

HPE NIMBLE STORAGE DHCI WINS BEST OF VMWORLD 2020 FOR VIRTUALIZATION & CLOUD

What the judges said: "Nimble dHCI turns your current servers into an enterprise [hyper-converged infrastructure] solution, including automation and single-pane-of-glass management."





Best Performance

Sub 1ms latency for Performance critical application
Siloed workloads to reduce noisy neighbor et.



Simple to Deploy

Software-defined infrastructure abstracted from hardware
Policy-based automation eliminates manual processes

HCI 2.0 Combined Delivery



Highest Availability

Data management features built in. Replication, snaps
Resilient and redundant Zero impact fault tolerance



Easy to Manage

Unified management eliminates resource silos
Single pool of resources directly through vCenter



Granular Recovery

Workload integration with data management features
Integrated and direct back-up to remote location



High Utilization

Accommodates many and varied workloads
New economic models. PAYG, XaaS etc.





Sponsored by: **HPE**

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Business Value Highlights

487%
five-year ROI

49%
reduced total cost of operations

7 months
to payback

62%
more efficient IT storage staff

36%
less staff time spent on keeping the lights on

59%
improved storage deployment agility

69%
reduced unplanned downtime

\$4.6 million
revenue saved due to improved performance

32%
more productive application development

HPE Nimble Storage Delivers Business Value to Enterprises Through Enhanced Performance, Availability, and Productivity

EXECUTIVE SUMMARY

As enterprises across all industries embark on digital transformation (DX), the evolution toward much more data-centric business models, a large percentage of enterprises will inevitably be refreshing their storage infrastructures. Recent IDC research in 2020 indicates that slightly more than a third of enterprises that have already embarked on their DX journey will be making this decision in the next two years. For most of those customers, this will mean deploying storage that can deliver consistent sub-millisecond performance at scale, exhibit “six-nines” (99.9999%) plus availability, and leverage artificial intelligence (AI) and machine learning (ML) to improve and optimize storage management. With these storage infrastructure enhancements, these customers are also looking for a simpler management experience and seamless cloud integration that support their hybrid cloud strategies.

The portfolio of HPE Nimble Storage arrays meets these requirements. IDC interviewed nine organizations running enterprise workloads supported by this HPE platform. The survey data obtained and applied to IDC’s Business Value model showed that study participants realized significant value with HPE Nimble Storage. In the wake of their storage technology refresh, IDC calculates that these companies will achieve average annual benefits of \$3.06 million per organization, which would result in a seven-month payback and a return on investment (ROI) of 487%, by:

- Enabling more efficient IT and storage infrastructure staff productivity while shifting staff focus away from routine tasks and projects and toward innovation and business support
- Enhancing performance and the agility associated with deploying and managing storage resources while lowering the cost of operations

- Using IT and storage team's operational benefits to foster improved application development and administrative productivity
- Minimizing unplanned downtime, thereby protecting revenue and lowering business risk

SITUATION OVERVIEW

Information technology (IT) organizations the world over are embarking on DX, the evolution toward much more data-centric business models that are needed to stay abreast of market developments. The pace of change is fast, and many enterprises are finding that their legacy IT infrastructures are challenged in providing the performance, availability, ease of use, and agility needed in the new digital era. Primary research by IDC in 2020 indicated that, over the next two years, over two thirds of the enterprises undergoing DX will be refreshing their storage infrastructures, and in doing so, they will be seeking to enhance their cybersecurity capabilities, leverage more cloud-based and solid state storage technologies, and improve the efficiency of IT operations.

As enterprises evolve their storage infrastructures, many are moving toward hybrid cloud strategies that ultimately provide three deployment options for workload placement: traditional on-premises IT infrastructure, private cloud infrastructure, and public cloud infrastructure. Modern storage systems need to be able to tier data to and access data from the cloud without necessarily requiring manual intervention and, as such, should include support for relevant APIs so they can be integrated into cloud-based automated workflows. They need efficient data movement technologies and, to this end, should offer a portfolio of replication options. And taking a cue from customers' familiarity with and penchant for public cloud-based services, some vendors are focusing on providing a more "cloudlike experience" for on-premises IT infrastructure, providing simple provisioning, nondisruptive scalability and multigenerational technology refresh, and subscription-based product licensing models.

Enterprises are capturing, storing, protecting, and analyzing more data than ever before. IT administrators are managing more storage capacity and adding new workflows. Ease of management is a critical concern as enterprises refresh their storage infrastructure, and enterprises are turning to artificial intelligence-driven management tools and increasing the level of automation they're using. Among the more established enterprise storage providers, several of them have introduced cloud-based predictive analytics platforms that go far beyond the monitoring aspects of legacy telemetry systems, leveraging AI/ML to much more comprehensively monitor and manage system health. The best of these systems go beyond just storage, monitoring logical objects such as virtual machines and applications as well as

other hardware products such as servers. The data that is collected is stored securely in the cloud and analyzed to proactively avoid failures, dynamically optimize systems for increased efficiency, aid in performance and capacity planning, more broadly disseminate best practices within a vendor's installed base, and pre-validate upgrades to lower risk, among many other things. These types of AI/ML-driven systems completely transform the support experience while significantly improving performance, availability, administrative productivity, and the reliability of operations.

Storage technology refresh can bring other efficiencies as well. The lower latencies delivered by solid state devices enable the inline use of various data reduction technologies (thin provisioning, compression, deduplication, etc.) that can significantly improve storage capacity utilization. Many vendors offer data reduction guarantees so customers can better plan purchases and ultimately enjoy more efficient use of storage resources.

More software-defined architectures deliver a configuration flexibility that better enables workloads with very different I/O profiles to be hosted on the same platform without putting performance and availability service-level agreements (SLAs) at risk. Software-defined flexibility also makes it easier to non-disruptively accommodate multigenerational technology upgrades. When combined with other multitenant management features (e.g., granular data services that can be applied at the application level, RBAC, quality of service, and other factors), this type of flexibility enables denser workload consolidation, potentially allowing customers to reduce the number of storage platforms and/or storage vendors with whom they interact. Administrators will also want to ensure that new storage systems they are considering support the APIs needed for automated workflow integration. Popular ones for VMware environments include Virtual Volumes (VVols) and VMware APIs for Data Protection (VADP), but IT managers should also look for support for containers (Container Storage Interface [CSI]) and cloud integration APIs (such as S3 and other REST APIs).

When upgrading storage infrastructure on technology refresh, customers will note that newer arrays deliver much higher performance, are more highly available, and are much easier to manage than legacy storage systems. Their burst capability allows customers to locate latency-sensitive transactional databases, enterprise applications, IT infrastructure workloads (file, print, network, and security), and spiky workloads such as VDI all on the same system without having to overprovision storage or put SLAs at risk. They are architected for more efficient resource utilization, consume less energy and floorspace on a terabyte-per-Unit (TB/U) basis, and are well instrumented for use with automation and orchestration tools.

HPE NIMBLE STORAGE OVERVIEW

HPE Nimble Storage is HPE's block-based midmarket storage offering (although an optional file services gateway is available as well). Available in several all-flash models (as well as hybrid models), the portfolio spans from 6TB to up to 4PB of effective storage capacity. An enterprise-class array, each system comes with the flash-optimized Nimble Storage OS (featuring the vendor's unique Cache Accelerated Sequential Layout [CASL] technology) and a full complement of advanced data services, including thin provisioning, inline data reduction, Triple+ Parity RAID, snapshots, RBAC, encryption, quality of service, and sync and async replication, and carries a six-nines availability guarantee.

HPE Nimble Storage is NVMe ready and today supports both NAND flash-based and Intel Optane-based SSDs (storage-class memory that is used as an enhanced cache). It also features cloud integration capabilities that support the data movement needed in today's hybrid cloud environments. HPE Cloud Volumes, a component of HPE's cloud integration portfolios that ships with every array, delivers secure data mobility, reliable data durability, cost-effective cloud economics, and a simple way to leverage cloud-based data protection. Host connection options include both Fibre Channel and iSCSI. The platform's unique scale-to-fit architecture allows customers to scale performance and capacity up independently and scale out to four arrays (in a 16U form factor) managed as one. The system complies with a variety of regulatory requirements, including NEBS and FIPS 140-2, and features the industry's most comprehensive VVols implementation as well as support for the Container Storage Interface.

HPE Nimble Storage arrays include the HPE InfoSight cloud-based predictive analytics platform. InfoSight is the platform that started the whole movement toward AI/ML-based monitoring and management operations when Nimble Storage introduced it in 2010. (HPE acquired Nimble Storage in 2017.) InfoSight is the most mature platform of its type in the industry. It brings many compelling advantages in driving more efficient day-to-day operations as well as forward-looking planning, and a key metric of its value is that, over the course of the platform's history, it has been able to automatically resolve 86% of all identified customer issues. The predictive support automation in InfoSight gives customers direct access to Level 3 technical support personnel for the fastest problem resolution. While typical tiered support escalation models pass customers from one support engineer to another, gathering the same information multiple times, InfoSight's context-aware artificial intelligence completely eliminates the need for Level 1 and 2 support personnel. If InfoSight cannot resolve an issue itself, customers are immediately passed directly through to a Level 3 support resource.

