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Business Value Highlights

442%
five-year ROI

56%
lower five-year cost of operations

98%
less unplanned downtime

31%
higher internal customer satisfaction

37%
lower IT infrastructure costs

75%
more efficient IT infrastructure team

26%
higher developer productivity

32%
higher gross productivity

The Business Value of Efficiently Running High-Performing Windows Workloads in the AWS Cloud

EXECUTIVE SUMMARY

Organizations recognize the potential for significant improvements in performance, efficiency, and security that result from relocating Windows workloads to the Amazon Web Services (AWS) cloud. IT decision makers frequently cite the increased agility, resilience, and scalability; lower TCO; and enhanced data security that their organizations experience as a result of moving these workloads to AWS. Running Windows workloads on AWS provides the foundation for delivering innovative new services like CI/CD workflows, a self-service model for software development, and seamless mobile access to applications and data.

IDC interviewed organizations running Windows workloads in the AWS cloud. The interviews revealed that these AWS customers achieve significant value by making their Windows applications and database environments more efficient and cost effective while also better meeting business demand through greater agility and improved performance. Overall, IDC puts the value that study participants will achieve by running Windows workloads on AWS at an average of $157,300 per 100 users over five years ($6.59 million per organization), by:

- **Lowering the cost of infrastructur**e by moving away from on-premises setups and more efficiently using infrastructure and application licenses

- **Enabling IT teams** by freeing them up from day-to-day activities, thereby giving IT staff more time to take on strategic value-added IT and business initiatives

- **Supporting more effective development activities** by delivering much improved IT agility

- **Enhancing security and reducing the cost of risk** by leveraging security-related functionality and reducing the impact of unplanned outages on operations

- **Improving business results and operating more efficiently** by better addressing business opportunities and delivering better performing and timely Windows functionality to employees

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SITUATION OVERVIEW

AWS has been providing cloud services longer than any other cloud service provider and continues to be a cloud destination of choice for organizations undergoing modernization and digital transformation. A decision to move business-critical assets to the cloud requires detailed planning, an awareness of the current environment, and strategic alignment with where the business is headed in the future. Most businesses prepare for application workload migration by developing a comprehensive business case that includes the business value that can be expected from the journey to cloud. In the early days of cloud migration, businesses were mainly focused on anticipated IT cost savings coming from reduced capital investment in supporting infrastructure. As businesses reach higher levels of cloud maturity, they experience improved performance resulting from greater efficiency, speed, flexibility, and superior security. According to IDC's *Industry CloudPath Survey*, most businesses cite improved security as a top driver for adopting cloud services.

Organizations are increasingly taking a "cloud first" approach for new application workloads, including business-critical workloads that include databases with sensitive customer data. The cost to purchase and maintain hardware for systems of record has been an operational necessity for enterprise organizations. The migration of application workloads to the cloud allows businesses to significantly reduce their dependency on slow legacy systems while at the same time reallocating budget and staff to activities that improve business performance. Bring your own license (BYOL) enables businesses to save money on current IT investments while modernizing operations with cloud migration. While cost is always an important consideration, the improved data security, business agility, and simplification of the overall IT landscape afforded by AWS are the most frequently cited drivers of cloud workload migration. Businesses benefit from the added convenience and significant cost savings compared with running these workloads in their own datacenters. Running Windows workloads in the cloud enables IT organizations to rapidly deliver new services to the business that result in better customer and employee service experiences. In industries impacted by large seasonal fluctuations in demand, Windows workloads running in the AWS cloud are infinitely more scalable. This means that the business can easily adapt to changes in demand without increasing the burden on IT staff. This frees up IT resources to spend their time on higher-value initiatives like DevOps to create more internal applications. A significant advantage of running Windows on AWS is the ability to quickly assess the resources required for a particular workload by spinning up an instance to determine more precisely what is required to support that workload. It becomes possible to start with the minimum and scale quickly. This helps avoid unnecessary costs and better align resources to requirements.

OVERVIEW OF WINDOWS WORKLOADS ON AWS

Windows workloads continue to be the foundation of most organizations. Business-critical workloads like SQL Server, Windows Server, .NET solutions, and Active Directory require higher levels of security to protect sensitive customer data. Having a robust and secure infrastructure is essential for these types of workloads. The applications and data included in these workloads are accessed frequently by a large number of users across business domains and must be consistently available wherever and whenever needed. In 2008, AWS launched a portfolio of services designed to support many Windows workloads.

