, all of these features of Nutanix Unified Storage give customers the flexibility to deploy any workload in any location, effectively making IT infrastructure invisible. Enterprises get the performance, availability, scalability, and management simplicity that allow them to densely consolidate their

mission-critical applications onto a single platform, improving deployment agility to place those workloads in the optimal location, even if that may change over time. And they simplify IT infrastructure by replacing multiple systems with a single system that is centrally managed, easily accommodates technology advancements, and lowers costs — all while still meeting the stringent performance and availability requirements of mission-critical workloads.

The Business Value of Nutanix Unified Storage

Study Demographics

IDC conducted research that explored the value and benefits of using Nutanix Unified Storage to manage file- and object-based storage operations. The project included interviews with eight organizations that were using Nutanix Unified Storage. Interviewed managers all had experience with and knowledge about its benefits and were asked a variety of quantitative and qualitative questions about its impacts on their IT/storage operations, core businesses, and costs.

Table 1 (next page) presents study demographics. The organizations that IDC interviewed had an average base of 7,291 employees. This workforce was supported by an IT staff of 199 engaged in managing 3,182 business applications using 2,570TB of data and storage capacity. In terms of geographical distribution, six companies were based in the United States, with the other two in Canada and India. A variety of vertical markets were represented: business services, construction, education, financial services, healthcare, manufacturing, telecommunications, and transportation.

TABLE 1

Firmographics of Interviewed Organizations

	Average	Median	Range
Number of employees	7,291	2,125	175–42,500
Number of IT staff	199	40	5–3,000
Number of external users/customers	7,442	4,250	0–24,000
Number of business applications	3,182	63	8–25,000
Total number of terabytes available of storage	2,570	325	20–10,000
Revenue per year	$5.6B	$478.1M	$5.0M to $24.0B
Countries	United States (6), Canada, India		
Industries	Business services, construction, education, financial services, healthcare, manufacturing, telecommunications, transportation		

Source: IDC Business Value Research, July 2022

Selection and Use of Nutanix Unified Storage

The organizations that IDC interviewed described typical patterns for their use of Nutanix Unified Storage. They articulated the rationale for choosing it as an optimal means of managing their file- and object-based storage operations. Interviewed companies discussed the need for a highly intuitive common interface that provides visibility into and effectively manages all aspects of their storage operations. They commented on the need for a cost-effective approach and described how Nutanix fulfilled this goal with better licensing arrangements, easier forecasting, and avoidance of the five-year forklift cycle that typifies storage infrastructure upgrades. The benefit of ease of use was also cited.

Study participants made detailed comments on these benefits:

Easy to use and purchase — (product designer, telecommunications):

"We were struggling with our legacy architecture. The three-tier architecture made it exceedingly difficult for us to run datacenter operations: heavy complexity, being noncompetitive with the public cloud marketplace, cost overruns, stranded capacity, and difficulty scaling. When we started looking at the Nutanix platform, we liked the common interface that manages everything. It is the same consumption mechanism whether I am buying nodes for compute purposes or for storage purposes or just a different type of node — all the resources just get added to what looks like a single system. We love the concept of buying through the same ecosystem and managing through the same management plan regardless of the type of services that are being delivered on the platform. With Nutanix, we found that the user interface — for our end users, our administrators, and our external customers — was great. It was beautiful, intuitive, and made sense."

Better storage cost savings and reduced cost — (information security officer, construction):

"We liked the interface and the way we could manage and update Nutanix. We also liked that we did not have to license some of the other technologies, which reduced costs. So, it just seemed easier to manage, took less time for our systems administrator, and cut down on some of our costs."

Made it easier to forecast storage needs and storage costs — (consulting systems engineer, transportation):

"My team liked the management of the Nutanix platform. I like the budgetary replacement cycle and the fact that nodes are interchangeable. I can add major modern technology without having to 'forklift upgrade' storage every five years. I can just roll in a new node every year, and I can forecast that out for as long as I like."

Cost-effectively scaled up storage — (technology manager, education):

"We didn't look at anything else because, with our data growth, those options would have been a lot more expensive."

Table 2 (next page) provides a snapshot of Nutanix usage and the IT environments of the interviewed companies. There were, on average, eight Nutanix storage clusters in use, with 1,470TB of data and storage capacity. In addition, Nutanix Unified Storage supported a substantial portion of the revenue base of the interviewed companies (85%), with 1,629 applications on average hosted on the platform. Additional metrics are presented.

TABLE 2

Organizational Usage of Nutanix Unified Storage

	Average	Median	Range
Number of sites/branches	16	16	5–38
Number of Nutanix storage clusters	8	5	2–20
Number of physical servers	288	23	6–2,000
Number of virtual servers	1,303	450	25–7,000
Number of internal users	6,278	1,125	175–42,750
Number of apps	1,629	63	8–12,500
Number of terabytes	1,470	375	20–9,000
Percentage of revenue supported by Nutanix Unified Storage	85%	100%	10–100%

Source: IDC Business Value Research, July 2022

Business Value and Quantified Benefits

This IDC Business Value study evaluates and quantifies the benefits for companies that have adopted Nutanix Unified Storage as the core platform for their storage operations. Interviewed companies uniformly found that Nutanix enabled more efficient storage management with less overall staff time needed to deploy new storage resources for all data types. In addition, they were able to enhance the performance and agility associated with deploying and managing storage resources while lowering the cost of both operations and core infrastructure.