HPE Nimble Storage was designed with IT generalists, not sophisticated storage administrators, in mind. Installation, deployment, provisioning, and upgrading are all simple operations that leverage wizards and other automated workflows. Data services are always on, and default assumptions (e.g., all data is automatically protected with Triple+ Parity RAID) enable virtual, Windows, and Linux administrators who are often managing storage in today's environments to deploy a new system in literally minutes. Application-aware intelligence dynamically adapts the system to meet performance, availability, and other business objectives as defined without requiring intricate tinkering with "nerd knobs." Out-of-the-box integration with VMware vSphere, Chef, Puppet, Ansible, and Kubernetes platforms enables automated operations that maximize administrative productivity and the reliability of operations for DevOps as well as storage infrastructure operations. These capabilities mean that HPE Nimble Storage customers spend less time, effort, and money to manage storage to meet their business objectives, an outcome substantiated by IDC's research (summarized in The Business Value of HPE Nimble Storage section).

HPE Nimble Storage extends to the cloud with HPE Cloud Volumes. HPE Cloud Volumes provides block storage as a service with seamless data mobility between the cloud and on-premises storage. Organizations have full access to true enterprise-class storage management capabilities with the agility, ease of use, subscription pricing, and offloaded infrastructure management of a true cloud-based service. Usage spans a variety of use cases, including backup, disaster recovery, test/dev, running enterprise applications in the cloud, and using public cloud-based services (e.g., compute) for analytics and other purposes. In contrast to competitive cloud storage offerings, there are no egress fees when restoring data on premises and the service is much simpler to set up and manage and less expensive to use than those vendors running a storage operating system in the public cloud. HPE Cloud Volumes is available on HPE Nimble Storage arrays, offering valuable differentiation against competitive offerings that claim to also deliver public cloud-based enterprise-class storage services.

Each HPE Nimble Storage array is also covered by HPE's Timeless Storage program — a 24 x 7 ownership plan that includes a money-back customer satisfaction guarantee, all-inclusive software bundling, fixed maintenance pricing, a 4:1 data reduction ratio, six-nines availability, nondisruptive upgrades, and a controller refresh (included once during the term of the maintenance contract). And through HPE GreenLake, customers can optionally choose IASB 2019-compliant subscription pricing models for any HPE Nimble Storage array (or any other IT infrastructure product) that tie payment more closely to consumption and move assets off balance sheet. HPE GreenLake provides customers with on-demand storage capacity elasticity and even offers a managed services option for on-premises IT infrastructure.

THE BUSINESS VALUE OF HPE NIMBLE STORAGE

Study Demographics

IDC conducted research that explored the value and benefits for organizations of using HPE Nimble Storage. The project included nine interviews with organizations using this solution and that had experience with or knowledge about its benefits and costs. During the interviews, companies were asked a variety of quantitative and qualitative questions about the impact of the solution on IT and storage operations, businesses, and costs.

Table 1 presents study demographics and profiles. Organizations interviewed had an average employee base of 12,644 (indicating the involvement of several large companies). This workforce was supported by an average IT staff of 120 engaged in managing 165 business applications on behalf of 10,644 end users and a large number of external customers (over 217,000). In terms of geographical distribution, six companies were based in the United States, two in Australia, and one in Hong Kong. From a vertical industry standpoint, organizations were from the education, financial services, healthcare, defense, legal, and manufacturing sectors. (Note: All numbers cited represent averages.)

TABLE 1 Firmographics of Interviewed Organizations

	Average	Median	Range
Number of employees	12,644	2,000	500 to 68,500
Number of IT staff	120	43	13 to 400
Number of IT users	10,644	2,000	500 to 68,500
Number of external customers	217,500	2,600	0 to 1.2 million
Number of business applications	165	100	15 to 400
Revenue per year	\$6.44 billion	\$922.4 million	\$20.0 million to \$42.0 billion
Countries	United States (6), Australia (2), and Hong Kong		
Industries	Education (2), financial services (2), healthcare (2), defense, legal, and manufacturing		

Source: IDC, 2020

Source: IDC, 2020

Choice and Use of HPE Nimble Storage

The companies that IDC surveyed described the usage of HPE Nimble Storage and provided a snapshot of their IT and business environments. In addition, they discussed the rationale behind the choice of the HPE Nimble Storage platform. Interviewed customers cited several decision factors for choosing the solution such as being able to reduce the financial effects of unplanned downtime and the speed and agility of storage resource allocation. Also, customers cited benefits such as reduction in the overall costs of storage operations and better VDI and backup performance. Study participants elaborated on these and other benefits:

- **Improved management of storage growth and security:** *“Storage capacity increases about 10% per year. So we were looking to more efficiently manage our storage growth. Security is also always a major consideration. Breaches are a big concern for a law firm. It’s not just our data, but our clients’ data. We have not had any breaches so far, but given our rapid data growth, we have more exposure.”*
- **Better VDI performance and usable storage:** *“We are a heavy user of virtual desktops. We attempted to run our VDI on a different storage vendor’s hybrid SAN, but the performance was not good enough. Additionally, the redundancy in our old platform was more of a mirror between SAN units with RAID on each individual unit. This resulted in significant data protection overhead and a high cost. HPE Nimble Storage’s All Flash Array gave us faster storage with much better capacity utilization, both because of more efficient data protection and data reduction technologies like compression and deduplication.”*
- **Needed better storage scalability:** *“It wasn’t so much that we had specific challenges as we needed to evolve. We needed to stay more current with our network storage. We also needed to expand our storage capabilities, and we determined scale to be our main challenge.”*
- **Better performance and costs:** *“As our data continued to grow, we were concerned about both performance and cost. We did a thorough market analysis of current and future needs. We determined we needed a simpler solution, and the Nimble Storage infrastructure provided that. We are able to quickly access and move data from the storage system despite continued storage growth.”*

Table 2 describes organizational usage associated with the HPE Nimble Storage platform.

There was a substantial storage footprint indicated by an average total capacity of 280TB.

The companies that IDC surveyed were on average running 190 databases on behalf of 8,335 internal users. Customers were clearly depending on HPE Nimble Storage as a mission-critical platform, with an average of 118 business applications supported by HPE Nimble Storage, representing 71% of all applications in use and 88% of company revenue.

TABLE 2 Organizational Usage of HPE Nimble Storage

	Average	Median
Number of terabytes in storage	280	40
Number of arrays	5	4
Number of databases	190	20
Number of applications running	118	45
Number of internal users supported	8,335	1,000
Revenue supported	88%	100%

Source: IDC, 2020

Business Value and Quantified Benefits

IDC’s Business Value model explores the benefits for organizations that have chosen HPE Nimble Storage to support their ongoing IT and storage operations. While considering the use of alternative or previous solutions, the survey data obtained from HPE customers was applied to this model to arrive at quantified post-deployment benefits. Using this methodology, IDC found that these customers realized significant value for their storage infrastructure and business operations.

The use of the HPE Nimble Storage platform has supported more efficient IT and storage operations and increased the overall productivity of teams that manage those operations. Study participants reported that the platform enhanced the agility needed to deploy storage resources and lowered the cost of operations. These benefits also led to reduced cycle times for application development as well as better business productivity and revenue protection. The use of the platform also helped these companies minimize unplanned downtime, thereby contributing to greater productivity and lowering risk. Study participants described these benefits:

- Faster, more usable storage and improved management:** *“Getting faster storage with better capacity utilization is the biggest benefit. It has also provided more staff efficiencies for our IT teams. The system demands far less of our time to manage, freeing administrative resources up for more strategic responsibilities. Support has improved because it’s faster and easier to isolate problems. InfoSight lets us drill right down to a root cause, minimizing trouble shooting time.”*

“Getting faster storage with better capacity utilization is the biggest benefit. Nimble Storage has also provided more staff efficiencies for our IT teams.”

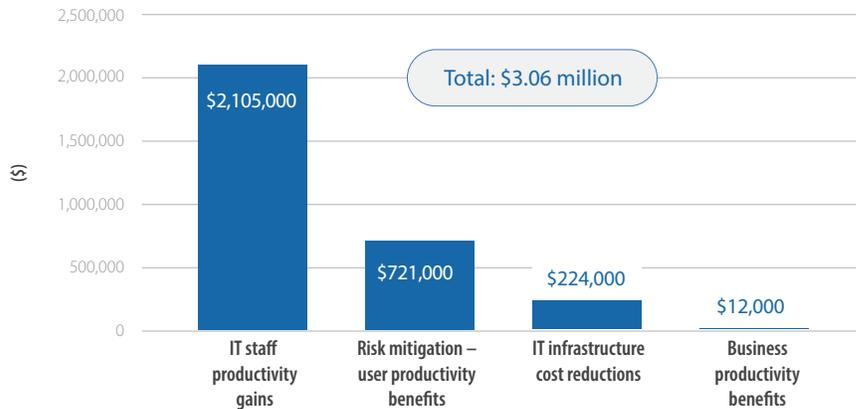
- **Lower costs and better performance for business:** *“The biggest benefit is the cost reduction for storage, which I estimate to be 40% less than what we were paying before. Our backups are faster, and our virtual desktops deliver great performance. Reduced storage latencies, which drive up our CPU utilization rates, are another example. This is an overall positive for the business.”*
- **Better access to information:** *“HPE Nimble Storage has helped make information more accessible to different people in different groups. We now have access to data in a more timely manner while increasing the speed of storage deployment.”*
- **Reduced downtime that protects revenue and company reputation:** *“Downtime impacts both IT and the business. We have calculated that our total billable time runs about \$1 million per hour, so downtime is very expensive. For us, that is the bottom line. Plus, downtime affects our reputation.”*

