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Organizations Leverage Nutanix Enterprise Cloud as Scalable, High-Performing, and Cost-Effective Infrastructure Foundation

Business Value Highlights

477%
five-year ROI

62%
lower five-year cost of operations

82%
faster deployment, storage

5.6%
higher gross productivity, VDI users

85%
less unplanned downtime

72%
more data backups

58%
more efficient IT infrastructure management

38%
lower cost of IT infrastructure

EXECUTIVE SUMMARY

It is difficult to overstate the positive influence private and public clouds are having on datacenter teams around the world. Indeed, the use of private and public cloud solutions has helped drive new levels of cost savings and operational agility that were simply not possible with traditional datacenter infrastructure. Rather than selecting one cloud solution, however, organizations are increasingly leveraging a combination of cloud deployment models. In doing so, these organizations expect to seamlessly leverage a mix of cloud models that may be on-premises, hosted, private, or public clouds with the freedom to dynamically select the best model for each use case and workload. Software-defined, scale-out hyperconverged infrastructure (HCI) has become a key component of these hybrid cloud (i.e., the combination of private and public clouds) environments. Today's best HCI solutions offer a robust platform that can be used to implement a private cloud within the datacenter while also supporting intelligent software to seamlessly integrate public cloud application platforms. Such HCI solutions provide the benefits of introducing public cloud features to on-premises infrastructure while also providing a common management platform for a hybrid cloud environment.

Nutanix Enterprise Cloud is a significant offering in the broader hyperconverged infrastructure market. IDC previously conducted studies on the value of the Nutanix platform in 2015 and 2017 and carried out new research with organizations running a variety of business applications on Nutanix Enterprise Cloud to revalidate the platform's benefits. Nutanix customers, which had an average employee base of over 30,000, confirmed the platform's continued strong value proposition through much-improved IT agility and performance to support employees and business operations and limit operational risk, as well as driving lower infrastructure costs and more efficient IT teams.

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Based on interviews with Nutanix customers, IDC calculates that they will achieve average annual benefits of $13.44 million per organization (approximated to $46,876 annual benefit per 100 employees/IT end users), which would result in an average five-year return on investment (ROI) of 477%, by:

- Leveraging an agile, scalable, cost-effective, and high-performing IT platform to enable employees improve business results
- Minimizing the effects of unplanned downtime on their businesses, thereby contributing to greater productivity for business units and reduced revenue losses
- Needing less IT staff time to manage and support compute and storage resources and better developing and deploying applications to staff and customers
- Establishing more cost-effective IT infrastructures and reducing licensing and other ongoing operational costs

SITUATION OVERVIEW

Today's most successful enterprise infrastructure suppliers offer a broad portfolio of software-defined infrastructure (SDI) able to support mission-critical workloads and that can be deployed as a platform for hybrid cloud environments. SDI and HCI represent modern architectures with new design tenets (e.g., standardized building blocks, automated management, self-healing, and nondisruptive scaling) that drive massive operational improvements to core infrastructure management tasks. HCI represents one of the most dominate types of SDI architectures today. HCI solutions are built as clusters of commodity x86 servers that provide an abstracted pool of capacity, memory, and CPU cores as the foundation for server-centric workloads (the hypervisor, virtual machines [VMs], and applications), as well as storage-centric workloads (e.g., data persistence, data access, and data management). HCI solutions offer a panoply of benefits that can be distinguished from traditional three-tier infrastructure architectures. Those benefits include ease of scalability and management, better economics, hardware flexibility, and ability to quickly integrate new hardware technologies as they become available.

Operational simplicity driven by HCI solutions has become critically important in the infrastructure modernization efforts that most enterprises are now undertaking. As such, this modern architecture will continue to grow and cannibalize revenue from more traditional enterprise infrastructure markets. HCI is expected to remain the most common/dominate choice of global SDI deployments as it expands its presence within mission-critical and next-

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generation workloads (Big Data analytics, artificial intelligence and machine learning [AI/ML], internet of things [IoT], etc.). Global consumption of HCI solutions is expected to nearly double over the next five years as it grows from a $8.8 billion market in 2019 to become a $16.5 billion market by the end of 2023. An important part of this market growth will come from HCI solutions used for on-premises private cloud platforms. While customers continue to deploy public cloud infrastructure and PaaS solutions at a rapid rate, they are also significantly increasing investments in private cloud solutions both in their own datacenters and with a host or managed services provider.

NUTANIX ENTERPRISE CLOUD OVERVIEW

Nutanix offers datacenter infrastructure software used to build enterprise-class private clouds. Built from the ground up to be software defined and hyperconverged, the Nutanix Enterprise Cloud Platform delivers storage, compute, infrastructure management, and monitoring software through a highly virtualized, scale-out architecture. Nutanix provides a resilient pool of abstracted x86 server resources that allow IT administrators to run mission-critical applications efficiently and cost effectively. The company's portfolio of offerings is detailed in the following section. These offerings can be purchased as turnkey appliances with all required software and hardware packaged together from OEMs and partners, as a software-only option that can be deployed on pre-certified, general-purpose servers or as SaaS-based solutions. The Nutanix portfolio of enterprise private cloud solutions can be thought of in terms of a customer journey from infrastructure modernization with HCI to private and hybrid cloud capabilities to advanced functionality and multicloud. An overview of each follows:

- **Nutanix HCI** provides all of the required technologies for companies looking to modernize their IT by moving to a hyperconverged solution. This includes:
  - **AHV** is Nutanix's own enterprise-class hypervisor that is included at no additional license cost. Nutanix AHV can be deployed in lieu of other hypervisors to reduce software licenses and further simplify management and operation. Nutanix also supports VMware ESXi and Microsoft Hyper-V.
  - **Prism** provides a single pane of management and greatly simplifies all aspects of managing Nutanix deployments, including virtual machines, hosts and clusters, networking, and data protection. Prism also provides customers with the insights needed to understand their environments and recommends actions to resolve problems and address capacity concerns that arise. Prism management also provides a comprehensive set of management and monitoring APIs to allow for further automation or integration into broader datacenter tooling.

