The Business Value of Ubuntu on Microsoft Azure

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BUSINESS VALUE HIGHLIGHTS

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306%
three-year ROI

11 months
to payback

35%
lower three-year cost of operations

29%
lower infrastructure costs

37%
more efficient IT infrastructure teams

40%
more efficient IT security teams

63%
faster to deploy new compute resources

85%
less unplanned downtime

52%
faster to scale to new business opportunities

Executive Summary

The expansive Linux operating system market includes various distributions for desktops, servers, VMs, and embedded systems. This market has an open source foundation, which enables extensive customization and fosters a dynamic and collaborative developer community. The use of Linux in the enterprise continues to grow, owing to the increasing demand for flexible, secure, and cost-effective IT infrastructure.

Ubuntu is an enterprise-class Linux distribution from Canonical that can seamlessly work on Microsoft Azure through infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS) options, providing scalability, reliability, and optimized performance for a wide range of workloads. This approach allows organizations to leverage the strengths of Ubuntu while benefiting from Azure's advanced cloud infrastructure, which includes automated management, enhanced security, and superior scalability.

This white paper highlights the business value of migrating Ubuntu workloads from on premises to Azure. The document comprehensively analyzes how this approach enhances operational efficiency, security, and scalability; outlines the technical benefits, such as performance optimization and cost-saving opportunities; and discusses the positive impact on IT operations, including improved resource allocation and business continuity. This white paper serves as a valuable resource for

organizations considering the transition to a cloud-based environment using Ubuntu on Azure, offering insights into this combination's practical and financial advantages.

IDC assessed the impact on organizations using Azure to run Ubuntu workloads (Ubuntu on Azure). Study participants reported that Azure provides a more efficient and effective platform for their Ubuntu workloads. This maximizes the value of Ubuntu workloads central to business activities and new technology adoption.

IDC calculates that, based on in-depth interviews with Ubuntu on Azure customers, study participants will realize benefits averaging $13.36 million per year per organization ($3.81 million per 100 Azure VMs) by:

- Optimizing IT costs through increased scalability, flexibility, and interoperability across Ubuntu environments
- Becoming more operationally efficient, saving IT teams significant time on patching, maintenance, and monitoring, allowing them to refocus on other value-add and innovative activities
- Improving agility and flexibility to better respond to business opportunities and enable development teams to work more effectively
- Enhancing security and ensuring performance, which reduces security-related risk and minimizes operational disruption from application outages and performance issues
- Driving experimentation with new technologies and improving customer experiences by supporting experimentation and the use of newer technologies, such as GenAI and ML

Situation Overview

Ubuntu can work seamlessly on Azure through IaaS and PaaS options, providing scalable and optimized performance for various workloads. This seamless deployment capability enables organizations to overcome challenges when adopting new technologies. Ubuntu's open source nature allows for extensive customization and fosters a vibrant community of developers who constantly contribute to improvements and innovations. By leveraging Azure's robust cloud infrastructure to deploy Ubuntu, organizations can enhance operational efficiency, security, and scalability, addressing the complexities of modern IT environments.

Organizations continue to turn to cloud solutions to alleviate the complexities of managing container-based applications and infrastructure. Running on-premises systems comes with hardware failures and limited resources, which the transition to the cloud can mitigate.

Cloud environments offer constant monitoring, updates, and security patches, reducing the burden on internal teams. This shift enhances security and efficiency and allows organizations to innovate and scale more effectively, increasing productivity and profitability. Azure offers enhanced security compared to typical enterprise setups, particularly for mission-critical system infrastructure, which requires robust security and regular updates. Providers such as Canonical ensure their Linux installations are secure and up to date with optimization for specific workloads, enhancing efficiency and performance. Ubuntu includes a suite of security tools that help keep systems secure and up to date. Additionally, Ubuntu's enterprise version offers extended security maintenance and specialized support. Offloading tasks such as authentication to the cloud environment boosts security, making it an attractive option for reliable and efficient infrastructure management.