IDC calculated that the total value that HPE Nimble Storage customers realize will be worth an annual average of \$3.06 million per organization over five years, consisting of the following areas of improvement:

- **IT staff productivity gains:** The use of HPE Nimble Storage requires less IT and storage infrastructure staff time to deploy and manage storage resources compared with alternative approaches. IDC projects that interviewed organizations will realize value through staff time savings and higher productivity worth an annual average of \$2,105,000 per organization (\$7,500 per terabyte).
- **Risk mitigation — user productivity benefits:** The HPE Nimble platform sustains fewer unplanned outages that affect the performance of end-user applications. IDC calculates the value of higher end-user productivity at an annual average of \$721,000 per organization (\$2,600 per terabyte).
- **IT infrastructure cost reduction:** The deployment of HPE Nimble Storage lowers the cost of operations in terms of both capex and opex. IDC calculates that the solution reduces these costs by an annual average of \$224,000 per organization (\$800 per terabyte).
- **Business productivity benefits:** Greater agility and performance lead to higher business productivity and better revenue protection. IDC calculates the value of these productivity benefits at an annual average of \$12,000 per organization (\$40 per terabyte).

These benefits are summarized in Figure 1, which presents the data on a per-organization basis.

FIGURE 1 Annual Average Benefits per Organization



Source: IDC, 2020

Improvements in Storage Operations and Management

In today’s enterprise IT environments, storage presents a number of challenges for the teams that manage it. As in other areas of IT, there is a need to reduce the amount of time these teams spend on routine tasks that involve deploying, provisioning, managing, and upgrading systems while addressing various events that can affect end-user application performance. Storage solutions also need to ensure high availability and reliability so that business-critical applications such as ERP systems, critical databases, business intelligence tools, VDI, and backups are not impacted or slowed down. Further, COVID-19 has posed a new set of challenges to business operations globally now that a much higher percentage of employees are working from home. This has put greater demands on IT infrastructure to support surging workloads in web conferencing, remote desktops, and other areas, with a corresponding increase in data storage requirements.

HPE Nimble Storage arrays help address these challenges by providing better storage performance that can handle additional workloads and I/O spikes when they occur without causing “noisy neighbor” problems and making more efficient use of existing storage capacity (through data reduction features such as compression and deduplication). Overall, interviewed companies reported that the HPE Nimble Storage platform made it easier for teams to manage their IT and storage infrastructure. They cited key benefits such as data compression, excellent levels of technical support, and having a more cost-effective infrastructure. Study participants also appreciated having more time to focus on strategic projects (because they were spending less time managing storage). They commented on these and other benefits:

- **IT infrastructure is more cost effective:** *“Managing costs is how we measure our performance in IT. We are a service-related business. We have contracts for banking-related services involving loans and savings plans. What we can do now with HPE Nimble Storage is grow the portfolio of the business without having to buy more equipment.”*
- **Storage agility is more responsive to COVID-19 business needs:** *“Our ability to respond to the heightened storage demands of COVID-19 is a good example of the improved agility we get with HPE Nimble Storage. With so many more people working at home, we had to add more virtual desktops. We can quickly and easily add more desktops into the pool. It makes a huge difference.”*
- **HPE provides proactive support:** *“Support on HPE Nimble Storage is phenomenal. They tell me when I have a problem. This saves staff time and virtually eliminated downtime. We don’t have to worry.”*
- **InfoSight gives better insight into issues:** *“When we got InfoSight, we used it a lot. The dashboards showed us metrics we weren’t used to seeing, like storage latencies at the virtual machine level and where that latency is coming from. When a problem arises, it makes it very easy for us to quickly troubleshoot and resolve any problems that InfoSight itself didn’t already address. We have really come to trust InfoSight to manage our systems for us in many ways.”*

IDC evaluated the ways that HPE Nimble Storage made it easier for IT teams to manage infrastructure. Table 3 quantifies various improvements in IT team efficiency. The staff required for projects, measured in FTEs, decreased from 6.1 to 2.3, representing a substantial productivity improvement of 62% and translating into an annual salary savings of \$376,000.

TABLE 3 IT Infrastructure Management Impact

	Before HPE Nimble Storage	With HPE Nimble Storage	Difference	Reduction (%)
Equivalent FTEs required to manage storage infrastructure	6.1	2.3	3.8	62
Salary cost per year per organization	\$609,000	\$234,000	\$376,000	62

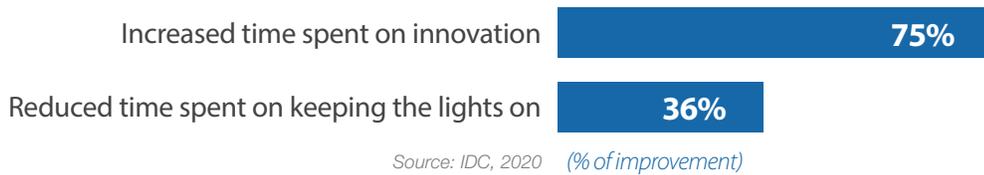
Source: IDC, 2020

Study participant data showed that HPE Nimble Storage helped storage infrastructure teams to shift focus from routine tasks associated with “keeping the lights on” to spending greater amounts of time on innovation and supporting the business. Several factors contributed to this. The high performance of HPE Nimble Storage arrays means that very few storage performance

problems arise any more in the first place, provisioning new storage could be done quickly and easily on demand, troubleshooting any problems that do arise is much faster with InfoSight, and expanding storage capacity is simple and nondisruptive. As one study participant commented: *“With the time freed up, our IT staff can focus on more strategic architectural issues. This, in turn, will produce a better road map for the whole IT organization.”*

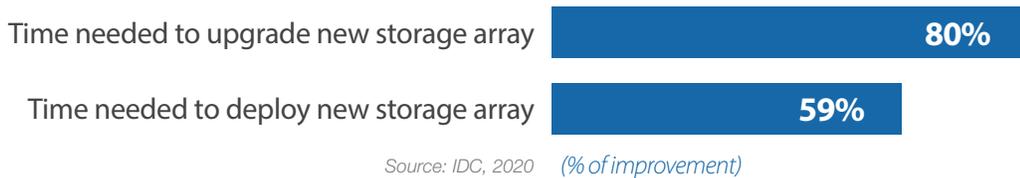
Figure 2 quantifies the impact of the platform on storage team efficiency. Storage management organizations were able to spend 75% more time on innovation-related projects. This was in part made possible because the platform enabled these teams to spend 36% less time on the routine tasks associated with keeping storage systems up and running properly.

FIGURE 2 Impact on IT Storage Team Activities



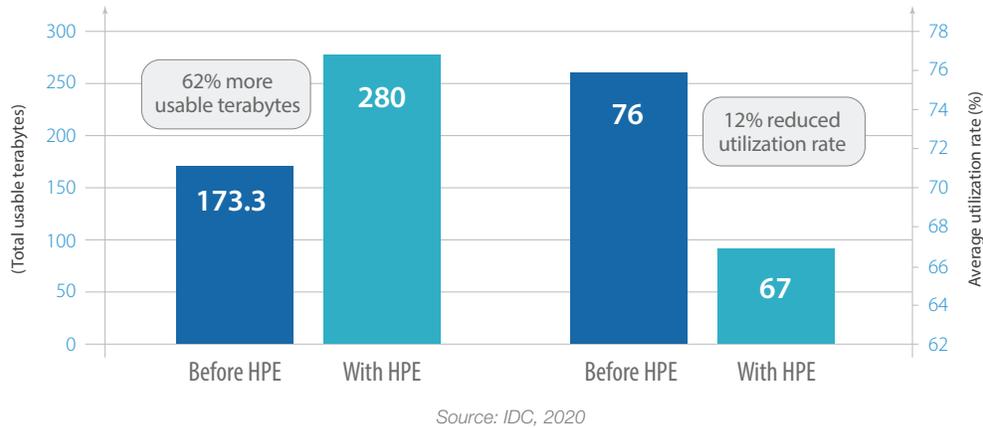
An average of five storage arrays were deployed across all interviewed companies (refer back to Table 2). IDC looked further at how these arrays were being managed. Study participants reported that the HPE Nimble Storage platform improved the agility needed for deploying these storage arrays and resources. Figure 3 quantifies these benefits. Interviewed companies were able to deploy a new storage array 59% faster. In addition, the time required to upgrade these arrays was significantly reduced (80%).

FIGURE 3 IT Agility Impact



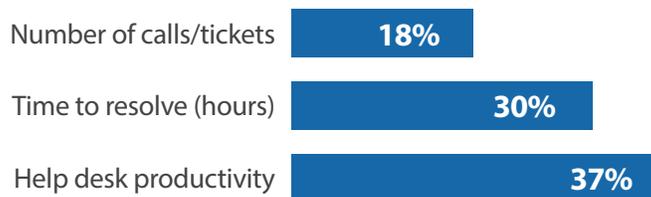
Study participants reported that HPE Nimble Storage also increased the availability of usable storage. Critical data services such as thin provisioning, compression, and deduplication, which could be used without noticeable application impacts, significantly increased capacity utilization rates (see Figure 4). Commenting on this benefit, one study participant observed: *“HPE Nimble Storage’s data compression feature is a major contributor to the improved capacity utilization and a reduction in the need to buy additional storage.”* With HPE Nimble Storage, companies benefited from 62% more usable terabytes, and utilization rates were reduced by 12%.