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  - **AOS** is the core software-based distributed storage fabric that provides Nutanix's enterprise-class data, networking, and virtualization services for all workloads running on the solution.

- **Nutanix private and hybrid cloud capabilities** provide all of the aforementioned products plus essential technologies required to extend beyond infrastructure modernization with HCI. This includes:

  - **Nutanix Calm** is an orchestration platform that automates application deployments and life-cycle management on a customer's premises or within public clouds.

  - **Nutanix Flow** is a software-defined networking product for the compliance and security of virtualized workloads. Flow uses the concept of microsegmentation, which is a more robust solution than the traditional perimeter firewall security. Flow's real-time and application-centric security protects enterprises against data loss and malware spread from internal and external threats.

  - **Nutanix Prism Pro** provides centralized management at scale across clusters and predictive analytics that leverages machine learning algorithms to provide VM-centric capacity forecasting, planning, and optimization tools. Nutanix Prism Pro also provides customers with the ability to automate and optimize everyday tasks and remediation of anomalies or performance problems within their Nutanix environments.

  - **Nutanix Volumes** is a scale-out block storage data store that is natively built into AOS. This allows customers to consolidate traditionally separate physical and virtual infrastructure onto a single Nutanix-based cluster.

  - **Nutanix Files** is a scale-out file store that can be deployed as a standalone NAS replacement or within an existing Nutanix cluster to consolidate structured and unstructured workloads under a single management plane.

  - **Nutanix Mine** is an open platform that natively integrates backup software with Nutanix HCI clusters as secondary storage. Nutanix administrators can use a single pane to manage their HCI environment and backup operations to reduce the cost and complexity of storage management. Nutanix Mine can tier data for archives.

- **Nutanix enterprise and multicloud** bring additional advanced capabilities to HCI and private and hybrid cloud and add other clouds into customer architectures, including SaaS offerings. This includes:

  - **Nutanix Era** provides DBaaS functionality with one-click database (DB) management.

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Administrators can provision, clone, patch, refresh, and backup in just a few minutes. Nutanix Era allows DB admins to define standards for their database provisioning needs and provide end-state–driven provisioning functionality that includes mission-critical cluster and high availability (HA) database deployments. The time-machine functionality in Era powers the one-click database copy and paste operations from any point in time while maintaining QoS for specific SLAs by creating zero-byte database clones and snapshots that are both space efficient and fast to deploy. Era currently supports Oracle, SQL Server, MySQL, and PostgreSQL.

- **Nutanix Karbon** is a container orchestration tool. Karbon simplifies Kubernetes provisioning, operations, and life-cycle management. Karbon is a CNCF-certified Kubernetes distribution that allows enterprise customers to get started in a couple of minutes with a few clicks.
- **Nutanix Move** is an application mobility service that automates VM migrations from third-party hypervisors and AWS to a Nutanix Enterprise Cloud. Nutanix Move delivers the best practice configurations needed for optimal VM performance. Nutanix Move supports nondisruptive replication of VMs via VMware's VADP.
- **Nutanix X-Ray** is a set of enterprise cloud tests that allows customers to test the impacts to performance and application consistency levels of their hyperconverged environments when placed under real-world stress and failure scenarios.
- **Xi Frame** is a cloud-hosted service that securely delivers virtual desktops and applications running on multicloud to end users via a web browser. Frame supports AWS, Azure, GCP, and Nutanix AHV. With one-click simplicity, Frame can orchestrate, provision, and securely deliver desktops as a true hybrid service on a Nutanix cluster or on a public cloud.
- **Xi Leap** is a disaster recovery as a service (DRaaS) for on-premises hosted applications. Leap eliminates the cost, complexity, and uncertainty associated with traditional DR solutions. Leap can protect applications hosted on both Nutanix's AHV virtualization solution and VMware ESXi.
- **Nutanix Objects** is an S3-compatible, software-defined, scale-out object store for customers that want to incorporate object-based storage capabilities into their Nutanix Enterprise Cloud deployments. Nutanix Objects is designed to support terabytes or even petabytes (PBs)-scale environments.
- **Xi Beam** is a SaaS product that helps customers manage their spending, governance, and security across multiple clouds. It delivers cost savings by discovering

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underutilized resources, providing optimal purchase recommendations and workload cost comparison across public and private clouds. Beam also improves cloud security by discovering misconfigured resources and remediating security risks in real time.

- **Xi IoT** helps enterprises rapidly develop and deploy IoT apps at scale by leveraging flexible APIs, reusable data pipelines, and a pluggable machine learning architecture. The Nutanix-hosted Xi IoT (PaaS) provides the agile platform for new-generation apps in a hybrid cloud environment. The Xi IoT App library and marketplace helps developers rapidly innovate IoT applications.

THE BUSINESS VALUE OF NUTANIX ENTERPRISE CLOUD

Study Demographics

IDC conducted research that explored the value and benefits for organizations of running a variety of business applications on the Nutanix Enterprise Cloud Platform. The project included 10 in-depth interviews conducted in 2019 with organizations with experience with or knowledge about its benefits and costs. The interviews covered a variety of quantitative and qualitative questions about the impact of Nutanix Enterprise Cloud on their IT costs and operations and businesses.