Businesses can choose from a wide variety of virtual server instance types, each with different performance characteristics across compute, networking, memory, and storage. There are different licensing options to help businesses optimize the cost of running Windows workloads on the AWS cloud, including purchasing licenses from AWS with consumption pricing and "bring your own license." AWS also provides preconfigured Amazon Machine Images (AMIs), with different versions of Microsoft software licenses included, such as Windows Server and SQL Server.

For database workloads, businesses can use Amazon Elastic Compute Cloud (EC2) and Amazon Elastic Block Store (EBS) to run their SQL Server instances. Businesses can also use Amazon Relational Database Service (RDS) to run their SQL Server databases as a managed service.

AWS offers secure storage options, including persistent block storage, file storage, and scalable object storage, and low-cost storage for archiving and backup, as well as Amazon FSx for Windows File Server, a fully managed Windows file system. Microsoft Active Directory integration with AWS provides identity federation, directory management, security and auditing, and AWS Directory Service value-added features. Finally, AWS offers a comprehensive set of management tools. The management tools include services for configuration, monitoring, and development:

- **Configuration:**

  - AWS Config

  - Amazon EC2 Run Command

  - PowerShell Integration

- **Monitoring:**

    - AWS CloudWatch

    - AWS CloudTrail

- **Development:**

    - .NET SDK

    - AWS Toolkit for Visual Studio

    - AWS CodeDeploy

    - AWS Elastic Beanstalk

    - AWS CloudFormation

THE BUSINESS VALUE OF WINDOWS WORKLOADS ON AWS

Study Demographics

IDC conducted in-depth interviews with 12 organizations that are running various Windows workloads, including enterprise application workloads, database workloads, and custom applications, in the AWS cloud. Interviews were designed to understand the impact for these organizations of running their Windows workloads on AWS compared with the previous IT infrastructure environments. On average, interviewed organizations were large, with 28,000+ employees and almost $5 billion per year in revenue. They provided insights from a variety of industry verticals — food and beverage, government, healthcare (3), higher education, manufacturing (2), retail, telecommunications, and transportation (2) (see Table 1 for additional details).

TABLE 1 Demographics of Interviewed Organizations

	Average	Median
Number of employees	28,579	6,750
Number of IT staff	1,581	250
Number of business applications	149	150
Revenue per year	$4.65 billion	$1.5 billion
Country	United States	
Industries	Food and beverage, government, healthcare (3), higher education, manufacturing (2), retail, telecommunications, transportation (2)	

n=12   Source: IDC, 2019

Choice of AWS for Running Windows Workloads

Most study participants moved Windows workloads to AWS from legacy on-premises environments, although several also migrated systems in part from other public cloud environments. Study participants' reasons for choosing AWS varied, but interviewees returned to themes such as cost, robustness, security, management, and performance. For example, interviewees explained the choice of AWS:

- **Healthcare organization:** *"We needed to get away from our on-premises environment for a variety of reasons — mostly for data security — and we were long overdue for this move because our servers were breaking regularly. AWS gave us the best pricing, and we felt its security measures were more far reaching."*

- **Food and beverage organization:** *"We chose AWS for our Windows workloads because it has a more robust infrastructure, and in the cloud space, it is the outright leader … Amazon won out because of its breadth of services, security-minded configurations, number of datacenters, and built-in redundancy."*

As shown in Table 2, study participants have moved significant Windows workloads to the AWS cloud, using 112 AWS EC2 server instances on average and spending almost $1 million per year. These organizations reported running diverse Windows workloads on AWS, including collaboration, database, analytics, enterprise resource, and custom applications.

TABLE 2 AWS Use by Interviewed Organizations

	Average	Range
Spend per year on AWS	$976,300	$235,000
Number of Amazon EC2 server instances (average)	112	13
Number of Amazon EC2 instances for SQL	27	9
Number of Amazon RDS databases	38	7
Number of terabytes	133	25
Number of applications	43	5
Number of internal IT users	4,185	2,500

n=12   Source: IDC, 2019

# Quantifying the Value of Running Windows Workloads on AWS

IDC's research demonstrates that by moving Windows workloads to AWS, study participants are capturing significant benefits in terms of operational efficiencies, flexibility, and improved performance. As a result, they have optimized their Windows environments to accommodate growth, ensure that their IT organizations can match business demand, and position their businesses to achieve business growth in an efficient and cost-effective manner. Based on interviews with these organizations, IDC quantifies the value they will achieve by running Windows workloads on AWS at an average of $157,300 per 100 users per year ($6.59 million per organization) in the following ways (see Figure 1):

- **IT infrastructure cost reductions:** Study participants reduce costs associated with running on-premises environments and benefit from more efficient use of infrastructure and application licenses. IDC calculates that they will save an average of $11,100 per 100 users per year ($0.46 million per organization).