FIGURE 4 Storage Usage Impact



IDC evaluated how HPE Nimble Storage provided ancillary benefits for help desk operations. As one study participant noted: *“Our help desk is 50–60% more productive due to fewer unidentifiable issues. The storage just works better.”* As shown in Figure 5, users are saving more than two hours on their help desk calls and tickets as a result of better storage reliability and performance. In addition, there were reductions in both the number of tickets and calls logged weekly (18%) and the time to resolve those tickets (30%).

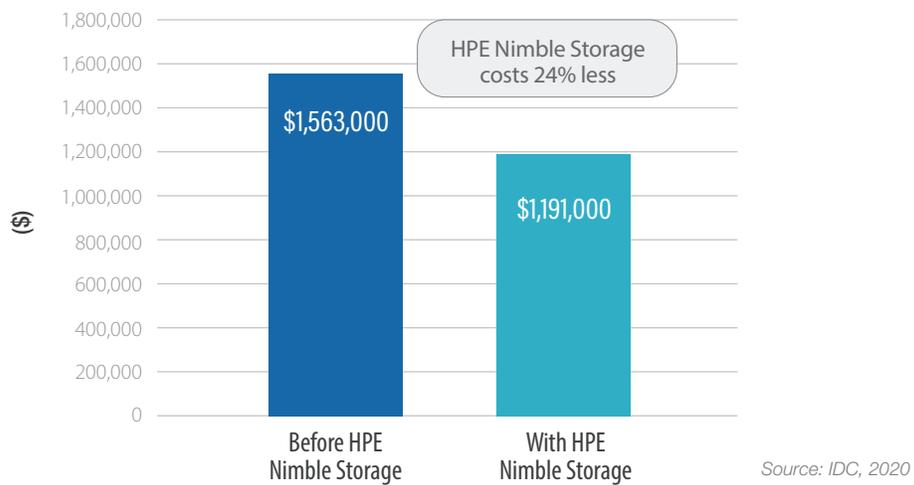
FIGURE 5 Help Desk Impact



Source: IDC, 2020 (% of improvement)

In addition to these operational benefits, HPE Nimble Storage served as a cost-effective storage platform. In part, this was because of the system’s integrated storage efficiency features, such as thin provisioning, compression, and deduplication, all of which improve capacity utilization, that could be used with all applications without impacting performance. Figure 6 illustrates storage infrastructure savings that IDC projects will be available to interviewed companies over a five-year period. Infrastructure cost for HPE Nimble was 24% lower than the cost of alternative or legacy solutions.

FIGURE 6 Five-Year Storage Infrastructure Savings



Improvements in Business Operations and Results

The use and deployment of HPE Nimble Storage fostered better business results and revenue protection for interviewed companies. Overall, these organizations were able to improve storage key performance indicators (KPIs) and performance leading to better application development, less unplanned downtime, better adherence to internal SLAs, and improved ability to meet business KPIs. Study participants cited specific benefits such as improved security, time savings in the application development process, and better performance and reliability. They commented on these and related benefits:

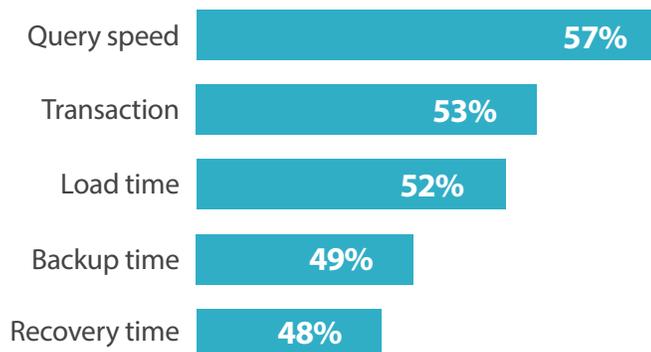
- Better decision making with better access to critical information:** *“HPE Nimble Storage helps us make more timely decisions because of better storage access and the ability to analyze the information we have. Because of regulations, we keep every single document we’ve produced for 10 years. We have offices in about 20 countries, and it helps us keep better track*

of and have more immediate access to development and regulatory data. This is no longer a major concern for the business.”

- **Performance makes things easier:** *“Performance and stability are the biggest benefits we see. You ask for information and you get it quickly. Storage provisioning is faster and easier. Downtime has been reduced. There are no backup issues. We’re not waking up at 3:00 a.m. to deal with a problem. And during regular hours, our engineers are dealing with fewer issues that crop up. That frees them up to work on other projects — so we’re also enjoying better administrative resource allocation. Burnout is also reduced, because when they’re not constantly working on daily disruptions, people are more efficient.”*
- **Application developers save time:** *“Our app developers really appreciate the snapshot capabilities. When they need copies of current data for development or testing purposes, they can get highly performant snapshots quickly from the storage administrators. This cuts cycle times during the application development process and saves hours of time on testing. Storage administrators like it as well since snapshots are fast and easy to take, and don’t consume additional storage capacity while delivering great performance.”*
- **Improved security leads to more business opportunities:** *“We can encrypt data without performance impacts on Nimble, so we know our data is safe. For us that’s extremely important. We have confidence that our customer information is secure, and this helps us pursue more business and aids our reputation.”*

IDC looked at these business benefits in terms of KPIs. As shown in Figure 7, the greatest performance improvements were seen in query speed (57%), transaction rate (53%), and load time (52%). This also meant that any operational workflows that were dependent on storage performance completed more quickly.

FIGURE 7 Storage Performance KPI Impact



Source: IDC, 2020 (% of improvement)

Interviewed companies benefited from less operations-related downtime because of HPE Nimble Storage’s high-availability features, which included Triple+ Parity RAID, host multipathing, transparent controller failover, space-efficient snapshots (for fast file-level recovery), replication options, and redundant, hot plug components, as well as more proactive support services that were directly related to InfoSight. Table 4 provides metrics on these impacts. The annual frequency of downtime events declined from 6.0 to 2.1, representing a significant improvement of 65%. Further, the number of hours required to resolve downtime events declined from 4.0 hours to 1.4 hours, a 65% improvement. Both of these benefits resulted in a 69% improvement in staff productivity measured in FTEs.

TABLE 4 Unplanned Downtime Impact

	Before HPE Nimble Storage	With HPE Nimble Storage	Difference	Change (%)
Frequency per year	6.0	2.1	3.9	65
Time to resolve (hours)	4.0	1.4	2.6	65
FTE impact (lost productivity due to unplanned outages)	1.8	0.6	1.2	69
Value of lost productivity per year	\$125,800	\$38,800	\$87,000	69

Source: IDC, 2020

IDC drilled down a bit more on the benefits of unplanned downtime by looking at the financial impact and how it affected revenue-generating applications and workloads (see Table 5). As a result of fewer disruptive events, interviewed companies recognized substantial additional annual revenue of \$4,605,000.

TABLE 5 Financial Impact: Unplanned Downtime

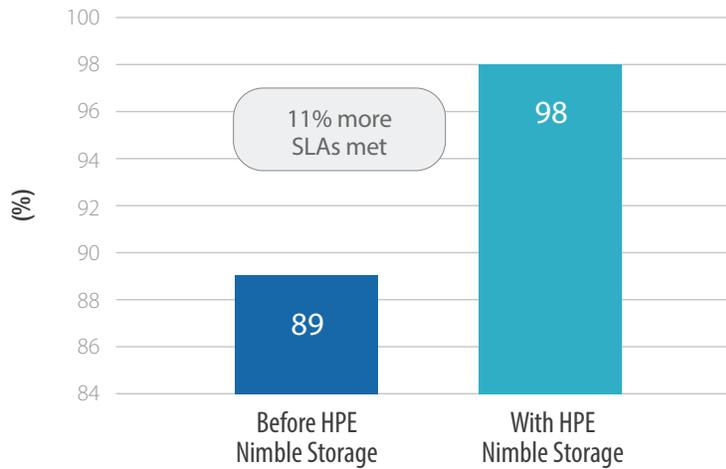
Risk Mitigation — Unplanned Downtime Revenue Impact	Per Organization
Total additional revenue per year	\$4,605,000
Assumed operating margin	15%
Total recognized revenue per year*	\$691,000

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

Source: IDC, 2020

Business SLAs represent an important measure of performance. HPE Nimble Storage has enabled interviewed companies to meet a higher percentage of internal SLAs as a result of the improved functionality and performance described previously. Figure 8 quantifies these benefits, showing that 11% more SLAs were targeted and met.

FIGURE 8 Internal SLA Impact



Source: IDC, 2020

Because enterprise IT departments are facing the challenge of developing digital solutions in progressively faster delivery cycles, technologies that accelerate developer productivity are seeing increased importance. HPE Nimble Storage has provided application developers with the storage capacity and performance required to deploy more applications and do so in a more timely manner. Table 6 presents these productivity impacts. Interviewed companies experienced a 32% increase in developer productivity, resulting in an annual salary savings of \$926,700 per organization.