Table 1 presents study demographics for interviewed Nutanix customers. Overall, interviewed organizations shared the profile of a large enterprise, with average 31,682 employees and annual revenue of $8.99 billion (medians of 5,000 employees and revenue of $1.0 billion, respectively). Study participants represented North America (6), APAC (3), and EMEA (1) and provided experiences from a number of different industry verticals, including: financial services (2), higher education (2), IT services (2), insurance, entertainment, government, and healthcare.

TABLE 1 Firmographics of Interviewed Organizations

	Average	Median
Number of employees	31,682	5,000
Number of IT staff	794	200
Number of business applications	213	150
Revenue/budget per year (billion)	$8.99	$1.0
Countries	United States (6), Belgium, Australia, New Zealand, and Japan	
Industry verticals	Financial services (2), higher education (2), IT services (2), insurance, entertainment, government, and healthcare	

Source: IDC, 2020

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Choice and Use of the Nutanix Enterprise Cloud Solution

The organizations interviewed discussed the rationale behind their choice of Nutanix Enterprise Cloud Platform primarily as a replacement for more distributed traditional (often described as three tiered) infrastructure approaches. Interviewed customers cited factors common to their decision-making processes such as ease of management, the ability to flexibly add compute and storage capacity, as well as Nutanix's focus on driving business value for its customers and its continuing leadership in hyperconverged infrastructure solutions. Study participants elaborated on their choice of Nutanix:

- **Nutanix Enterprise Cloud at forefront of HCI:** *"We needed a platform for our business and Nutanix started offering hyperconverged infrastructure appliances and showed the future road map for SDDC by including compute and cloud that brings scalability and maintainability."*
- **Ease of management and flexibility:** *"We were running more of a three-tier architecture environment and we've reduced the number of FTEs that have to focus on management with Nutanix. Also Nutanix Enterprise Cloud has allowed us to be very flexible in increasing capacity, if needed, by adding another node and additional storage."*
- **Nutanix understands business value:** *"Nutanix is interested in creating and driving business value for us, while other companies focused on selling boxes … With Nutanix, the discussion was more around creating value for us and being connected."*

Table 2 describes organizational usage associated with the use of the Nutanix Enterprise Cloud Platform. There was a substantial Nutanix footprint across organizations interviewed with an average of 494 Nutanix Enterprise Cloud nodes running 3,678 VMs, with 127 business applications used by 28,682 users, of which 973 were using VDI. From a broader perspective, most interviewed Nutanix customers described leveraging the platform to drive increased virtualization across their IT environments and to create or expand their private cloud environments.

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TABLE 2 Nutanix Use by Interviewed Organizations

	Average	Median
Number of datacenters	5	3
Number of Nutanix nodes	494	100
Number of VMs	3,678	1,000
Number of business applications	127	88
Number of users	28,682	5,000
Number of VDI users	973	275
Percentage of revenue	64	90

Source: IDC, 2020

The extensive use cases for interviewed organizations of the Nutanix Enterprise Cloud Platform, including diverse applications that include VDI, ERP, financial, Big Data analytics, medical files, and other business applications, reflect an increasing understanding on the part of Nutanix customers that it can serve as a primary IT infrastructure platform across business operations. This is reflected in these organizations running well over half of all business applications on Nutanix, with around 90% of employees using these applications on a day-to-day basis. The Nutanix use cases described by interviewed organizations in this study compare with more limited use in previous studies conducted by IDC (see Appendix B for a comparison of Nutanix use across IDC Business Value studies).

Business Value and Quantified Benefits

Study participants reported that their use of Nutanix Enterprise Cloud has enabled their business operations through improved agility, security, and performance while also providing an efficient and cost-effective IT infrastructure foundation that can run various enterprise-level applications. When asked about the impact of using Nutanix on their IT and business activities, they returned to these common themes:

- **Faster time to market and better performance:** *"With Nutanix Enterprise Cloud, we're faster to market for application development and deployment. Also we don't have any serious issues running Nutanix, which contributes to user satisfaction and indirectly to revenue growth."*
- **Improved agility and data protection:** *"Improved agility has been a big benefit with Nutanix Enterprise Cloud, as have other features that come with it; for example, data backup, replication, and disaster recovery."*

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- **Ease of management and reliability:** *"The most significant benefit of Nutanix Enterprise Cloud is ease of management. It takes less staff time and our team is more productive. Also Nutanix is always up. We used to have a lot of downtime due to technical configuration issues, but we really don't have downtime now."*

Deployment of Nutanix Enterprise Cloud has generated significant value for interviewed organizations through operational efficiencies in the form of higher user and IT staff productivity, increased revenue, and lower IT infrastructure costs. IDC projects that the total value that these Nutanix customers will realize will be an annual average of $13.44 million per organization (approximated to $46,876 per 100 employees/IT end users) over five years in the following areas (see Figure 1):

- **Business productivity benefits:** Improved IT agility, scalability, and performance lead to operational efficiencies in the form of higher user productivity and improved business results. IDC calculates the value of higher user productivity and revenue at an annual average of $7.83 million per organization ($27,304 per 100 users).
- **Risk mitigation — user productivity benefits**: Reduced frequency and duration of unplanned outages means improved business continuity and lower costs associated with business outages. IDC quantifies the value of higher user productivity and revenue related to reduced unplanned downtime at an annual average of $2.93 million per organization ($10,210 per 100 users).
- **IT staff productivity benefits:** Automated and software-driven IT environments mean that study participant must devote less IT staff time to deploying, managing, supporting, and securing their Nutanix environments while application development teams benefit from enhanced agility and scalability. IDC projects that IT staff efficiencies and productivity gains will be worth an annual average of $2.30 million per organization ($8,031 per 100 users).
- **IT infrastructure cost reductions:** Consolidated and high-performing Nutanix Enterprise Cloud deployments not only cost less than comparable three-tiered environments but deliver cost savings related to licensing, power, and facilities. IDC calculates that these savings will be worth an annual average of $381,300 per organization ($1,331 per 100 users).