Several key business benefits were also identified. Nutanix customers were able to leverage IT and storage team benefits to foster improved application development with downstream impacts on business operations and revenue. In addition, they minimized the effects of unplanned downtime to lower business risk and increase end-user productivity.

Study participants highlighted these and other significant benefits:

Very user-friendly management tools — (systems administrator, business services):
"From an administration perspective, it is quite a simple platform to manage. Orchestration efforts during updates are as complete as they get compared with other vendors I have worked with. It is a one-click upgrade when you need to upgrade any components. You do not have to run around and check different compatibility between components. It is all what they call LCM, which is the life-cycle management platform. You do not need to worry about anything."

Common management architecture and better storage cost options — (product director, telecommunications):
"The biggest benefit is a common management interface. We have a common architecture and scalability. Nutanix is very cost-effective because of the way that we buy it. Being able to use commodity disks and multiple vendors are all core components of buying with Nutanix. I think the ability to finally get automation up and running for a lot of this has been critical to the overall design as well."

Could identify issues more easily — (systems administrator, business services):
"We can see better when our clients — our users, if you will — are having issues. We have more transparency to identify bottlenecks and see what is happening. Also, since we purchased all flash, it is a lot faster. For us, time is money. If, for example, it takes three minutes now to do something that used to take 30 minutes, we are making 27 minutes' more profit."

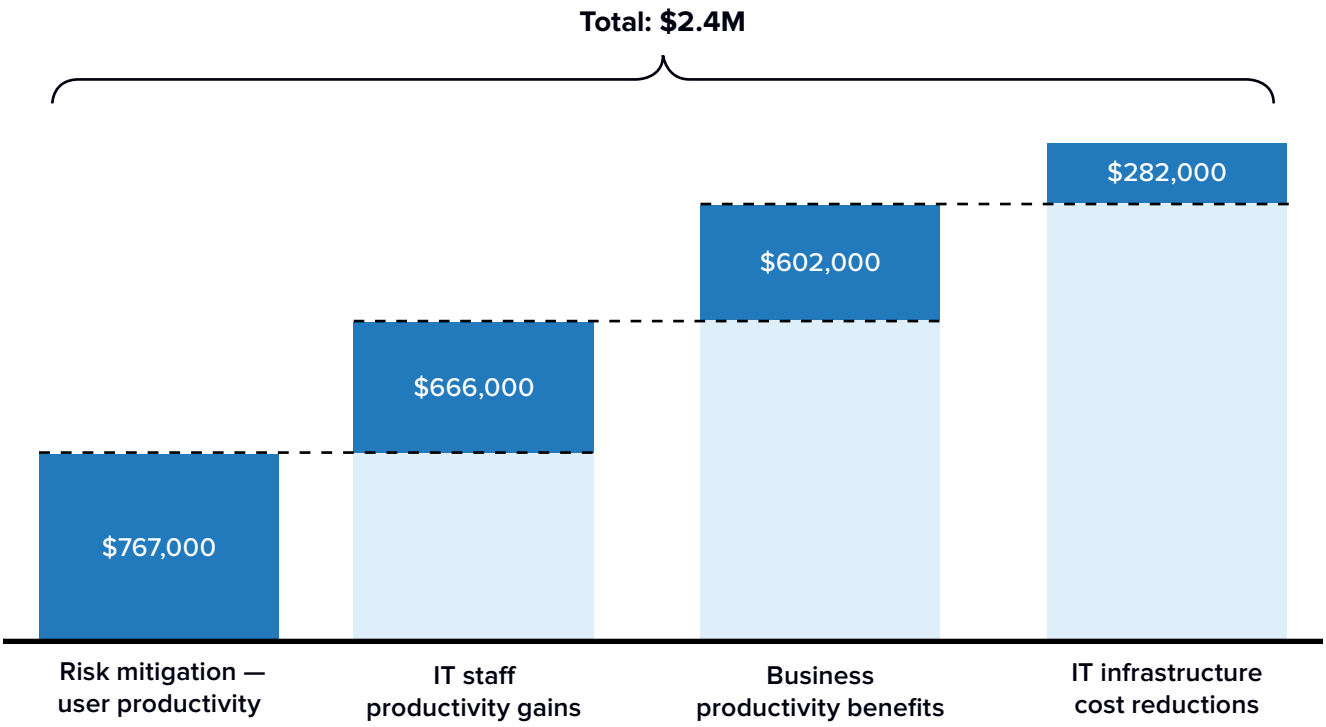
Quicker and easier restores — (technology manager, education):
"In terms of the functionality and features that help manage the storage environment, file restore has gotten much easier and faster. That used to be a challenge, and now with Nutanix, it is quite simple. Now it is a few minutes, instead of up to an hour."

Based on interviews with the eight intensive users of Nutanix, IDC quantified that the value study participants will receive in average annual benefits is $2.4 million over five years (see **Figure 1,** next page). IDC further calculated these benefits at $157,600 per 100TB.