- **IT staff productivity benefits:** Study participants reduce the day-to-day burden on IT infrastructure, database, application management, help desk, and security teams and enable application development teams to work more effectively. IDC quantifies the value of staff time savings and productivity gains at an annual average of $43,100 per 100 users ($1.80 million per organization).

- **Risk mitigation — user productivity benefits:** Study participants minimize the operational impact of unplanned application outages. IDC calculates that they will realize

higher user productivity worth an average of $18,400 per 100 users per year ($0.77 million per organization).

- **Business productivity benefits:** Study participants better address business opportunities and provide their employees with higher-performing and more timely applications and features. IDC puts the value of the resultant higher productivity and revenue at an annual average of $84,700 per 100 users ($3.46 million per organization).

FIGURE 1   Average Annual Benefits per Organization

Average annual benefits: $157,300 per 100 users
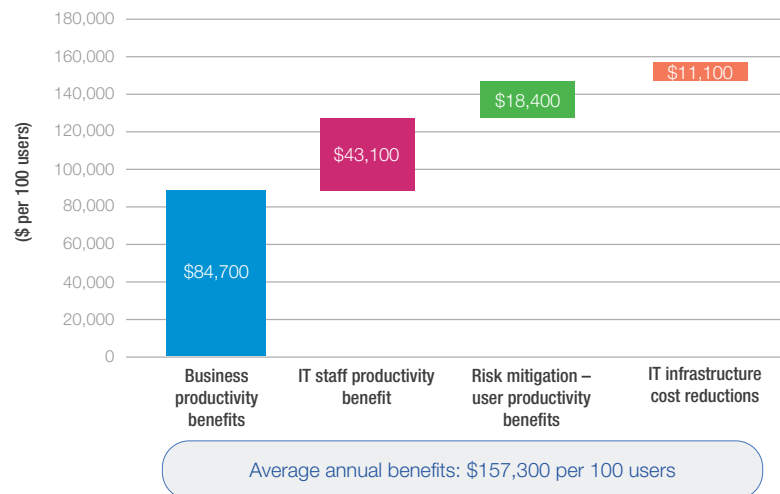
n=12   Source: IDC, 2019

Infrastructure Cost Savings

A number of interviewed organizations said that moving away from building and maintaining on-premises infrastructure environments was a catalyst in their decision to migrate Windows workloads to AWS. These organizations concluded that they were not only taking on costs related to buying and maintaining hardware but also incurring inefficiencies in the use of IT capacity and licensing. Thus AWS offered these organizations the opportunity to not only change how they pay for the IT infrastructure running their Windows workloads by moving to an OpEx cost model but also reduce their overall costs through reuse of and "bring your own" licenses, as well as more targeted use of compute, storage, and database capacity. The AWS customers interviewed for this study reported paying 37% less on an annualized basis than for comparable workloads with their previous IT environments (see Figure 2). Interviewed organizations described these types of cost efficiencies:

- **Food and beverage organization:** *"We definitely go 'on the cheap' to start with AWS because it's easy just to add extra storage per server instance in seconds. We will spin up a workload with what we feel is the minimum, and then add to it as needed. It definitely has put us in a better place to utilize resources regarding services and infrastructure."*

- **Healthcare organization:** *"Licensing cost efficiencies was one of the reasons we went to the cloud with AWS. The way that you collaborate these licensing contracts through AWS for software licenses versus having to buy the licenses on our own has already been more cost effective for us. We're saving 10%."*