TABLE 6 Application Development Staff Impact

	Before HPE Nimble Storage	With HPE Nimble Storage	Difference	Benefit (%)
FTEs per year per organization	29	38.2	9.3	32
Equivalent value of staff time per year per organization (based on FTEs)	\$2.90 million	\$3.82 million	\$926,700	32

Source: IDC, 2020

Study participants reported that they were able to provide application developers with more storage capacity and performance. As a result, they were able to deploy new applications and features in a more timely and responsive manner. Figure 9 quantifies these benefits in terms of typical KPIs that are part of the application development life cycle. With HPE Nimble Storage, the number of new features released or deployed increased 25%. In addition, development cycles for new applications were shortened by 20%.

FIGURE 9 Application Developer KPIs



Source: IDC, 2020 (% of improvement)

IDC also looked at how the deployment of HPE Nimble Storage affected business performance by measuring another series of KPIs. As shown in Figure 10, business outcomes showed various levels of improvement. Those KPIs showing the greatest improvement included time to market for products and services (21%), improved IT ability to cost effectively support new IT/business initiatives (12%), and reduction in business process errors (10%).

FIGURE 10 Business KPI Impact



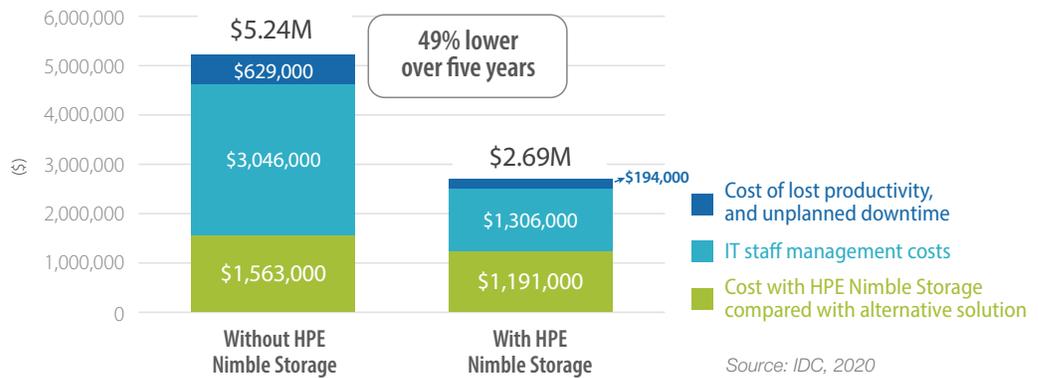
Source: IDC, 2020 (% of improvement)

A final but important area evaluated by IDC was the overall cost of operations. IDC analysis shows that deploying the HPE Nimble Storage platform helped interviewed companies cut their costs significantly. This analysis looked at three factors:

- The cost of lost productivity and unplanned downtime
- IT staff management costs
- The platform capex and opex costs compared against those of alternatives/incumbent solutions

Figure 11 presents these results showing that over a five-year period, overall costs for these organizations were 49% lower

FIGURE 11 Five-Year Cost of Operations



ROI Summary

Table 7 provides IDC’s analysis of the financial and investment benefits for study participants’ use of HPE Nimble Storage. IDC calculates that over five years, interviewed organizations will achieve discounted benefit of \$10.4 million per organization (\$37,000 per terabyte) based on IT/storage staff efficiencies, improved performance/reliability, better business results, and lower costs, as described previously. These benefits compare with projected discounted investment costs of \$1.77 million per organization (\$6,300 per terabyte) over five years. Based on these benefits and investment costs, IDC calculates that these organizations will achieve a five-year ROI of 487% and breakeven on their investment in seven months.

TABLE 7 Five-Year ROI Analysis

	Per Organization	Per Terabyte
Benefits (discounted)	\$10.4 million	\$37,000
Investment (discounted)	\$1.77 million	\$6,300
Net present value	\$8.6 million	\$30,700
ROI (NPV/investment)	487%	487%
Payback	7 months	7 months
Discount factor	12%	12%

Source: IDC, 2020

CHALLENGES/OPPORTUNITIES

As enterprises refresh storage infrastructure, purchase decision metrics are definitely changing. The requirements of the next-generation applications that need to be put in place as part of DX are raising the bar on both performance and availability. In the digital era, business must operate at a much faster pace, and IT agility has become a critical determinant of business success. Static IT budgets in the face of continued high data growth increase the administrative span of control, and keeping up with data protection, security, and compliance requirements make managing storage today even more of a challenge. When it’s time to replace legacy storage, IT organizations are not just looking for incremental improvements in performance and capacity, but they need solutions that can consistently deliver sub-millisecond response times at scale, exhibit six-nines plus availability, and are much easier and more intuitive to manage.

Vendors are introducing the use of new technologies and design concepts to meet these requirements. Solid state storage, inline data reduction, AI/ML, and software-defined flexibility must be combined with automation and cloud integration to make storage easier to manage at scale and support the flexibility to place workloads in the optimal locations. Vendors that meet these requirements and can directly connect them to meaningful customer benefits will have an opportunity to grow revenue in this new era, while those that just provide incremental improvements to legacy designs will not.

CONCLUSION

Customers that refresh existing storage infrastructure with newer designs should have high expectations. Based around new technologies such as solid state storage, software-defined design, AI/ML, and cloud, it is not unreasonable to expect to cut the total cost of storage operations in half. Based on our quantitative analysis of the business value generated by a move to HPE Nimble Storage, companies did just that while removing storage performance as an issue, reducing unplanned downtime by 69% and improving storage deployment agility by 59%. Through better storage infrastructure from HPE, these companies made application development 32% more productive, enabling them to respond faster to changing business conditions and market need while freeing up IT management to spend more time on innovation (because they were spending 36% less staff time on keeping the lights on). With a seven-month payback period and a 487% five-year ROI, these HPE Nimble Storage customers were extremely happy with their storage infrastructure modernization decision.

APPENDIX

Methodology

IDC's standard ROI methodology was utilized for this white paper. This methodology is based on gathering data from current users of the HPE Nimble Storage solution as the foundation for the model. Based on interviews with organizations using the solution, 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 HPE Nimble Storage.** In this study, the benefits included staff time savings and productivity benefits as well as operational cost reductions.
- 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 HPE Nimble Storage 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 HPE Nimble Storage 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 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 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.

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Sponsored by:
Veeam and HPE Nimble
Storage

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December 2019

Business Value Highlights

278%
five-year ROI

7 months
to breakeven

68%
lower five-year cost of
operations

>3.5 times
more data backups

56%
shorter RPOs

43%
shorter RTOs

72%
more efficient data backup
and recovery teams

99.6%
less unplanned downtime

Veeam + HPE Nimble Storage: Five-Year ROI of 278%

EXECUTIVE SUMMARY

The growing importance of data increasingly compels organizations to provide robust data services in order to achieve faster insights that drive their business operations. With data becoming more dynamic and diverse, data availability has never been more essential and challenging. IDC interviewed organizations supporting their data backup and recovery environments with a solution set consisting of Veeam Cloud Data Management software combined with HPE Nimble Storage to understand, validate, and quantify the value of the combined vendor approach. Interviewed organizations reported that the Veeam and HPE Nimble Storage solution has made data backup and recovery operations more robust, efficient, and cost effective, which has resulted in significant business value and enabled them to limit the business risks of data-related incidents. IDC quantified the value of the organizations' investment in the integrated Veeam and HPE Nimble Storage solution at an average of \$630,900 per year, which would result in an average five-year ROI of 278% by:

- Fostering more effective and timely data backup and recovery operations, leading to reduced business and operational risk
- Reducing the overall cost of data-related outages and their impact on user productivity and business outcomes
- Decreasing the staff time needed for managing data backup and recovery operations and environments
- Optimizing storage hardware costs through higher performance and by using features of the combined solution set, such as data deduplication and compression

SITUATION OVERVIEW

Data-driven organizations seek competitive advantage through faster, more insightful decision making enabled by better, more available data. IDC research shows that more than half of digital transformation (DX) efforts involve updated data protection systems, consuming more than 30% of the DX budget. The reason seems obvious: Organizations cannot be data driven if the data is offline.

At the same time, the application environment that creates data is becoming more complex. Applications generate data from on-premises locations, cloud, software as a service (SaaS), Internet of Things (IoT), and edge devices. Moreover, data is being stored in a myriad of forms, including unstructured, structured, NoSQL, and numerous file systems. The result is data silos with different data backup, retention, and management requirements.

Modern IT organizations find themselves in a position where they must deal with this growing complexity not only with the same number of staff members but also with more generalists and fewer specialists. During the 2nd Platform era (client/server), IT organizations commonly had backup administrators whose sole responsibility was to optimize their respective areas. Much time was spent fine-tuning policies and performance as well as attending to daily administrative tasks. In fact, it was not uncommon for these administrators to spend up to a third of their day triaging and correcting failed backup and restore jobs.

Currently, in the 3rd Platform era (virtual infrastructure [VI]), fewer and fewer organizations have the luxury of such job specialization. Instead, the VI administrators are more generalist in nature and have responsibility for managing the VI, storage, and backup systems. It is essentially impossible for these generalists to spend the necessary time learning the details of numerous systems and tools. They also cannot afford to spend two to three hours per day chasing and correcting failed jobs.