FIGURE 1

Average Annual Benefits per Interviewed Organization

($ per interviewed organization)



n = 8; Source: IDC Business Value Research, July 2022

Improved IT Storage Infrastructure and Operations

The IT infrastructure market has been on a path of rapid change and modernization. In the coming years, organizations will continue to deploy, operate, and scale their digital infrastructure with the goal of ensuring consistent security, performance, and compliance across all resources, regardless of where and how they are deployed. In this context, storage solutions will need to ensure availability and reliability to optimally support business-critical applications. Moving to more modernized storage infrastructure, particularly when that is a software-defined storage solution like Nutanix Unified Storage, clearly improves IT staff efficiencies around routine tasks that involve deploying, managing, and upgrading storage resources that support ongoing business operations. The ability to nondisruptively upgrade Nutanix Unified Storage is another key benefit that frees administrators to focus less on maintaining infrastructure and more on more strategic operations.

Nutanix Unified Storage is designed to help companies meet these challenges by providing an automated software-defined platform that uses virtualized storage controllers to provide access to block-, file-, and object-based data. By employing clustered, shared-nothing nodes to create a pool of resources, the platform can scale up nondisruptively by adding virtual resources to storage controllers and scale out nondisruptively by adding physical nodes. Nutanix Unified Storage can be deployed anywhere from a single node up to 48 nodes in a single cluster, which can scale to support tens of petabytes of storage capacity.

In their in-depth comments to IDC, interviewed organizations identified the core benefits that Nutanix Unified Storage brought to their organizations. They cited the advantage of being able to reduce large numbers of file and object servers via centralized management. In addition, study participants noted improved resiliency and agility that helped them easily scale resources as needed. They also appreciate the advantage of built-in security features like role-based access control and encryption that helped save costs by avoiding the need for third-party tools.

Study participants commented in detail on these and other benefits:

Easier management of infrastructure and reduced cost of storage — (technology manager, education):

"It all comes down to centralized management for us. My staff is now housed in the building with the storage. We do not have to go into 38 remote sites and manage 38 different servers. With Nutanix, we have noticeably reduced the amount of time we spend managing our storage, by at least 25%. We also avoided future costs. We had 38 dedicated file servers before that have now been replaced by this single storage cluster. To refresh those file servers would have cost us $400,000 or more."

Continuous ease of management — (systems administrator, business services):

"It reduces a lot of administration overhead when we use Nutanix because you do not need to manage the SAN as a separate entity like you do with traditional three-tier architecture. So, for us, there are a lot of ease-of-use benefits there. We have migrated I would say 95% of our production workloads onto Nutanix while slowly phasing out our previous solutions. And it has gotten us away from having to use a third-party hypervisor, which has helped simplify our environment. We now have a single vendor, that is Nutanix, that supports everything. It is much easier for us."

Built-in security tools help save costs — (consulting systems engineer, transportation):

"The way that Nutanix manages its encryption has helped us. We do not have to implement any third-party encryption, and we are avoiding buying these tools as a result."

Time freed up to work on other projects — (information security officer, construction):

"With the time saved, we were able to push forward with other projects more quickly. One is that we are trying to reorganize our file shares, but the other thing is also that we want to reorganize our network to use SDYN. Some of these things would have just taken longer."

As these detailed comments illustrate, interviewed companies found that Nutanix Unified Storage offered user-friendly management features that made it easier for their storage-related IT teams to monitor their environments. This was the result of operational efficiencies gained from consolidating storage silos and the ease of managing across multiple applications, geographies, and data types (block, file, and object).

IDC quantified how the platform boosted storage team staff productivity. As shown in **Table 3**, after adoption, average productivity increased significantly (60%). This helped free up an average of 4.0 full-time employees' (FTEs') worth of time to be refocused on strategic projects and other tasks. These productivity improvements translated into an average annual salary savings of $395,100 for each organization.

TABLE 3

Storage Management Staff Impact

	Before Nutanix Unified Storage	With Nutanix Unified Storage	Difference	Percentage Benefit
Storage management — FTE equivalent per organization per year	6.6	2.6	4.0	60%
Equivalent value of staff time per year	$666,000	$264,900	$395,100	60%

Source: IDC Business Value Research, July 2022

Study participants identified other Nutanix improvements such as enhanced agility that better supported their business efforts. Organizations noted that it was much easier to deploy new file and object storage through Nutanix's storage purchasing programs and management tools. This increased agility enabled higher-value development activities and ensured that IT organizations could better respond to business needs and fluctuating demand.

Commenting on better resiliency and agility, an information security officer in the construction sector noted: *"Nutanix is more resilient. Being resilient and agile is a direct benefit. Another is that our environment better integrates with the restoration tools built into Nutanix and the way it integrates with backups. In terms of agility, it is easier to expand the storage if we need more space and there are a lot fewer steps when you must do it. It is easy to expand individual shares or also add additional shares if we want to add a new one."*

Figure 2 presents data illustrating that after adoption, IT and storage teams were able to deploy file and/or object storage resources more quickly and easily. As shown, the time needed to deploy new file storage resources was reduced substantially (82%). In addition, the time needed to deploy new object storage resources was reduced 75%.