FIGURE 2 Five-Year IT Infrastructure Costs

n=12   Source: IDC, 2019
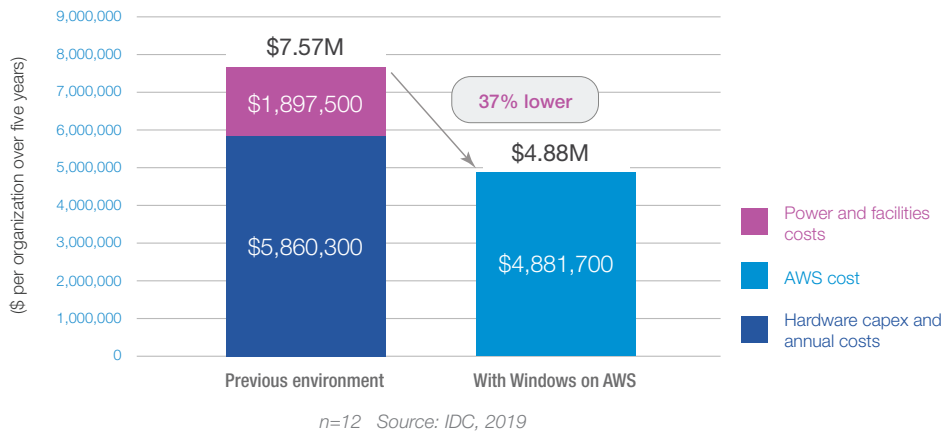
IT Staff Productivity Benefits

Study participants consistently cited IT staff efficiencies as one of the most important benefits of moving Windows workloads to AWS (see Table 3). Running Windows workloads that include enterprise, database, and custom applications requires effort from a number of IT teams, including IT infrastructure, application management, help desk, database administrator, and IT security teams. For interviewed organizations, running Windows workloads on their legacy on-premises environments often required too much of these teams' time, leaving them unable to support forward-looking IT and business initiatives. In particular, these teams were burdened with manual processes related to monitoring, patching, updating, securing, and provisioning for Windows workloads. In many cases, this meant that IT teams could not focus on innovation and drive strategic initiatives to the extent that their changing businesses required.

Interviewed organizations uniformly reported that moving Windows workloads to AWS has reduced the burden and enabled IT teams to better align and support strategic activities. They

not only benefit from not needing to maintain and support on-premises infrastructure but also can leverage AWS' platform automation and other built-in features. The result is substantial across-the-board efficiencies, including a 75% efficiency improvement for IT infrastructure teams, 59% efficiency improvement for IT security teams, and an average efficiency of 47% across all teams.

Interviewed organizations stressed that these efficiencies empower IT teams to reallocate and dedicate staff time to activities and projects related to innovation. Almost every interviewed organization provided specific examples of how their IT teams are leveraging efficiencies with AWS to deliver more value to their organizations, including:

● **Healthcare organization:** *"The amount of time that we're spending on managing Windows applications now with AWS versus on-premises servers is minimal … It's allowed our team to work on other IT infrastructure upgrades. Our team can now spend 60–70% of their time available to work on these infrastructure and enterprise software projects."*

● **Transportation organization:** *"With AWS, we say around here: 'set it and forget it'. Our server administrators work to deploy applications in AWS, which they do one time to get it going, and it works … AWS has allowed them to work on other projects."*

● **Food and beverage organization:** *"Our IT infrastructure team is definitely spending more time engineering with AWS … This gave us a competitive advantage when they started designing redundant fault tolerant systems."*

TABLE 3 IT Staff Impact with AWS

	Previous Environment	With Windows on AWS	Increased Value with AWS	Efficiency with AWS (%)
IT infrastructure management (FTEs)	10.3	2.6	7.7	75
Application management (FTEs)	8.7	5.7	3.0	34
IT support (FTEs)	6.5	4.6	1.9	30
DBAs (FTEs)	3.9	2.8	1.2	30
IT security (FTEs)	1.9	0.8	1.1	59
Overall (FTEs)	31.3	16.5	14.9	47

n=12   Source: IDC, 2019

Increased Business Agility and More Effective Development

Study participants reported that their move to the AWS cloud for Windows workloads has substantially improved the agility and flexibility of their IT operations. These organizations too often found with their legacy environments that they had to either overprovision infrastructure or justify purchases on an ongoing basis. In other words, they had to choose between a cost-inefficient setup or risk not meeting business demand in a timely manner. Given the significance of Windows workloads to their businesses, neither option was satisfactory.