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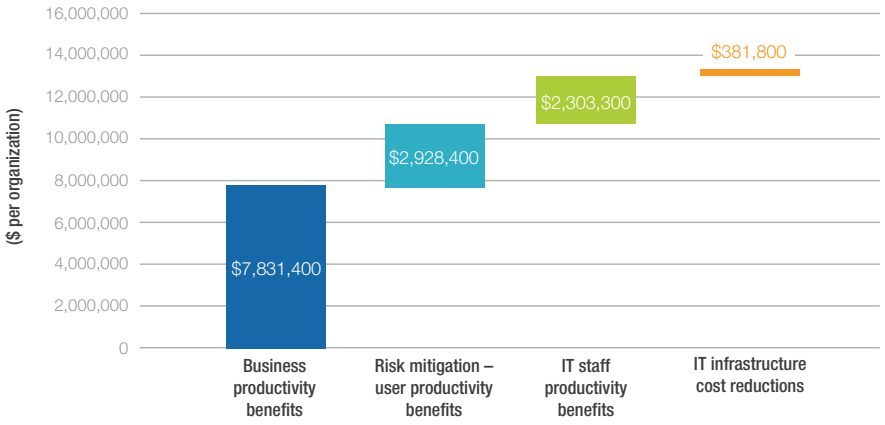
FIGURE 1 Average Annual Benefits per Organization



Total average annual benefits: $13.44 million per organization

Source: IDC, 2020

Business and Operational Benefits

Study participants explained that they have taken advantage of Nutanix Enterprise Cloud to enable their business operations. With Nutanix, they can better meet demand from employees and customers for timely, relevant, and high-performing business applications and services. Meanwhile, they also stressed their improved ability to minimize risk related to business operations with Nutanix through improved overall platform performance and functionalities related to data protection and security. The result for interviewed Nutanix customers is substantial operational efficiencies in the form of higher user productivity as well as revenue gains from addressing and winning more business opportunities.

Improved IT Agility in Delivering Storage and Compute Resources

Study participants described how they have leveraged Nutanix Enterprise Cloud to significantly improve their agility in terms of deploying and upgrading their core compute and storage environments. For interviewed Nutanix customers, being able to provision these IT resources in significantly less time means responding to business needs in a timely manner and enabling development teams to work more effectively. Study participants cited various capabilities of the Nutanix software as contributing to enhanced IT agility, including having a common pool of storage and compute resources, the ability to easily add capacity to their Nutanix environments, automated provisioning of resources, and offering self-service to users. Study participants commented:

- **Much faster deployment of storage:** *"With Nutanix, we can deploy new storage very quickly in around 10 minutes, compared with 1–4 hours previously."*
- **Agility through ease of adding capacity rather than upgrading:** *"We don't really have to do system upgrades anymore with Nutanix because it's similar to using Legos. As things get to end of life, we just bring in a new node and slap it in."*

Nutanix customers have substantially impacted their ability to deploy and upgrade storage (see Table 3). They reported needing less than three days on average to deploy new storage with Nutanix, which is 82% faster and requires 85% less staff time than previously. Likewise, they reported being able to upgrade their storage environments much more efficiently, 70% faster on average and with 66% less staff time required.

TABLE 3 Impact on IT Agility, Storage

	Previous/Other Solution	With Nutanix Enterprise Cloud	Difference	Percentage Benefit with Nutanix
Deployment of new storage systems				
Time to deploy new storage system (days)	14.1	2.6	11.5	82
Staff time to deploy per system (hours)	13.4	2	11.3	85
Storage system upgrades				
Time required per storage system (days)	1.3	0.4	0.9	70
Staff time to upgrade per system (hours)	7.5	2.5	5	66

Source: IDC, 2020

Interviewed Nutanix customers also benefit from faster deployment of compute, including new servers and virtual machines. They can deploy new physical servers over two times faster than previously and can spin up new VMs 42% faster and with 44% less staff time required (see Table 4).

TABLE 4 Impact on IT Agility, Compute

	Previous/Other Solution	With Nutanix Enterprise Cloud	Difference	Percentage Benefit with Nutanix
Deployment of new physical servers				
Time to deploy new physical server (days)	2.5	1.2	1.3	53
Staff time to deploy per server (hours)	9.1	4	5.1	56
Deployment of VMs				
Time required per VM (hours)	1.4	0.8	0.6	42
Staff time required per VM (hours)	0.9	0.5	0.4	44

Source: IDC, 2020

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Impact of Improved Agility on Application Development Activities

Interviewed Nutanix customers, like most organizations, rely on their software development teams to deliver timely and impactful applications, features, and upgrades to their employees and customers. Study participants explained that improved IT agility with Nutanix enables developers by reducing or nearly eliminating friction associated with IT infrastructure affecting their work. With Nutanix, these teams can more easily access storage and compute resources they need to carry out testing and deployment activities associated with development. Interviewed organizations linked improved visibility and reduced time to provision these IT resources to improved performance of their development teams:

- **Improved visibility for developers of IT resources and status:** *"Nutanix Prism contributes to the visualization of our IT infrastructure, which helps developers easily understand IT infrastructure resource use and load status of VMs."*
- **Faster to market and improved performance:** *"Our go-to-market speed has increased quite significantly with Nutanix. In terms of performance, when we have issues it's now mainly the applications and not the infrastructure. I think we have fewer issues with Nutanix. There are fewer issues in the production environment according to our customers and staff."*
- **Flexibility to meet business demand:** *"In the past, the business was not as agile as it is now with Nutanix because we can react much faster. So if our business wants to implement something, we can say: yes, no problem, we can do that."*

Table 5 reflects the impact of Nutanix on the volume and frequency of new applications and features. With Nutanix, study participants bring more entirely new applications (7%) and new features (15%) to their businesses while requiring less time to complete development life cycles (27% faster for new applications and 9% faster for new features, respectively). These metrics that reflect improved development performance also mean that developers are delivering more value to their organizations. On average, study participants reported that their developers working on the Nutanix Enterprise Cloud are 19% more productive, representing a significant increase in value for these teams.