To complicate data protection operations even further, service-level requirements continue to become more demanding in what we call the “new race to zero.” This means that organizations are driving toward environments that deliver zero downtime with zero data loss. Although this goal is not yet practical for any but the most demanding applications, recovery point objective (RPO) and recovery time objective (RTO) service levels are now commonly expressed in minutes. Certainly, data-driven organizations require these high levels of data availability to gain the competitive advantage they seek.

Because of these numerous factors, IT organizations are looking for backup solutions with the following characteristics:

- Simple deployment and setup to get going quickly and protect new workloads as they are deployed
- Rapid, reliable data restoration
- Extensive automation to minimize human labor
- High performance with minimal tuning requirements to meet backup and restore windows
- High reliability to ensure successful backup/restore job completion
- Service-level delivery that meets the organization's data availability requirements

VEEAM AND HPE NIMBLE STORAGE OVERVIEW

Veeam and HPE have successfully partnered to deliver comprehensive data protection solutions for nearly 10 years. Veeam's flagship software, the Veeam Availability Suite, is optimized for virtual environments, yet also addresses the needs of cloud and physical infrastructure backup. HPE Nimble Storage provides a highly automated, flash-accelerated data protection platform to deliver faster backup and rapid recovery with minimal management or dedicated expertise.

A brief overview of the Veeam products contributing to the Veeam-HPE Nimble Storage solution is as follows:

- **Veeam Availability Suite.** Veeam Availability Suite is designed to provide data protection capabilities for virtual, physical, and cloud workloads from a single management point. The hallmarks of Veeam's solution are simple implementation and management. Veeam Availability Suite has four key components:
 - **Veeam Backup & Recovery.** Veeam Backup & Recovery is at the center of the company's product portfolio. It was originally designed to back up virtual environments, an attribute that remains core to its value proposition. It provides backup/recovery for on-premises workloads that include a cloud tiering capability and Veeam Cloud Connect, plus agents for Windows and Linux physical Workloads. The product also offers SAP HANA and Oracle RMAN plug-ins.
 - **Veeam ONE.** Veeam ONE provides monitoring and reporting across physical and virtual environments. Capabilities include backup monitoring, reporting, and

alerting to ensure service-level agreement (SLA) attainment. It also provides capacity planning and forecasting, as well as chargeback and billing.

- **Veeam Explorer.** Veeam Explorer, with support for Storage Snapshots, Active Directory, SQL Server, Exchange, and more, provides item-level recovery to deliver faster RTO of virtual machines (VMs), files, and so forth.
- **Veeam DataLabs.** Veeam DataLabs leverages backup data to assist with test/development, disaster recovery (DR) analytics, and other secondary use cases.

The HPE Nimble Storage products considered in this solution include:

- **HPE Nimble Storage** — HPE Nimble Storage is designed to optimize business continuity with an intelligent, flash-based architecture to minimize system management requirements. The flash acceleration can help meet stringent service-level requirements with nondisruptive capacity and performance scaling.
- **HPE InfoSight** — HPE InfoSight provides real-time oversight of the infrastructure by monitoring and analyzing millions of sensors. The product uses machine learning technology to predict and resolve problems automatically.

THE BUSINESS VALUE OF VEEAM WITH HPE NIMBLE STORAGE

Study Demographics

IDC conducted research that explored the value and benefits for organizations of using Veeam data management software in combination with HPE Nimble Storage to support a variety of business applications and workloads. The project included interviews with eight organizations that have experience and knowledge about the solution set's benefits and costs. Interviews were in-depth in nature and covered a variety of quantitative and qualitative topics about the impact on their data backup and recovery activities, storage staff time requirements and costs, and business activities.

Table 1 presents study demographics and profiles. Organizations interviewed had an average base of 3,883 employees and annual revenue of \$1.57 billion. Four companies were based in the United States, three in the United Kingdom, and one in Australia. In addition, there was a good mix of vertical industries: education, government, healthcare, hospitality, manufacturing, marketing, professional services, and service provider.

TABLE 1 Firmographics of Interviewed Organizations

Firmographics	Average	Median
Number of employees	3,883	1,625
Number of IT staff	165	60
Number of business applications	55	25
Revenue per year	\$1.57 billion	\$846 million
Countries	United States (4), United Kingdom (3), Australia	
Industry	Education, government, healthcare, hospitality, manufacturing, marketing, professional services, service provider	

Source: IDC, 2019

Choice and Use of Veeam and HPE Nimble Storage

Interviewed organizations discussed the reasons for combining Veeam data management software with HPE Nimble Storage. While they cited a variety of considerations, such as the need to conduct backups at scale and complete data recovery activities faster, their decisions boiled down to requiring more effective and robust data backup and recovery activities. Stated otherwise, they had concluded that their previous solutions could no longer meet their business needs. Study participants elaborated:

- Need for more robust and frequent data backups:** *“Our previous solution was not fit to purpose. It was impossible for us to back up within our window, which became inadequate. Because backup was offsite, we needed seven days from a recovery point perspective, while backup takes four hours with Veeam and HPE Nimble Storage.”*
- Business needs to restore significantly faster (CloudIT):** *“Ease of use and quickness to restore were two of the main drivers for choosing Veeam and HPE Nimble Storage ... We were having issues around restores, so speed to restore was the key motivation for making the change.”*
- Ability to restore single workloads (Bridgend County):** *“We wanted the ability to restore from a single workload, which we can do with Veeam and HPE Nimble Storage. Also, we can see a snapshot of the storage from within Veeam, which is quite innovative.”*
- Need to support extensive virtual desktop environment (Pearland ISD):** *“We moved to HPE Nimble Storage when refreshing storage arrays and added Veeam on HPE’s recommendation. We run thousands of virtual desktops, so we were looking for a powerful*

array but with a small footprint. Veeam was recommended by HPE Nimble as the best solution.”

Table 2 provides details about the interviewed organizations’ use of the Veeam and HPE Nimble Storage platform. As shown, these Veeam and HPE Nimble Storage customers are supporting 659TB of data on an average on four HPE Nimble Storage arrays across two datacenters. Most employees at these organizations are using applications supported by the Veeam and HPE Nimble Storage platform, demonstrating the centrality of the combined solution set to their business operations. On average and by median, study participants had been using the combined solution for three years at the time of the interviews, showing a strong experience base from which to discuss the benefits and costs of Veeam and HPE Nimble Storage.

TABLE 2 Veeam and HPE Nimble Storage Use by Interviewed Customers

	Average	Median
Number of HPE Nimble Storage arrays	4	3
Number of terabytes	659	640
Number of datacenters	2	2
Number of virtual machines (VMs)	246	228
Number of users of applications supported by Veeam and HPE Nimble Storage	3,447	450
Number of years using combined solution	3	3

Source: IDC, 2019

Business Value and Quantified Benefits

Interviewed organizations reported achieving strong value with the combined Veeam HPE Nimble Storage solution by making their data backup and recovery operations and environments more robust, effective, and cost efficient. Study participants praised the combined Veeam and HPE Nimble Storage platform, noting especially that the integration of the solutions is beneficial:

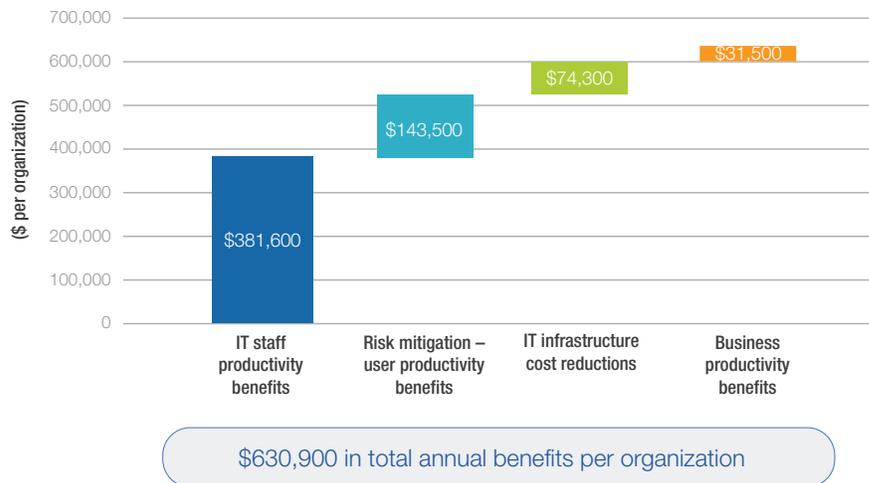
- Overall quality of combined solution (Pearland ISD):** *“Our Veeam and HPE Nimble Storage environment is rock solid with hardly any problems. Our HPE Nimble Storage arrays never miss a beat, and Veeam does not require a lot of work on our end. It does what it is supposed to do.”*

- **Lower hard costs and higher overall quality:** *“Our CTO has said that the Veeam and HPE Nimble Storage combination is 30% less expensive than before in hard costs. It’s hard to put your finger on soft costs, but I feel we have been lucky we made the right move. It always comes back to having that single piece of software that does everything we need for backup, and running it on HPE Nimble Storage gives us assurance and streamlines our processes.”*
- **Strong integration leads to important performance gains:** *“The integration of Veeam and HPE Nimble Storage is awesome and drastically reduces our backup window.”*