FIGURE 2

Storage Agility Impact

(% quicker)

Source: IDC Business Value Research, July 2022

Other IT teams, such as help desk staff, also benefited from Nutanix Unified Storage. With more scalable storage, there were fewer storage infrastructure–related help desk issues to manage. When issues did occur, Nutanix made it easier for the staff to fix and address them.

Table 4 (next page) quantifies these impacts. As shown, the number of support calls per week was reduced by 17%. In addition, the average time needed to resolve issues was reduced by 45%. These improvements translated into an average annual staff-related cost savings of $76,500 for each organization studied.

TABLE 4

Help Desk Impact

	Before Nutanix Unified Storage	With Nutanix Unified Storage	Difference	Percentage Benefit
Number of support calls per week	136	113	23	17%
Average time to resolve in total (hours)	0.4	0.2	0.2	45%
Total number of help desk FTEs needed	1.4	0.7	0.8	54%
Staff time cost per year	$141,500	$65,000	$76,500	54%

Source: IDC Business Value Research, July 2022

IDC then evaluated impacts for IT security teams. Study participants reported that the built-in security capabilities offered by Nutanix Unified Storage allowed their organizations to encrypt data more easily. As one study participant noted: *"Nutanix provides great visibility to see what is happening and what has happened than our prior systems. After a security incident, it is easier to generate an audit trail to determine what happened with Nutanix."* Nutanix Unified Storage's integrated data analytics and security provide the real-time, proactive insights that make this possible.

Table 5 (next page) shows these impacts. After adoption, interviewed companies saw a 56% boost in the productivity of their IT security teams. This amounted to the equivalent of adding 1.9 FTEs and resulted in an annual productivity-based business value of $188,400 for each organization.

TABLE 5

IT Security Staff Impact

	Before Nutanix Unified Storage	With Nutanix Unified Storage	Difference	Percentage Benefit
IT security management — FTE equivalent per organization per year	3.4	1.5	1.9	56%
Equivalent value of staff time per year	$338,000	$149,600	$188,400	56%

Source: IDC Business Value Research, July 2022

Data recovery capabilities become critically important when disruptive events do occur. Interviewed companies reported that Nutanix Unified Storage provided value through built-in data replication (DR) and protection software that made it easier for IT teams to manage any issues that arose. This improvement resulted in significant data recovery–related time savings. As one study participant noted: *"We use Smart DR. That is helpful because that gives us a good DR capability that is easier to implement. We are mirroring different clusters. Before, we did not have that; we were just copying back and forth. But with DR now with a couple clicks, we can have the server up and running at a different location. So, it is fast recovery for us."*

Figure 3 quantifies these benefits. As shown, after adoption, average staff time needed per data recovery effort was reduced significantly (74%). In addition, the average data recovery window saw a 67% reduction.

FIGURE 3

Data Recovery Impact

(% improvement)

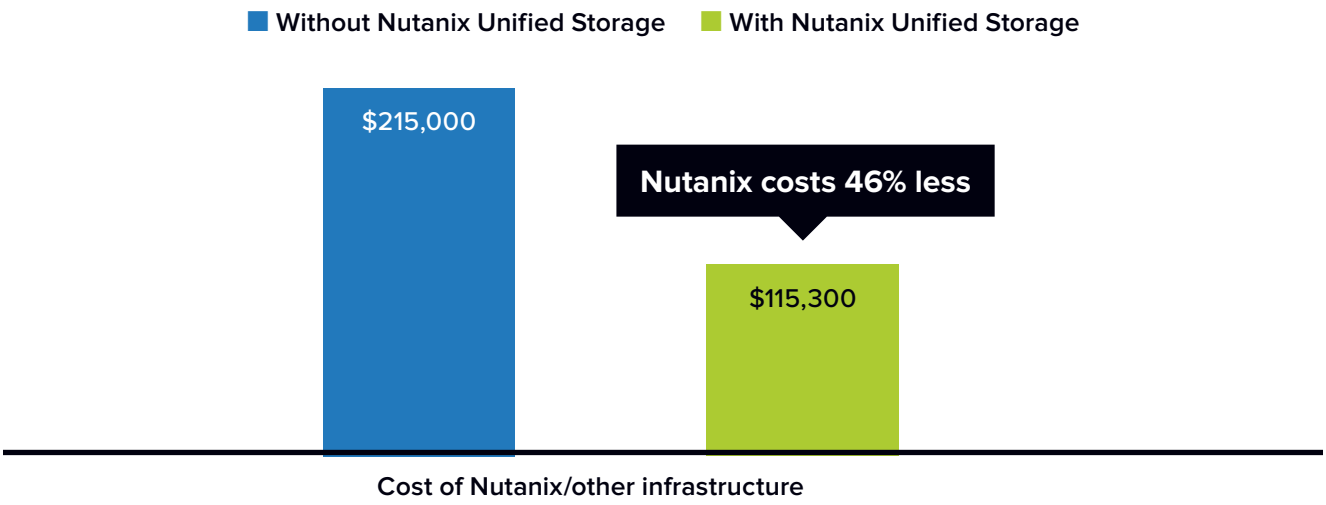
Source: IDC Business Value Research, July 2022

The use of Nutanix Unified Storage served as a cost-effective storage platform, thereby helping interviewed companies optimize their IT infrastructure costs. Because of their ability to consolidate workloads from multiple different systems onto Nutanix Unified Storage and being able to easily scale and do technology upgrades, the interviewed respondents noted that they were cutting their infrastructure costs by half. Another factor is that Nutanix's subscription-based pricing model helps organizations switch costs from capex to opex. **Figure 4** illustrates the storage infrastructure savings that IDC projects will be available to interviewed companies over a five-year period. As shown, infrastructure costs with Nutanix are 46% lower than those of alternative or legacy solutions.