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TABLE 5 Application Development, KPIs

	Previous/Other Solution	With Nutanix Enterprise Cloud	Difference	Percentage Benefit with Nutanix
Development volume				
Number of new applications per year	13.8	14.8	1.0	7
Number of new features per year	127.5	142.5	15%	12
Development life cycle (weeks)				
New applications	21.3	15.7	5.7	27
New features	10	9.1	0.9	9

Source: IDC, 2020

Minimizing Operational Risk

Interviewed organizations reported that they have improved their business continuity and reduced operational risk by reducing the frequency of unplanned outages affecting applications and services running on their platforms and having more robust data backup and recovery environments. In particular, they cited benefitting from having a single view of their IT environments with Nutanix Prism as well as having improved disaster recovery and failover capabilities. Study participants commented on these and other benefits:

- **High availability means business continuity:** *"With Nutanix, we're now up in the five-nines for availability because problems with hardware and the operating system are near zero … Revenue loss with Nutanix due to outages is nominal and we don't hear about it in our board meetings anymore. We're gaining back hundreds of thousands of dollars a year."*
- **Ability to do more frequent and timely data backups:** *"Our backup window objective has been reduced with Nutanix because we're not doing serial backups across hundreds of servers. It's around a 60% reduction."*
- **Use cost savings for backup environment:** *"Nutanix helped us reduce costs of operating and with the savings we duplicated our environment, basically paying for a second datacenter."*

Nutanix customers are achieving substantial improvements in key metrics related to data backups, recovery efforts, and failovers. Figure 2 shows the improvements with respect to data-related KPIs, all of which come back to these organizations' ability to use and handle data with a minimum of risk. As shown, these organizations have not only significantly reduced the impact of unplanned downtime (85%) but have realized substantial improvements in metrics related to data backups and recovery, including 72% more frequent data backups, 41% faster data recovery windows, 36% reduction in data backup windows, and more than one-quarter

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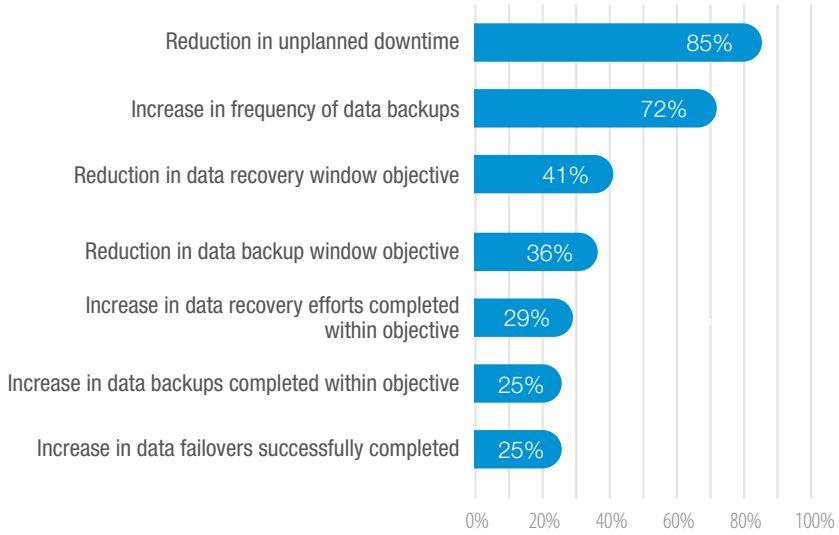
increase in the number of data recoveries, backups, and failovers meeting even more stringent target windows.

FIGURE 2 Impact on Data-Related KPIs



Source: IDC, 2020

As noted, interviewed organizations have substantially reduced the frequency with which they face business interruptions due to unplanned outages with Nutanix Enterprise Cloud. They not only must handle fewer unplanned outages (78% fewer) but improved visibility, automated failover, and less complexity allow them to limit the duration of unexpected outages (67% faster to resolve on average). As a result, these Nutanix customers have reduced the cost of unplanned downtime related to lost user productivity during outages by an average of 85%, going from over 3 hours of lost productive time per user per year to around 30 minutes (see Table 6).

TABLE 6 Impact on Unplanned Downtime

	Previous/Other Solution	With Nutanix Enterprise Cloud	Difference	Percentage Benefit with Nutanix
Number of unplanned outages per year	18.6	4.1	14.5	78
MTTR (hours)	3.4	1.1	2.3	67
Hours of lost productive time per user per year	3.3	0.5	2.8	85
Value of lost productive time per organization per year (FTEs)	50.9	7.4	43.4	85
Equivalent value of lost productive time per organization per year	$3.56 million	$0.52 million	$3.04 million	85

Source: IDC, 2020

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Providing a Business-Enabling IT Platform

The previously described agility and performance benefits of using Nutanix Enterprise Cloud have real-world implications for the organizations surveyed. They are running a variety of enterprise business applications on their Nutanix deployments, used by thousands of employees and customers on a daily basis. These enterprise applications include performance-sensitive applications that not only include VDI but also datacenter information management systems, ERP activities, financial and HR systems, student administrative systems, medical records systems, Big Data analytics activities, and important governmental databases and activities. For study participants, benefits related to their use of Nutanix are manifested in both operational efficiencies from higher user productivity levels and having an IT platform that enables them to better run their day-to-day operations and address business opportunities.