For study participants, this leads to several significant operational advantages, including reducing risk related to the data their businesses increasingly leverage to establish a competitive advantage, as well as the ability to continue to grow their data environments in a cost-effective manner. IDC’s analysis shows that these benefits translate into significant value, which IDC quantifies as being worth an annual average of \$630,900 per organization over five years (\$18,300 per 100 users) in the following areas:

- **IT staff productivity benefits:** Enabling faster and more robust data backup and recovery operations means that these teams are more efficient, while consolidated storage environments create efficiencies for infrastructure teams. IDC quantifies the value of these IT staff efficiencies at an annual average of \$381,600 per organization (\$11,100 per 100 users).
- **Risk mitigation — user productivity benefits:** Reducing the frequency of outages related to backup and recovery activities means higher employee productivity and less revenue loss. IDC quantifies the value of higher employee productivity and revenue at an annual average of \$143,500 per organization (\$4,200 per 100 users).
- **IT infrastructure cost reduction:** Leveraging capabilities of the combined solution set, such as deduplication and high performance, reduces the costs of building and running data backup and recovery environments. IDC calculates these savings as being worth an average of \$74,300 per year per organization (\$2,200 per 100 users).
- **Business productivity benefits:** Having improved data backup and recovery operations enables organizations to better address business opportunities because they have more confidence that they can leverage data to their business benefit. This translates into additional revenue that IDC calculates at an average of \$31,500 per year per organization (\$900 per 100 users).

See Figure 1 for average annual benefits per organization.

FIGURE 1 Average Annual Benefits per Organization

Source: IDC, 2019

Improved Data Backup and Recovery Operations

Study participants reported that combining Veeam data management software with HPE Nimble Storage has enabled them to deliver more robust and effective data backup and recovery environments to their businesses. For interviewed organizations, these improvements are critical in reducing operational and business risk associated with the movement, consumption, and storage of increasingly voluminous data as well as ensuring more cost-effective data environments.

Study participants cited features and capabilities of the combined Veeam and HPE Nimble Storage solution that are enabling these improvements, such as the ability to conduct more frequent and numerous backups, restoring data in significantly less time, storing backed-up data for longer, and improving the quality of data recoveries. Study participants commented on these and other benefits:

- Ability to carry out backups at volume:** *“The guesswork of running one backup job and wondering when it will end and when to start the next job has completely disappeared with Veeam and HPE Nimble Storage. We have the ability to stack jobs without any guesswork.”*
- Assurance of recovery in very little time (Australian Dental Association NSW Branch):** *“We now need about five minutes to recover with Veeam and HPE Nimble Storage. In the past, we had to call external resources, and someone would have to come in and thumb through backups that may or may not work, meaning that we did not know if we would be able to recover.”*

- **Quality of recovery with Veeam and power of HPE Nimble Storage:** *“Veeam does a good job of recovering, and restoration jobs paired with HPE Nimble Storage are very fast and powerful. For example, powering on VM in a DR scenario is now almost instantaneous.”*
- **Snapshot functionality means much faster time to restore after failures (CloudIT):** *“By leveraging Veeam’s ability to access HPE Nimble Storage snapshots directly, the mean time to restore for a failure is exponentially reduced. For example, we had to deal with a ransomware attack and were able to restore within 15 minutes, and this would have taken days previously.”*

Table 3 provides detailed data on key data backup and recovery metrics. Study participants reported that the combined functionality of Veeam software with HPE Nimble Storage infrastructure enabled significant improvements, in both the frequency and the duration of activities. For example, interviewed organizations reported being able to carry out far more data backups (272% more) even as they meet more backup window targets (77% more). They are achieving these improvements even as they have reduced RPOs and RTOs (56% and 43% shorter, respectively). They also noted the beneficial impact on data recovery activities, reducing the frequency of recoveries required by 33%, but needing 97% less staff time to carry out recovery activities when required to do so.

For study participants, these metrics reflect significant value in making core activities related to maintaining and using data more robust and efficient. They have increased confidence that they have a platform with Veeam and HPE Nimble Storage that can meet business requirements in terms of backing up and recovering data and have allayed concerns that these activities will interfere with daily business operations. The result is substantially lower risk associated with their operational data and increased confidence that they will have access to the data their businesses require.

TABLE 3 Key Backup and Recovery Metrics

	Before Veeam and HPE Nimble Storage	With Veeam and HPE Nimble Storage	Difference	Benefit with Veeam and HPE Nimble Storage (%)
Data backups				
Number of data backups per month	22	82	60	272
Data backup window target (hours)	19.7	6.4	13.3	67
Data backups meeting window target (%)	56	100	43	77
Data recovery				
Number of data recoveries required per year	7.2	4.8	2.3	33
Recovery point objective (hours)	29.1	12.8	16.3	56
Recovery time objective (hours)	14.7	8.4	6.3	43
Staff time required per data recovery (hours)	11.8	0.3	11.4	97

Source: IDC, 2019

Reduced Cost of Business Risk and Improved Business Results

As data permeates their business operations, interviewed organizations face increasing data-related risk. This risk can be expressed in financial terms on their operations and from the perspective of their reputations and operations. When it comes to data-related activities and their Veeam and HPE Nimble Storage solutions, interviewed organizations stressed the importance to their businesses of being able to carry out frequent, timely, and nonintrusive data backups and recovering data when required in a robust and timely manner to limit costs and business interruptions related to data.

In describing the benefits of the Veeam and HPE Nimble Storage in reducing data-related risk, study participants specifically called out the benefits of easy replication from one datacenter to another, high availability, and the ability to add capacity as needed to address fluctuations in business demand. Study participants commented on these and other benefits:

- **Platform integration supports more robust operations (Bridgend County):** *“The integration of Veeam with HPE Nimble Storage has created a more robust and adaptable environment for us.”*
- **Reduce risk with datacenter replication capabilities (CloudIT):** *“With the Veeam and HPE Nimble Storage implementation, we can easily replicate from one datacenter to another. We did not have that technology before.”*

One important business benefit affecting organizations across the board is reducing unplanned downtime. One study participant noted that there was much less risk related to availability with its Veeam and HPE Nimble Storage platform: *“Previously, we ran on an environment that could crash at any time. Our website is hosted, so our website would crash and would be down for a long time ... Now with Veeam and HPE Nimble Storage, we replicated our storage to the cloud provider. If we needed it, we could just ring them up, and this improves our resiliency. With Veeam and HPE Nimble Storage, we now have a proper backup plan. That’s the big difference, the DR capability.”*

Table 4 shows how interviewed organizations have leveraged the combined Veeam and HPE Nimble Storage solution to nearly eliminate impactful unplanned downtime related to activities on the platform. All but one interviewed organization reported experiencing no impactful unplanned outages with the Veeam and HPE Nimble Storage solution, reflected in an average reduction of 99.6% in lost productive time related to unplanned downtime.

TABLE 4 Unplanned Downtime Impact

	Before Veeam and HPE Nimble Storage	With Veeam and HPE Nimble Storage	Difference	Benefit with Veeam and HPE Nimble Storage (%)
Frequency per year	16.6	0.1	16.5	99.6
Hours of lost productive time per year per user	1.0	0.0	1.0	99.6
Lost productive time in FTEs per organization per year	1.8	0.0	1.8	99.6
Cost of lost productivity per year per organization	\$124,000	\$500	\$123,500	99.6

Source: IDC, 2019

Beyond almost eliminating impactful unplanned outages, interviewed organizations also discussed how having increased confidence in data security with Veeam and HPE Nimble Storage helps them better run their businesses and capture more revenue related to use of their data. They provided examples:

- Ability to add capacity as needed to address business demand (Australian Dental Association NSW Branch):** *“We have created headroom with our last infrastructure refresh. Having Veeam and HPE Nimble Storage allows us to add additional servers as needed to accommodate business needs without the capital expenditure cost.”*
- Improve competitive position and pricing:** *“By switching to Veeam and HPE Nimble Storage, we doubled the margins of the solution we were offering our cloud clients ... These savings are a combination of staffing, hardware, and software costs.”*

Table 5 shows the positive revenue impacts that resulted for study participants after deploying Veeam with HPE Nimble Storage. As shown, on a per-organization basis, the revenue impact from better addressing business opportunities included total additional revenue per year of \$210,200, while organizations also avoided the loss of an average of \$151,900 per organization per year related to unplanned downtime.