Enterprises benefit significantly from migrating to the cloud, as they no longer need to handle the deployment of Kubernetes or other operational tasks, which cloud providers manage instead. Cloud-based deployment allows developers to focus on developing digital solutions and enhances code portability. This improves developer efficiency and allows developers to focus more on writing innovative applications. Cloud platforms provide access to advanced tools and resources such as AI and GPUs that enable developers to experiment and scale their applications without on-premises hardware limitations. By leveraging cloud infrastructure, developers can utilize cutting-edge technologies to drive innovation while improving application performance, which is crucial for staying competitive in the rapidly evolving tech landscape.

Ubuntu Workloads on Microsoft Azure

Ubuntu is a widely used Linux distribution that serves various purposes, including servers, desktops, cloud, and IoT. In the cloud, Ubuntu offers two main versions: Ubuntu Server, the community version with five years of maintenance and security updates, and Ubuntu Pro, the enterprise version that provides additional security and compliance features with up to 12 years of support. Ubuntu on Azure combines this popular Linux distribution with the Azure platform. This solution ensures scalability, performance, security, and cost-effectiveness, making it an attractive choice for running enterprise applications on Ubuntu.

Organizations face several challenges that Ubuntu on Azure aims to address. AI readiness is a significant concern, as running AI workloads on premises can be costly and inefficient. By migrating to Azure, organizations can access scalable and advanced AI technologies. Manual, time-consuming tasks are another challenge that Azure Automanage and

Microsoft Copilot in Azure can alleviate, automating updates and backups and scaling and freeing up developer and operations resources to deliver more innovative digital solutions. Security and compliance are critical, and Azure provides robust solutions to protect against threats and ensure compliance. Shifting from capex to opex models can improve cost management, reduce upfront investments, and optimize resource utilization. Additionally, Azure offers better scalability, allowing organizations to adjust IT resources based on demand, and enhances business continuity and reliability by providing reliable disaster recovery solutions.

Migrating Ubuntu workloads to Azure offers numerous business benefits, including enhanced agility, improved security, and maximized ROI. Organizations can accelerate their path to AI readiness by leveraging Azure's scalable and advanced AI technologies. The collaboration between Microsoft and Canonical ensures high-quality image releases and support for new platform features, providing a well-supported and optimized experience on Azure. This integration offers unique capabilities, such as in-place upgrades to Ubuntu Pro and performance optimization, ensuring a consistent and efficient operating environment across various workloads. Additionally, Ubuntu integrates with key Azure services, such as Azure Guest Patching and Update Management Center, and is compatible with all Azure VM families and Azure confidential VMs.

The Business Value of Ubuntu on Microsoft Azure

Study Firmographics

IDC conducted in-depth interviews with IT managers responsible for their organizations' use of Azure to run Ubuntu workloads. Interviews sought to understand and assess the impact on IT costs, staff time requirements, agility, performance, and business outcomes from a quantitative and qualitative perspective.

Table 1 (next page) provides firmographic information about the organizations interviewed. The study included organizations ranging from financial services and manufacturing companies to companies in the media, professional services, and technology sectors. They varied in size, with employees ranging from 11,000 to 425,000 and annual revenues spanning from $500 million to $148.8 billion, with averages of 120,714 employees and $37.47 billion in annual revenue. Despite these differences, all organizations reported positive experiences with Ubuntu on Azure.

TABLE 1

Firmographics of Interviewed Organizations

	Average	Median
Number of employees	120,700	20,000
Number of IT staff	8,000	2,000
Number of business applications	1,900	350
Revenue per year	$37.47B	$15.00B
Countries	United States (3), United Kingdom (2), Germany, India	
Industries	Financial Services (2), Manufacturing (2), Media, Professional Services, Technology	

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Choice and Use of Ubuntu on Microsoft Azure

Study participants described why they chose Ubuntu as a Linux platform for many of their most important business applications and why they chose Azure to run these Ubuntu workloads.