FIGURE 4

Five-Year IT Infrastructure Savings per 100TB

($)



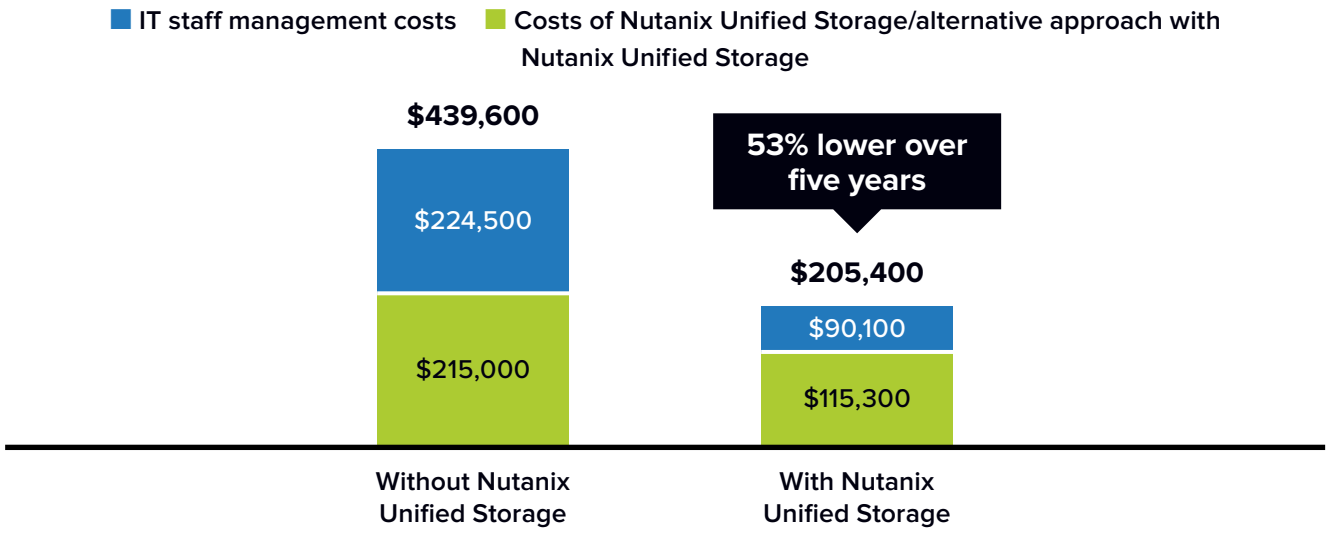
Source: IDC Business Value Research, July 2022

Additional cost savings were realized on the operational side. One factor in this benefit was the efficiency of Nutanix licensing, given that it allows the use of subscription licenses for both on-premises and public cloud–based environments. IDC calculated that interviewed organizations were able to reduce the cost of operations for their storage infrastructure by 53% as a result of reduced management burden. **Figure 5** (next page) illustrates the cost savings that IDC projects will be available to interviewed companies (53% over a five-year period).

FIGURE 5

Five-Year Cost of Operations per 100TB

($)



For an accessible version of the data in this figure, see Data for Figure 5 in Appendix 2.

Source: IDC Business Value Research, July 2022

Business Improvements

The companies that IDC interviewed reported that the improvements enabled by Nutanix Unified Storage also offered downstream benefits for their business operations and results. Improving storage performance and staff productivity led to greater agility, less unplanned downtime, and better IT staff productivity. Combined, these performance upgrades served to provide stronger levels of support for business activities and operations. Routine tasks such as running analytical queries were improved, and application development operations were streamlined.

In addition to these across-the-board benefits, study participants called out other positive impacts. They noted that Nutanix helped their IT organization adjust to business growth and helped support end users' unique use cases. They also appreciated the fact that the Nutanix infrastructure was more available than the prior solutions from which they were moving.

Study participants commented on these and related benefits:

IT can adjust to business growth — (systems administrator, business services):
"Nutanix helped make us more agile and control our environment better. The business would have grown the same, but Nutanix helped the IT department support that growth more easily."

Helps support end users' unique use cases — (systems administrator, business services):
"Nutanix was faster than our old storage, and we have workflows where this can make a substantial difference. For example, production environment engineers could run simulations directly from Nutanix instead of having to download the storage to their local computer. This saves them the trouble of downloading the storage, running the simulation locally, and then re-uploading the data — a more time-consuming workflow. Nutanix helps end users do their work more quickly and easily."

Better storage uptime for the organization — (technology manager, education):
"Before Nutanix, if we lost a file server, we were just down. Now, with Nutanix's DR tools and how everything is replicated, we can recover quickly and easily. We are in much better shape as far as uptime is concerned."