TABLE 5 Business Operations Impact: Revenue

	Per Organization	Per 100 Users
Business impact — Revenue from better addressing business opportunities		
Total additional revenue per year	\$210,200	\$6,100
Assumed operating margin	15%	15%
Total operating margin impact per year	\$31,500	\$900
Unplanned downtime impact — Revenue losses avoided		
Revenue losses avoided per year	\$151,900	\$4,400
Assumed operating margin	15%	15%
Total operating margin impact per year	\$22,800	\$700

Source: IDC, 2019

IT Staff Efficiencies

Study participants also reported that the combined Veeam and HPE Nimble Storage solution has enabled key IT teams to work more efficiently and effectively. In particular, data backup and recovery teams benefit from much-improved ability to carry out backups and recovery activities with greater ease, as discussed in this white paper. One study participant described how its data backup and recovery team has benefited from the functionality of the combined solution: *“We use the backup dashboard with Veeam ONE and see immediately the status of all of our repositories and servers, so we get a grasp of our daily standing on the past few days’ backups.”*

Meanwhile, several organizations noted efficiencies and time savings that have allowed them to repurpose staff time for other activities. One interviewed organization said, *“Veeam and HPE Nimble Storage frees up staff for other functions because they are not spending time monitoring and evaluating backups. The efficiencies all start with the ability to monitor and see the entire environment. Everything flows from that.”* Another echoed this theme: *“With efficiencies from Veeam and HPE Nimble Storage, we’ve been able to enable colleagues to perform simpler file restores on their own without waiting for support from other teams. There are also other operational efficiencies. It frees up staff time to expedite help desk tickets. In general, we can respond quicker to business requirements.”*

Table 6 shows the impact for data backup and recovery teams tied to the greater efficiencies provided by the Veeam and HPE Nimble Storage solution. IDC calculates that these teams benefit from efficiencies of an average of 72%, enabling them to carry out these types of data-related activities with far more efficiency with the Veeam and HPE Nimble Storage solution.

TABLE 6 IT Staff Impact, Data Backup, and Recovery

	Before Veeam and HPE Nimble Storage	With Veeam and HPE Nimble Storage	Difference	Benefit with Veeam and HPE Nimble Storage (%)
FTEs per year per organization	2.1	0.6	1.5	72
Hours per 100 users per year	115	32	83	72
Value of staff time required per organization per year for equivalent workloads	\$211,500	\$58,900	\$152,600	72

Source: IDC, 2019

Study participants also reported that their storage infrastructure teams benefit from consolidated HPE Nimble Storage footprints and software-driven functionality in maintaining and supporting their data environments. One study participant commented: *“Veeam and HPE Nimble Storage just provide more visibility into the solution — for example, when we need to add additional storage or when we have components failing. Support from HPE Nimble Storage is top notch in that area. They can ship us out equipment in four hours to our datacenter before we even know there is an issue.”* As previously described, several customers linked faster restores and recovery to efficiencies for their broader storage environments, including staff responsible for managing storage infrastructure. Table 7 shows the average impact on their storage infrastructure teams, with an average efficiency of 32%.

TABLE 7 IT Storage Infrastructure Impact

	Before Veeam and HPE Nimble Storage	With Veeam and HPE Nimble Storage	Difference	Benefit with Veeam and HPE Nimble Storage (%)
FTEs per year	7.4	5.0	2.4	32
Hours per 100 users per year	404	275	129	32
Value of staff time required per organization per year for equivalent workloads	\$741,300	\$503,700	\$237,600	32

Source: IDC, 2019

Lower Cost of Backup, Recovery, and Data Protection

Study participants reported that they have been able to build more cost-effective backup and recovery environments using Veeam data management software and HPE Nimble Storage. Cost efficiencies included both capex and opex requirements. Interviewed organizations described specific benefits, including strong price–performance ratios, the need for less overall storage

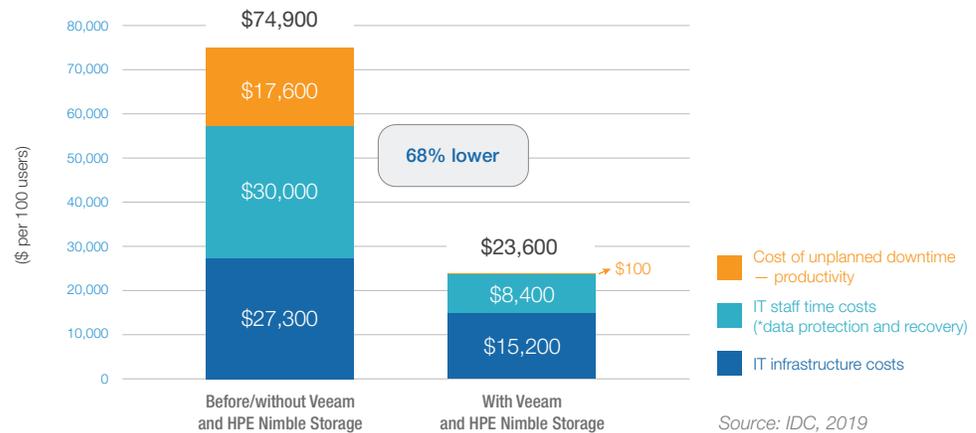
capacity, and the advantages provided by data compression. Study participants commented on these and other benefits:

- Improved performance means less storage required:** *“We estimate at least a 50% reduction in storage costs with Veeam and HPE Nimble Storage. Instead of buying a 50–60TB storage device, we can do the same work on a 15TB HPE Nimble Storage array because of the all-flash.”*
- Data compression capabilities enable substantial storage efficiencies (Australian Dental Association NSW Branch):** *“We use Veeam and HPE Nimble Storage to do 14 daily, 22 weekly, 12 monthly, and 7 yearly backups. To do this, Veeam compressed 540TB of data down to 19.6TB by tracking block-level delta ... This is saving us \$75,000 one time and \$15,000 per year.”*
- Benefits in terms of performance and functionality are most important:** *“Veeam and HPE Nimble Storage is more expensive than our previous environment, but we moved up from a Yugo to a Cadillac. It is worth it because of the flexibility and all the things it does for us. It is night and day. Trying to make the comparison is just not fair.”*

Overall, these organizations reported that their costs were 44% lower with the Veeam and HPE Nimble Storage solution than building out an alternative environment for equivalent workloads.

Figure 2 shows the overall five-year cost of operations for these organizations, including hardware requirements, staff time for data backup and recovery activities, and the cost of lost productivity due to unplanned downtime. The 68% savings that IDC projects these organizations will realize underscore the cost-effective nature of the Veeam and HPE Nimble Storage combined solution, in addition to delivering much-improved functionality.

FIGURE 2 Average Five-Year Cost of Operations per 100 Users



ROI Summary

IDC's analysis of the benefits and costs related to the study participants' use of the Veeam and HPE Nimble Storage solution is presented in Table 8. IDC calculates that, on a per-organization basis, interviewed organizations will achieve a total discounted five-year benefit of \$2.26 million (\$65,600 per 100 users) based on efficiencies for data protection and recovery teams and other IT teams, reducing the cost of risk associated with unplanned outages, higher revenue, and lower costs as described. These benefits compare with projected total discounted investment costs over five years of \$0.60 million on a per organization basis (\$17,400 per 100 users). Based on these benefits and investment costs, IDC projects an average five-year ROI of 278% and breakeven on investment in seven months.

TABLE 8 ROI Analysis

Five-Year ROI Analysis	Per Organization	Per 100 Users
Benefit (discounted)	\$2.26 million	\$65,600
Investment costs (discounted)	\$0.60 million	\$17,400
Net present value (NPV)	\$1.66 million	\$48,200
ROI (NPV/investment)	278%	278%
Payback period	7 months	7 months
Discount factor	12%	12%

Source: IDC, 2019

CHALLENGES/OPPORTUNITIES

Veeam and HPE have had a strong relationship for a number of years with many successful joint customer deployments. However, as with any partnership, the long-term success depends upon continual cooperation of both parties to keep product road maps in sync and to make the necessary R&D investment in the joint solution. We believe this will continue to be the case with Veeam and HPE but is by nature different from a single solution from a single vendor. Even so, the joint solution can also give customers added flexibility to evolve the solution to their own needs rather than being locked into a single solution.

CONCLUSION

As organizations face pressure to generate value through their operational data, they also must find ways to handle increasing volumes of dynamic and diverse data. Greater business reliance on data means that data availability becomes more essential and compels organizations to ensure that data-related activities do not hinder or slow business activities or create undue operational risk.

IDC's study demonstrates the value for interviewed organizations of supporting their data backup and recovery environments with the integrated Veeam data management software and HPE Nimble Storage solution set. Veeam and HPE Nimble Storage customers reported making their data backup and recovery operations significantly more robust and efficient. They described marked improvements measured in both key performance indicators such as RPO and RTO and the ability of teams responsible for data backup and recovery efforts to support growing data environments effectively and efficiently.

These benefits carry demonstrable financial value for interviewed organizations, while their ability to limit operational risk associated with their data environments with the Veeam and HPE Nimble Storage solution not only brings tangible benefits but also, just as importantly, limits less quantifiable but potentially very significant business risk associated with data-related breaches, losses, or other incidents. Overall, IDC's analysis shows that study participants will achieve an almost 4:1 return on their investment — 278% — in the integrated Veeam and HPE Nimble Storage solution set over five years.

APPENDIX

Methodology

IDC's standard ROI methodology was utilized for this white paper. This methodology is based on gathering data from current users of Veeam data management software with HPE Nimble Storage as the foundation for the model. Based on interviews with organizations using the solution, 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 Veeam and HPE Nimble Storage.** In this study, the benefits included staff time savings and productivity benefits, revenue gains, and cost reductions.
- **Created a complete investment (five-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Veeam and

HPE Nimble Storage 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 Veeam and HPE Nimble Storage 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 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.
- Further, because the Veeam and HPE Nimble Storage solution requires a deployment period, the full benefits of the solution 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.

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