However, study participants have made significant strides to ensure that their IT operations are flexible from both cost and agility perspectives with AWS. They reported benefiting from being able to add compute, storage, or database resources on short notice and from requiring less time to carry out deployments. Interviewed AWS customers described these advantages:

- **Healthcare organization:** *"With AWS, we can scale up or down on a moment's notice. And we know that everything is going to be consistent without having to stress over it."*

- **Telecommunications organization:** *"Before AWS, adding storage was a capital budget request, which could take two to three months. Now, it's in our operations budget, so we don't have to get approval, and it takes one hour."*

For interviewed organizations, increased agility in their IT environments with AWS is reflected in the metrics shown in Table 4, namely, requiring far less staff time to deploy new compute resources (71% less), new storage resources (65% less), and new databases (71% less).

TABLE 4 IT Agility Metrics with AWS

	Previous Environment	With Windows on AWS	Difference	Change (%)
Staff time to deploy new compute (hours)	5.6	1.6	4.0	71
Staff time to deploy new storage (hours)	2.8	1.0	1.8	65
Staff time to deploy new database (hours)	10.9	3.1	7.8	71

n=12   Source: IDC, 2019

Greater IT agility with AWS serves various teams at interviewed organizations, including development teams supporting Windows applications and workloads. Having constant and seamless access to resources for testing and deployment activities is especially beneficial and helps development teams speed up development cadence and ultimately increases the value of their work. Table 5 reflects the extent to which AWS has enabled their efforts — delivering more new applications (110% more) and new features (64%) in less time (41% and 47% faster

development life cycles for new applications and new features, respectively). This results in an average productivity gain of 26% for Windows-related developers at these organizations.

Interviewees spoke of the impact of developing on the AWS cloud:

- **Manufacturing organization:** *"With AWS, we can now spin up new environments and give autonomy to our development team to play and to explore … Now, with CloudFormation on AWS, we spin up sites at will. It definitely makes us more agile."*

- **Food and beverage organization:** *"With AWS, our development teams can spin up instances at will. When they need to expand our infrastructure, it has greatly increased their ability to create and develop new and exciting features, like more proactive infrastructure development."*

TABLE 5 Application Development KPIs with AWS

	Previous Environment	With Windows on AWS	Difference	Change (%)
New applications and new logic				
Number of new applications/logic developed per year	5.0	10.5	5.5	110
Development life cycle (weeks)	11.2	6.6	4.6	41
New features				
Number of features developed per year	17.2	28.2	11.0	64
Development life cycle (weeks)	2.2	1.2	1.0	47
Application development team productivity				
Equivalent productivity level per organization (FTEs)	12.2	15.4	3.2	26

n=12   Source: IDC, 2019

Higher Security, Reliability, and Performance

IDC's research also demonstrates the extent to which study participants have benefited from running Windows workloads on AWS in terms of security, reliability, and performance. Overall, these organizations are achieving an important reduction in operational risk related to reputation, business continuity, and ability to meet fast-changing business conditions:

- **Improved security posture:** As previously noted, study participants have increased the efficiency of their security teams by moving Windows workloads to AWS (59% on average; refer back to Table 3). More importantly, they reported better positioning of their businesses in terms of security and reducing security-related risk with AWS. A

telecommunications organization explained: *"We're seeing strong gains with AWS in security because it was becoming problematic for us. With AWS, we're delivering higher levels of protection and added in vulnerability scans."*

● **Increased reliability:** Study participants have significantly reduced the impact of unplanned outages on their employees and businesses by running Windows workloads on AWS. As shown in Table 6, they have on average reduced the amount of productive time lost per user of Windows applications from nearly 5 hours to under 10 minutes per year. A government organization commented: *"Being on AWS has been a drastic change for us in terms of user accessibility for Windows workloads because we had major issues before with [our legacy environment] … Automated failover is key — AWS does it flawlessly without us noticing."*

● **Better performance:** Interviewed organizations have also benefited from improved performance of Windows workloads running on AWS. Users benefit from improved performance of applications (19%) and database (18%), both of which contribute to higher internal satisfaction with IT performance (31% higher).

TABLE 6 Impact on Unplanned Downtime

	Previous Environment	With Windows on AWS	Difference	Change (%)
Unplanned outages per year per organization	16.0	3.0	13	82
Mean time to recover (MTTR) (hours)	2.7	0.5	2.2	82
Lost productivity per year per user (hours)	4.7	0.1	4.6	98
FTE impact (lost user productivity per year)	10.5	0.2	10.3	98

n=12   Source: IDC, 2019

Business Productivity Benefits

Study participants reported running Windows workloads on AWS to achieve significant business-related benefits in terms of operational efficiencies through higher employee productivity and revenue gains.