Study participants noted various ways that Nutanix has positively impacted their business activities:

- **Faster onboarding of new branches/partners to generate business:** *"We're opening and closing branches almost daily. We can get new branches onto the platform with Nutanix in literally 20 minutes compared with more than a day before."*
- **Much improved customer satisfaction:** *"We run a customer satisfaction survey. We've gone to almost a 100 rating with Nutanix compared with around 35 before Nutanix. That's a big jump."*
- **Ability to focus on business generates more revenue:** *"We're able to better support our business with Nutanix by serving our customers faster and having fewer outages. This results in higher revenue — 1–2% higher."*
- **Faster to stand up environments means quicker to cash:** *"Nutanix is quicker to cash, meaning we're able to stand up environments much more quickly than we could with our three-tier environment, which is huge for us."*

With Nutanix Enterprise Cloud, study participants described having an IT platform that better supports business activities. In particular, they benefit from having greater flexibility in addressing business opportunities in a timely manner and delivering high-quality services and products to their customers. The result is higher revenue, which IDC quantifies at an average of $932,800 per organization per year (see Table 7).

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TABLE 7 Business Operations Impact: Revenue

	Per Organization	Per 100 Users
Business impact — Revenue from better addressing business opportunities		
Total additional revenue per year	$932,800	$3,300
Assumed operating margin	15%	15%
Total recognized revenue per year (IDC model)	$139,900	$500
Unplanned downtime impact — Revenue gained		
Revenue gained per year	$499,500	$1,700
Assumed operating margin	15%	15%
Total recognized revenue per year (IDC model)	$74,900	$300

Source: IDC, 2020

Another key area of enablement from using Nutanix Enterprise Cloud for study participants related to the productivity of VDI users. Substantial numbers of employees at these organizations rely on VDI to access critical business applications, and their ability to effectively leverage VDI applications depends on performance and accessibility. Study participants reported improving both with Nutanix, benefiting from faster VDI application performance and the ability to more easily extend their VDI environments. As a result, the 973 employees on average at these organizations — including healthcare and education organizations — who use VDI for their day-to-day work are noticeably more productive (5.6% on average) (see Table 8).

TABLE 8 Business Operations Impact: User Productivity, VDI Users

	Per Organization	Per 100 Users
Number of users impacted	973	3.4
Average net productivity gain	5.60%	5.60%
Equivalent net productivity gain in FTEs per organization	54	0.2
Total recognized value of higher productivity per year (IDC model)	$3.80 million	$13,200

Source: IDC, 2020

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In addition to VDI, users of other applications, including the business-critical applications mentioned previously, also benefit from enhanced performance with Nutanix Enterprise Cloud, allowing them to work more effectively. Table 9 provides a view of user productivity gains for other users. As shown, on a per organization basis, over 6,000 employees are more productive — and therefore delivering more value to their organizations — with Nutanix.

TABLE 9 Business Operations Impact: User Productivity, Other

	Per Organization	Per 100 Users
Number of users impacted	6,440	22
Average net productivity gain	1.00%	1.00%
Equivalent net productivity gain in FTEs per organization	63	0.2
Total recognized value of higher productivity per year (IDC model)	$4.40 million	$15,300

Source: IDC, 2020

IT Staff and Cost Benefits

In addition to enabling their business operations with improved agility, reliability, and performance, study participants also reported making their IT environments more efficient and cost effective with Nutanix Enterprise Cloud. As a result, they can run equivalent workloads at a significantly lower cost — 62% on average over five years including the reduced cost of lost user productivity due to unplanned downtime (see Figure 3) — and help establish IT organizations as business partners rather than remaining in more of a supporting position.

More Efficient IT Staff

Study participants spoke to IDC about how Nutanix Enterprise Cloud served to improve the efficiency of their core IT teams, including staff responsible for deploying, managing, supporting, securing, and protecting their Nutanix environments. Study participants cited valuable features and capabilities such as having a single point of management with Nutanix Prism for hardware, hypervisors, and VMs; the quality of the user interface; and efficiencies related to having consolidated and common pools of compute and storage resources. Overall, interviewed Nutanix customers view these efficiencies as an opportunity to deliver more value through their IT teams, including reallocating staff time to business- and innovation-enabling projects. Study participants commented on these and other benefits:

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- **Ease of management translates to time to spend on improving IT more broadly:** *"Nutanix is just easier for people to manage … With efficiencies, we've focused on new initiatives like automation and we can actually spend a lot of time on cleaning up our IT environment. That's outside of the day-to-day stuff. Those other things need attention."*
- **Higher staff satisfaction, more efficient management:** *"We've seen higher satisfaction from our engineers with Nutanix. They love it. We need to dedicate fewer engineers to the platform, and Prism and AHV are very helpful."*
- **Benefits of Nutanix Prism across IT teams:** *"Nutanix Prism enables us to avoid using multiple management interfaces by providing a single interface. Prism reduces maintenance workloads by 'one click' upgrades and reduces operational workloads by capacity planning and resource demand forecast, making it easy to use even for less-skilled staff."*

For study participants, staff efficiencies with Nutanix extended across a number of teams and activities (see Table 10):