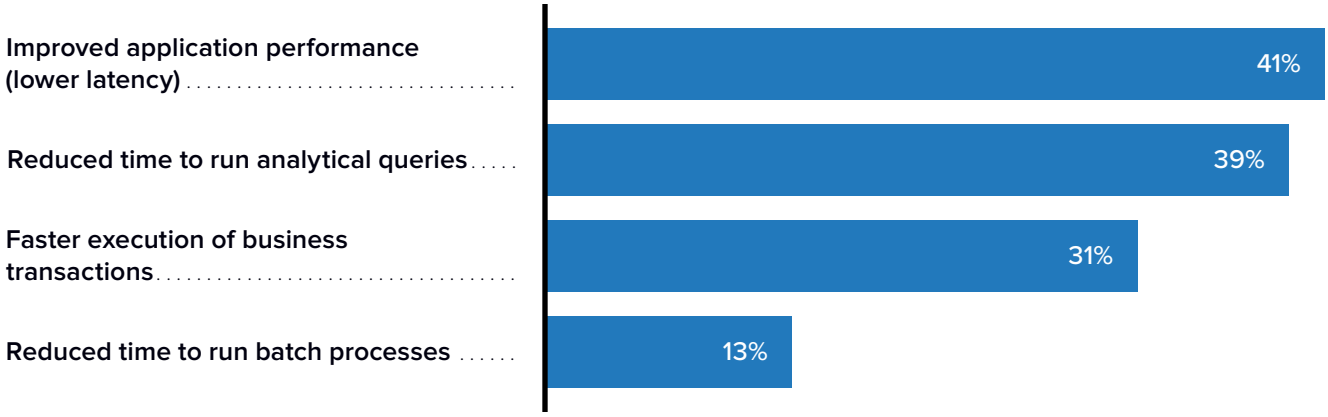
IDC looked at the specific performance impacts that Nutanix features and functionality offered to support business operations. Interviewed companies reported significant improvements across several performance metrics because of Nutanix's scalable storage and built-in management tools.

To quantify these benefits, IDC identified and measured a series of key performance indicators. As shown in **Figure 6**, after deployment of Nutanix Unified Storage, the greatest gains were seen in improved application performance (41% better), reduced time to run analytical queries (39% less), and faster execution of business transactions (31% faster).

FIGURE 6

Performance KPI Impact

(% improvement)



Source: IDC Business Value Research, July 2022

IDC then looked at impacts on unplanned downtime and found that interviewed companies benefited from less operations-related downtime. **Table 6** quantifies these benefits. As shown, the time involved in remediation efforts needed after disruptive events was reduced significantly (94%), leading to a 99% improvement in end-user productivity. Combined, these benefits yielded an annual productivity-based business value of $820,800 for each organization.

TABLE 6

Unplanned Downtime Impact — User Productivity

	Before Nutanix Unified Storage	With Nutanix Unified Storage	Benefit	Percentage Benefit
Frequency per year	1.8	0.3	1.5	83%
Time to resolve (hours)	3.6	0.2	3.4	94%
Hours of lost productivity time per employee per year	3.5	0.04	3.5	99%
FTE impact — lost productivity due to unplanned outages	11.8	0.1	11.7	99%
Value of lost productivity per year	$829,100	$8,300	$820,800	99%

Source: IDC Business Value Research, July 2022

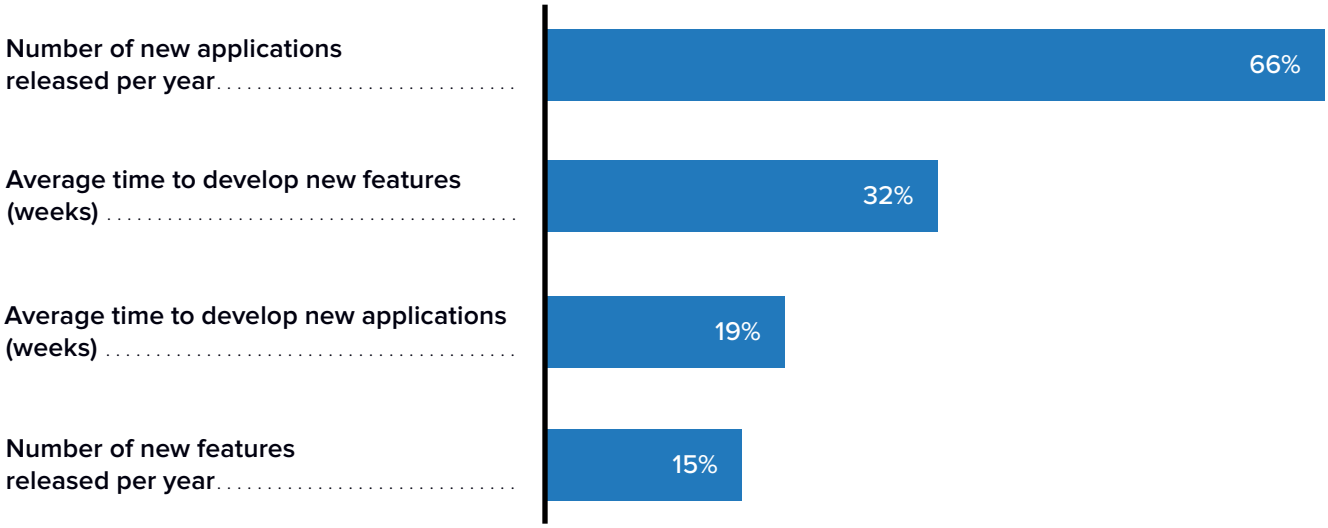
Application development was another key benefit area that study participants addressed. For developers, resource agility is an important attribute. They noted that their organizations were able to more quickly and easily give their developers the storage space they needed to develop, test, and deploy new applications and features.