Employees who rely on Windows workloads to do their jobs benefit from improved performance and timely delivery of new functionality. A healthcare organization commented on the impact: *"We benefit with AWS from having the ability to get new applications up faster to test. Business units come to IT and want an application spun up by tomorrow. We can now have new applications and features up in literally a couple of hours."* For certain groups of employees,

these types of benefits have a significant impact on how they work. IDC found that almost 900 employees using Windows workloads running in the AWS cloud benefit with an average 32% higher gross productivity level, demonstrating the extent to which AWS has enabled them on a day-to-day basis (see Table 7).

TABLE 7 Business Productivity Benefits: Increased User Productivity

	Per Organization	Per 100 Users
Number of users impacted	894	21
Average gross productivity gain	32%	32%
Equivalent net FTE gain	37.7	0.9

n=12   Source: IDC, 2019

Study participants also attribute increased revenue to running Windows workloads in the AWS cloud (see Table 8). They noted being able to better focus on delivering business results rather than worrying about day-to-day operational matters, which has resulted in higher revenue that IDC quantifies at a value of just over $6 million per year. A retail organization explained: *"With AWS, we have more time to look at new technology, innovation, things like that. We can focus on mobile and deliver more products to the business, which they have been asking for. It has been a big game changer for us."* A manufacturing organization linked AWS to focusing more on revenue-generating activities: *"AWS took our storage-intensive and static workloads off our hands. This immediately provided an increase in responsiveness for our internal resources, and we were able to reallocate servers to more comprehensive revenue-generating uses such as R&D for enhanced chip development."*

TABLE 8 Business Productivity Benefits: Increased Revenue

|	Per Organization	Per 100 Users
Additional revenue per year	$6.05 million	$144,400
Recognized revenue per year — IDC model*	$906,800	$21,700

n=12   Source: IDC, 2019

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

ROI and Business Value Analysis

IDC's business value analysis is based on interviews with organizations that are running various Windows workloads in the AWS cloud. Interviews were in-depth in nature and designed to capture quantitative and qualitative details about the impact of running these Windows workloads on AWS. For more details about IDC's business value methodology, see the Appendix.

From a cost of operations perspective, study participants have significantly reduced the cost of building and running the infrastructure foundation for running their Windows workloads. As shown in Figure 3, IDC calculates that organizations will save 56% over five years in terms of IT infrastructure costs, IT staff time costs (IT infrastructure and DBA teams), and productivity costs related to unplanned outages.

FIGURE 3 Five-Year Cost of Operations
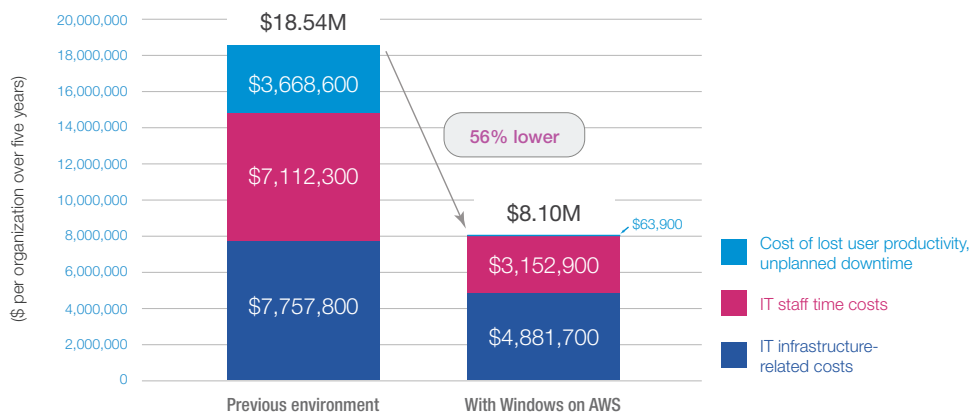
n=12   Source: IDC, 2019

Table 9 provides details about IDC's analysis of the benefits and investment costs for interviewed organizations of running Windows workloads on AWS. IDC calculates that study participants will realize discounted five-year benefits worth an average of $547,500 per 100 users ($22.92 million per organization) in reduced costs, IT team efficiencies, and higher revenue and user productivity levels. These benefits are based on total discounted investment costs of an average of $101,000 per 100 users over five years ($4.23 million per organization), which includes AWS subscription costs, staff time required for deployment and migration, and other third-party expenses. IDC projects that at these levels of benefits and costs, study participants will realize an average five-year ROI of 442% and break even on their investment in AWS in an average of nine months from the beginning of deployment.