- **Deployment:** *The consolidated and software-driven nature of Nutanix Enterprise Cloud means that deployment occurs faster and requires less staff time. On average, study participants reported needing 57% less time to deploy Nutanix than equivalent alternative infrastructures.*
- **Infrastructure management:** *Nutanix Prism provides a common and automated management platform that enables more efficient day-to-day infrastructure management activities. Interviewed organizations attributed a 58% average efficiency of these teams to using Nutanix Enterprise Cloud.*
- **Help desk support:** *Improved reliability and visibility mean that fewer infrastructure-related tickets must be handled with Nutanix Enterprise Cloud, generating a 61% average efficiency for help desk teams.*
- **Security management:** *Customers benefit with Nutanix Enterprise Cloud from having a single, robust infrastructure platform with strong automation capabilities to make their security efforts more efficient, which IDC puts at 28% on average.*
- **Data protection activities:** *Built-in capabilities of the Nutanix Enterprise Cloud enable more robust and timely data backups and recovery efforts, as discussed previously, driving a 31% average efficiency for data protection teams at these organizations.*

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TABLE 10 IT Staff Impact

Staff Time Required for Infrastructure for Equivalent Workloads (FTEs per Organization)	Previous/Other Solution	With Nutanix Enterprise Cloud	Difference	Percentage Efficiency with Nutanix
Infrastructure deployment	2.8	1.2	1.6	57
Infrastructure management	17.0	7.1	9.9	58
Help desk support	5.0	2.0	3.0	61
Security management	5.5	3.9	1.6	28
Data protection activities	5.7	3.9	1.8	31

Source: IDC, 2020

These IT staff efficiencies benefit both IT teams and the businesses they serve. Study participants emphasized that businesses benefit from having IT operations that can focus on enablement, and IT organizations become more integral to their businesses. One study participant commented: *"We're repurposing staff with Nutanix to get closer to the business. In the past, our IT team was often just order takers. Now, we are more engaged with the business."*

More Cost-Effective IT Infrastructure

Nutanix Enterprise Cloud serves as a more cost-effective IT infrastructure than study participants' legacy infrastructure or other approaches they considered. Overall, IDC calculates that study participants will spend 38% less over five years building out and running their Nutanix environments in terms of hardware, maintenance fees, and power/facilities costs. In addition, they reported realizing hypervisor and other licensing cost savings (average of $1,153 per 100 users per year) with Nutanix by using Nutanix's included hypervisor (AHV), embedded data recovery capabilities, and requiring fewer application licenses with consolidated hardware environments. Study participants described specific infrastructure cost savings related to:

- **Avoiding the need for SANs:** *"With Nutanix, we've been able to get rid of around 10 large storage frames that cost millions of dollars. Overall, we have about the same number of PB, it's just that it was a massive amount of hardware before Nutanix."*
- **Other hardware consolidation:** *"If we had stayed with our legacy three-tiered approach, we would have needed more physical servers. We're more efficient with Nutanix because we can run multiple workloads on each Nutanix node. With our previous approach to architecting our infrastructure, we would probably need around double the number of physical servers."*

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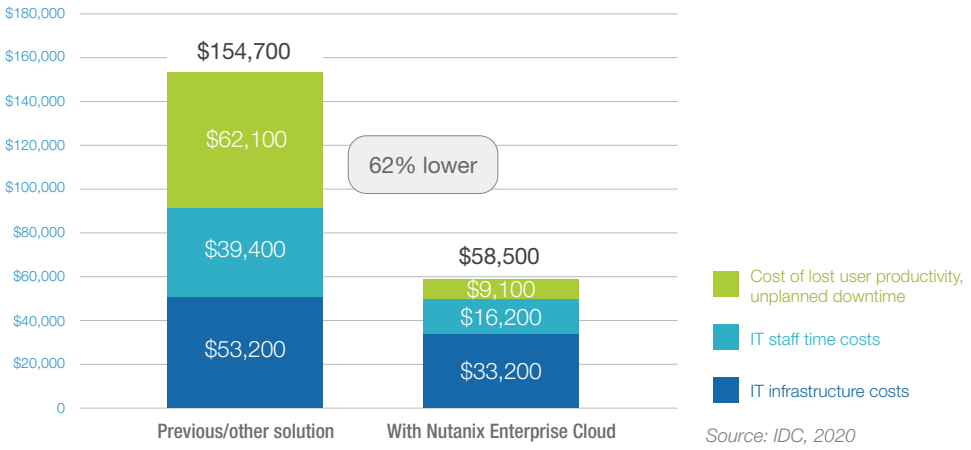
- **Operational efficiencies:** *"With Nutanix, we've gone from about 35 racks of equipment down to 3 racks, so that saved us a lot of space. Nutanix takes about 20% of the power of our previous environment."*

Lower Cost of Operating IT Infrastructure

As noted, Nutanix Enterprise Cloud enables study participants to run equivalent applications and workloads at a significantly lower cost — 62% lower on average — than their legacy or alternative environments taking into account the cost of hardware, IT staff time costs, and the cost of lost user productivity related to unplanned downtime. This means a savings of more than $95,000 per 100 users over five years (see Figure 3), demonstrating the significant value interviewed organizations are achieving through efficiencies, cost savings, and higher availability with Nutanix Enterprise Cloud.

FIGURE 3 Five-Year Cost of Operations per 100 Users



Source: IDC, 2020

ROI Summary

IDC's analysis of the financial benefits related to study participants' use of the Nutanix Enterprise Cloud solution is presented in Table 11. IDC calculates that, on a per organization basis, interviewed organizations will achieve total discounted five-year benefits of $47.71 million ($166,300 per 100 users) based on higher staff productivity, improved business results, and lower costs as described. These benefits compare with projected total discounted investment costs over five years of $8.27 million on a per organization basis ($28,800 per 100 users). At these levels of benefits and investment costs, IDC calculates that these organizations will achieve a five-year ROI of 477% and break even on their investment in nine months.