Figure 7 (next page) quantifies these impacts. The greatest improvements were seen in the number of new applications released per year (66% more), average time to develop new features (32% faster), and average time to develop new applications (19% faster).

FIGURE 7

Improvements in Application Development Metrics

(% improvement)



Source: IDC Business Value Research, July 2022

Improving storage performance and staff productivity led to greater agility, less unplanned downtime, and better IT staff productivity. All of these improvements provided stronger levels of support for business activities and revenue results. As shown in **Table 7**, these overall improvements resulted in average annual additional revenue of $441,700 for each organization.

TABLE 7

Revenue from Better Addressing Business Opportunities

	Per Organization	Per 100TB
Total additional revenue per year	$441,700	$30,050
Assumed operating margin	15%	15%
Total recognized revenue per year — IDC model*	$66,300	$4,500

* The IDC model assumes a 15% operating margin for additional revenue.

Source: IDC Business Value Research, July 2022

The final area that IDC evaluated was related to end-user productivity. With Nutanix Unified Storage, end users were more productive because of improved application performance and better IT resource agility. As a product director in the telecommunications sector noted: *"Our users now operate faster and more efficiently. That is because of the Nutanix platform. We look at a design feature called data locality, which automatically moves data closer to where it is being used, lowering access latencies. The storage responds faster, driving significant application performance improvements. Our old technology did not have that capability, and that storage was much slower."*

Table 8 quantifies these benefits. As shown, IDC calculated that 2.4 productive hours were gained per user with Nutanix, resulting in an annual productivity-based business value of $572,100.

TABLE 8

End-User Impact

	Per Organization
Number of users impacted	545
Average productivity gains	1.5%
Productive hours gained per organization	15,400
Productive hours gained per user	2.4
End-user impact — FTE equivalent per organization per year	8.2
Value of end-user time	$572,100

Source: IDC Business Value Research, July 2022

ROI Summary

Table 9 (next page) presents IDC's return-on-investment (ROI) analysis for study participants' use of Nutanix Unified Storage. IDC projects that interviewed companies will achieve five-year discounted benefits worth an average of $8.3 million per organization through improved business operations and IT team/end-user productivity gains as described. These benefits compare with total five-year discounted costs of $1.6 million per organization. These levels of benefits and investment costs are projected to result in an average ROI of 421% with a break-even point occurring in 10 months.

TABLE 9

Five-Year ROI Analysis

	Per Organization	Per 100TB
Benefit (discounted)	$8.3M	$566,100
Investment (discounted)	$1.6M	$108,800
Net present value (NPV)	$6.7M	$457,300
ROI (NPV/investment)	421%	421%
Payback period	10 months	10 months
Discount factor	12%	12%

Source: IDC Business Value Research, July 2022

Challenges/Opportunities

While most enterprises readily admit that software-defined infrastructure like HCI is more flexible and easier to use and drives better economics than more siloed legacy approaches, many still worry about performance and availability. It is clear from this study that enterprises can move workloads onto software-defined infrastructure during technology refresh and improve performance and availability. In doing so, they can also achieve other benefits like increased agility, much easier scalability, improved infrastructure efficiency, and better hybrid multicloud integration. IDC's January 2022 HCI Survey indicated that a little more than half of enterprises are currently running workloads they consider mission-critical on HCI, but that means well over 40% have not yet made that jump.

Nutanix clearly can meet mission-critical workload requirements (as well as those of other types of enterprise workloads), but it will be challenged to convince customers that are still skeptical about the capabilities of HCI. Software-defined infrastructure offerings like Nutanix Unified Storage, even though they are based on an HCI architecture, offer compelling advantages against more legacy hardware-defined arrays, and getting dubious customers to understand how Nutanix Cloud Platform supports mission-critical workloads will open additional opportunities for both Nutanix and for enterprises that stand to benefit from Nutanix Cloud Platform's other advantages.

Conclusion

Among enterprises working through digital transformation, 70% of them plan to modernize their storage infrastructure. Among the goals of that modernization are agility and a move to more efficient IT infrastructure, an objective that has most enterprises thinking about workload consolidation. Software-defined infrastructure like Nutanix Unified Storage gives customers a range of deployment models, each of which delivers cloud-like flexibility, and the ability to consolidate block, file, and object-based workloads onto a single platform without putting performance, availability, or security at risk presents a compelling economic benefit. For flexibility, simplicity, and easy scalability, many enterprises are replacing legacy SAN and NAS platforms running mission-critical workloads with software-defined infrastructure offerings like Nutanix Unified Storage.