TABLE 9 ROI Analysis

	Five-Year Average per Organization	Five-Year Average per 100 Users
Benefit (discounted)	$22.92 million	$547,500
Investment (discounted)	$4.23 million	$101,000
Net present value (NPV)	$18.69 million	$446,500
Return on investment (ROI)	442%	442%
Payback period	9 months	9 months
Discount rate	12%	12%

Source: IDC, 2019

CHALLENGES AND OPPORTUNITIES

Businesses that are considering or are engaged in migrating Windows workloads to AWS should realize that a reduction in cost is one of many benefits attributed to the migration. The tendency to overemphasize direct cost reduction over equally or even more important benefits like increased speed, flexibility, and resilience may lead to setting less-than-optimal expectations with key stakeholders. In most cases, a reduction in on-premises infrastructure cost is experienced over time as additional workloads are moved to AWS and the business identifies ways to simplify operations. Gains in speed and agility are realized quickly and therefore should be identified as primary reasons for the move to AWS.

Migration of workloads, especially business-critical applications such as Windows workloads, involves people and processes. Technology change will only succeed if the business understands the implications for users that rely on applications, processes, and data to get their jobs done. The migration of Windows workloads to AWS offers an opportunity to discover ways to streamline processes and workflows that run across applications and borders while improving regulatory compliance with AWS global certifications. Businesses that consider moving Windows workloads to AWS will benefit from referencing the extensive library of lessons learned and best practices offered by AWS to ensure a faster, more efficient, and predictable migration. Armed with a complete understanding from the start of the journey, businesses can create and communicate a migration plan that satisfies all impacted stakeholders.

CONCLUSION

Windows workloads remain business critical for most organizations and thus require a robust and secure infrastructure. While users of these applications have increasing expectations regarding performance, functionality, and mobile access, continued data growth and high user experience expectations have put pressure on IT costs and staffing requirements. These combined trends have spurred IT organizations to look at new approaches for delivering Windows workloads, including running them in the public cloud. While early cloud migrators were driven largely by IT cost savings through moving away from on-premises infrastructures, organizations increasingly understand that cloud can deliver even more value through efficiencies, performance, agility, and security.

This IDC white paper demonstrates the strong value that interviewed organizations are achieving by migrating and running substantial Windows workloads in the AWS cloud. These AWS customers reported not only reducing the cost of running their Windows applications but also capturing significant value through enabling their IT and business operations with efficiencies, flexibility, and improved performance. They described translating enhanced agility in the AWS cloud to faster delivery of new services and application functionality to customers and users while also providing better experiences and lower risk through strong performance and security. Thus they are better positioned to support their growing businesses that continue to rely on these Windows applications. Overall, IDC's analysis shows that this group of interviewed AWS customers will achieve significant absolute and relative value with a projected five-year ROI of 442% by running Windows workloads in the AWS cloud.

APPENDIX

Methodology

IDC's standard ROI methodology was utilized for this project. This methodology is based on gathering data from organizations currently using AWS to run Windows workloads as the foundation for the model. Based on interviews with these study participants, IDC performs a three-step process to calculate the ROI and payback period:

● Measure the benefits associated with using AWS for Windows workloads in terms of infrastructure-related cost savings, IT staff efficiency, and productivity benefits (higher user productivity and increased revenue).

● Ascertain the investment made in deploying and using AWS.

● Project the costs and benefits over a five-year period and calculate the ROI and payback for AWS.

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, IDC has used standard business value 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 for non-IT staff members. IDC assumes that employees work 1,880 hours per year (47 weeks x 40 hours).

● Downtime values are a product of the number of hours of downtime multiplied by the number of users affected.

● The impact of unplanned downtime is quantified in terms of impaired end-user productivity and lost revenue.

● Lost productivity is a product of downtime multiplied by burdened salary.

● 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 every hour of downtime does not equate to a lost hour of productivity or revenue generation, IDC attributes only a fraction of the result to savings. As part of our assessment, we asked each company what fraction of downtime hours to use in calculating productivity savings and the reduction in lost revenue. IDC then taxes the revenue at that rate.

- Further, because IT solutions require a deployment period, the full benefits of use of AWS 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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