TABLE 11 Five-Year ROI Analysis

Five-Year ROI Analysis	Per Organization	Per 100 Users
Benefit (discounted)	$47.71 million	$166,300
Investment (discounted)	$8.27 million	$28,800
Net present value (NPV)	$39.44 million	$137,500
ROI (NPV/investment)	477%	477%
Payback (months)	9	9
Discount factor	12%	12%

Source: IDC, 2020

CHALLENGES/OPPORTUNITIES

Organizations around the world are leveraging software-defined, hyperconverged infrastructure to simplify datacenter operations and create a seamless "lingua franca" between multiple cloud platforms. First born within public cloud datacenters, hyperconvergence has now become a standard platform for enterprise private clouds. As such, today's hyperconverged solutions must offer features needed to provide a private cloud with true public cloud capabilities. Today's hyperconverged solutions must also provide highly automated management software that enables holistic operations of private and public cloud platforms. This includes cross-platform visibility into resource utilization, performance, and costs, as well as automated application mobility between platforms.

CONCLUSION

Organizations increasingly require private cloud environments that can deliver the cost efficiencies and agility of public cloud solutions with robust security and performance. Hyperconverged infrastructure has become a preferred platform for organizations deploying and extending enterprise private clouds. Nutanix Enterprise Cloud solutions are a significant player in the broader hyperconverged infrastructure market, delivering storage, compute, infrastructure management, and monitoring software through a highly virtualized, scale-out architecture.

This IDC study confirms the strong value proposition of Nutanix Enterprise Cloud solutions for enterprise customers, even as they scale up their use of Nutanix to support more applications,

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users, and customers. Study participants described increasing their IT agility and performance to support employees and business operations while benefiting from reduced operational risk from having a robust infrastructure platform with built-in capabilities for backing up, recovering, and protecting their data. Further, they stressed the continued centrality of lowering infrastructure costs and enabling various IT teams to operate as efficiently as possible, thereby maximizing these teams' value. Overall, IDC calculates that this sample of Nutanix Enterprise Cloud customers will achieve a five-year ROI of 477%, demonstrating the strong value relative to their investment that they are achieving.

APPENDIX A

Methodology

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from current users of Nutanix Enterprise Cloud as the foundation for the model. Based on interviews with organizations using it, IDC performed a three-step process to calculate the ROI and payback period:

- Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of Nutanix Enterprise Cloud. In this study, the benefits included staff time savings and productivity benefits, IT cost reductions, and higher revenue.
- 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 Enterprise Cloud and can include additional costs related to migrations, planning, consulting, and staff or user training.
- Calculated the ROI and payback period. IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Nutanix Enterprise Cloud 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 a number of 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 $100,000 per year salary for IT staff members, and an average

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fully loaded salary of $70,000 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.
- Further, because IT solutions require a deployment period, the full benefits of Nutanix Enterprise Cloud are not available during deployment. To capture this reality, IDC prorates the benefits on a monthly basis 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 B

Comparison of IDC Business Value Study Firmographics for Nutanix Studies

This study represents the third time that IDC has quantified the value of Nutanix hyperconverged solutions. Notably, with each study, interviewed organizations are running more workloads and applications on their Nutanix deployments from both an absolute and relative perspective. Table 12 compares key metrics regarding the use of Nutanix hyperconverged-based solutions by interviewed organizations in this study as well as IDC's 2015 and 2017 studies.

TABLE 12 Comparison of IDC Studies (Averages)

	2015	2017	2020	2020 versus 2015
Number of employees	4,094	12,331	31,682	7.7x more
Revenue/budget	NA	$4.4 billion	$8.99 billion	NA
Number of VMs	277	861	3,678	13.3x more
Number of business applications	31	63	127	4.1x more
Number of users	2,350	8,301	28,682	12.2x more

Note: IDC interviewed a different sample of Nutanix customers for each study.

Source: IDC, 2020

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APPENDIX C

Compilation of Customer Quotes

This Appendix includes other selected quotes from interviewed Nutanix customers that do not otherwise appear in this study.

- *"I've been doing IT for decades and worked with only one company that I'd say is a true partner with us. I reserve that name 'partner' because everyone wants to partner with you. Nutanix is one of the few companies, and they are the only one right now, where they listen to what we need and they actively come back and exceed our expectations over and over again."*
- *"All aspects regarding quality, cost, and delivery have been beneficial for us with Nutanix. Another significant benefit is that we've reduced silos that makes life-cycle management easier. Simplification of operational management brings us cost reduction and less trouble as well as increasing the capability of our operational staff."*
- *"We've cut back on the number of servers we need because of efficiencies with Nutanix … With Nutanix, we've increased vastly the amount of capacity, so the number of servers we have would not be enough for what we've done with Nutanix. We would have needed SAN and servers for new projects for which we haven't had to buy any new hardware with Nutanix because of consolidation, strong capacity, and the ability to right size via compression with the Nutanix software."*
- *"Nutanix has increased our agility and allows us to deliver applications quicker … We're using a self-service portal with Nutanix — this was work that system administrators previously had to do, and we've been able to rededicate one full person to doing business analyst work because of self-service."*
- *"Nutanix ships with internal tools that have made it far easier for us to manage data protection and replication … We have two full-time backup administrators with Nutanix, compared with four before. They are also more productive — 30% more productive."*
- *"I typically do M&A cleanup with companies. I come in and fix their IT departments after a merger, when they didn't get the business value that*

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they anticipated … When I joined this company, we had that same issue where IT units were never fully integrated, and I said that we can't do any more mergers because IT will collapse … And then about a year ago — with Nutanix — I told them that if you want to do a merger, we can easily manage that now even with a company the size of ours or possibly larger."

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