Nutanix Unified Storage allows enterprises to consolidate iSCSI, NFS, SMB, and S3 workloads onto a single platform with a unified management interface and common operating and licensing models. Because Nutanix Unified Storage runs on top of the vendor's proven AOS storage operating system, it harnesses all of the flexibility, simplicity, and scalability advantages of that platform while allowing a range of deployment options (including dedicated or HCI mode, bare metal or virtualized, and on premises or off premises — that is, public cloud). Nutanix Unified Storage provides software-defined, scale-out storage; offers enterprise-grade storage management functionality that can support mission-critical workloads; and supports hybrid multicloud integration capabilities with a nondisruptive growth path for both scalability and technology refresh.

IDC performed in-depth interviews with eight users of Nutanix Unified Storage that had deployed the platform on technology refresh to determine the business value proposition of that decision, and the results were impressive.

All aspects of the organizations' IT operations improved significantly:

- Reduced total cost of operations by an average of 53%
- Responded to user requirements 82% faster
- Enjoyed 63% more efficient storage management
- Improved application performance by 41%
- Garnered a 99% reduction in unplanned downtime
- Experienced only 10 months to payback along with a 421% five-year ROI

Interviewed respondents noted the benefits of centralized management across different data types, better performance for both applications and recoveries, significantly improved ease

of use, and software-defined flexibility. For ease of use, respondents called out Nutanix's "one-click" upgrades, simple nondisruptive expandability and multigenerational technology refresh, and Nutanix Unified Storage's built-in tools that were well integrated and saved customers from having to buy additional third-party tools. IDC predicts that over time, more customers will move away from monolithic SAN/NAS solutions and toward software-defined options like HCI, and enterprises that have made that decision should be sure to consider Nutanix Unified Storage.

Appendix 1: Methodology

IDC's standard Business Value/ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using Nutanix Unified Storage as the foundation for the model.

Based on interviews with organizations using Nutanix, IDC performed a three-step process to calculate the ROI and payback period:

1. **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using Nutanix Unified Storage.** In this study, the benefits included security staff time efficiencies, development productivity gains, reduced costs associated with risk, and higher revenue.
2. **Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Nutanix and can include additional costs related to migrations, planning, consulting, and staff or user training.
3. **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Nutanix over a five-year period. ROI is the ratio of the net present value (NPV) and the discounted investment. The payback period is the point at which cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on several assumptions, which are summarized as follows:

- Time values are multiplied by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For purposes of this analysis, based on the geographic locations of the interviewed organizations, IDC has used assumptions of an average fully loaded salary of $100,000 per year for IT staff members and an average fully loaded salary of $70,000 per year for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).

- The net present value of the five-year savings is calculated by subtracting the amount that would have been realized by investing the original sum in an instrument yielding a 12% return to allow for the missed opportunity cost. This accounts for both the assumed cost of money and the assumed rate of return.
- Because IT solutions require a deployment period, the full benefits of the solution are not available during deployment. To capture this reality, IDC prorates the benefits monthly and then subtracts the deployment time from the first-year savings.

Note: All numbers in this document may not be exact due to rounding.

Appendix 2: Supplemental Data

The table in this appendix provides an accessible version of the data for the complex figure included in this White Paper. By clicking "Return to original figure" below the table, you can quickly get back to the corresponding data figure.

DATA FOR FIGURE 5

Five-Year Cost of Operations per 100TB

	Without Nutanix Unified Storage	With Nutanix Unified Storage
IT staff management costs	$224,500	$90,100
Costs of Nutanix Unified Storage/alternative approach with Nutanix Unified Storage	$215,000	$115,300

Return to original figure

Source: IDC Business Value Research, July 2022

About the IDC Analysts

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Harsh V. Singh is a senior research analyst for IDC's Business Value Strategy Practice, responsible for developing return-on-investment and cost-savings analysis on enterprise technological products. Harsh's work covers various solutions that include datacenter hardware, enterprise software, and cloud-based products and services. Harsh's research focuses on the financial and operational impact these products have on organizations that deploy and adopt them.

More about Harsh Singh

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Group Vice President, Infrastructure Systems, Platforms, and Technologies Group, IDC

Ashish Nadkarni is group vice president within IDC's Worldwide Infrastructure Practice. He leads a team of analysts who engage in delivering qualitative and quantitative research on computing, storage, and data management infrastructure platforms and technologies, via syndicated research programs (subscription services), data products (IDC Trackers), and custom engagements. Ashish's vision for his team is to take a holistic, forward-looking, and long-term view on emerging as well as established infrastructure-related areas in the datacenter, in the cloud, and at the edge. His core research starts with an objective assessment of heterogeneous, accelerated, fog, edge, and quantum computing architectures, silicon, memory, and data persistence technologies, composable and disaggregated systems, rackscale design, software-defined infrastructure, modern operating system environments, and physical, virtual, and cloud computing software. It is complemented by research on current and next-gen applications and workloads, vertical and industry-specific use cases, emerging storage and server form factors and deployment models, and upcoming IT vendors. Ashish also takes a keen interest in tracking the ongoing influence of open and open-source communities like OpenStack and Open Compute Project on infrastructure.

More about Ashish Nadkarni

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