Organizations described using Ubuntu for its flexibility, security, and cost-effectiveness, which are important factors for running important data-driven business applications. They cited the strong control that Ubuntu provides for engineering simulations and data analytics workloads. They view Ubuntu as a robust and stable Linux solution, offering a cost-effective alternative to other Linux distributions. Additionally, they see its efficiency, agility, and scalability as beneficial for supporting innovation and growing businesses.

Interviewed organizations reported migrating on-premises Ubuntu workloads to and deploying new ones on Azure for several reasons. Prominently, they emphasized the scalability, efficiency, and flexibility that Azure provides as significant advantages. They cited the ease of migration and deployment, which has allowed them to lift and shift applications to Azure without rewriting. With its pay-as-you-go structure, the operational model of Azure offers additional benefits, as does consolidating various Linux environments with Ubuntu on Azure. Ultimately, organizations concluded that Ubuntu on Azure offered the best platform and solution due to cost, performance, scalability, and security capabilities, especially for workloads focused on data analytics and other new technologies.

Study participants defined their organizations' decision criteria:

The best platform and solution:

"We chose Ubuntu on Azure due to cost, performance, scalability, security, and our relationship with Microsoft. Our goal was to optimize both on-premises and cloud infrastructure for data analytics and ML."

Ease of migration/deployment:

"We chose Azure for Ubuntu workloads because it allows us to lift and shift without rewriting applications."

A means to move away from managing licenses and the benefit of the opex model:

"Choosing Ubuntu on Azure allows us to avoid managing licenses. The pay-as-you-go model ensures we get support, and everything is properly licensed."

A platform for a consolidated Linux environment:

"We consolidated with Ubuntu on Azure from various Linux flavors across our distributed environment, which led to security issues."

Table 2 details the study participants' use of Ubuntu on Azure. They reported running significant numbers of Ubuntu-based applications on Azure, with an average of 125 applications requiring 351 Azure VMs. Their use of Azure for these Ubuntu workloads inclines more toward infrastructure as a service (80% of workloads) than a smaller share of platform as a service (20%). Study participants leverage the Azure platform to run data-heavy Ubuntu workloads and those that rely on new technologies such as GenAI and AI.

TABLE 2

Ubuntu on Microsoft Azure Interviewed Organizations, Use

	Average	Median
Average number of Azure VMs, Ubuntu	351	150
Number of applications	125	120
Number of internal users	17,700	2,000

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Business Value and Quantified Benefits of Ubuntu on Microsoft Azure

Study participants cited competitive differentiators of using Azure to run Ubuntu workloads, including:

- Experimenting proactively with newer technologies, such as GenAI
- Using and embedding AI for IT and business purposes
- Reducing deployment times and being faster to market
- Minimizing cybersecurity-related risk
- Scaling and bursting to meet business needs

These examples reflect study participants' ability to generate more value using Ubuntu on the Azure platform. This has made Ubuntu an indispensable business platform, as Azure limits friction and inefficiencies of on-premises Ubuntu infrastructures.

Study participants detailed how running Ubuntu on Azure has benefited them:

Cost, integration, strong data capabilities:

"Ubuntu on Azure offers significant cost savings and scalability compared to on-premises solutions. It also provides excellent integration and interoperability and helps address data challenges, enhancing completeness, accuracy, and availability to support business decisions."

Improved performance, more efficient operations:

"Our application and systems performance has greatly improved with Ubuntu on Azure … patching, maintenance, and monitoring have all significantly enhanced."

Flexibility and operational efficiencies:

"Before Ubuntu on Azure, we faced high maintenance costs and limited scalability with our on-premises setup, requiring more IT staff. With Ubuntu on Azure, we gained flexibility, reduced operational overhead, and improved global reach."

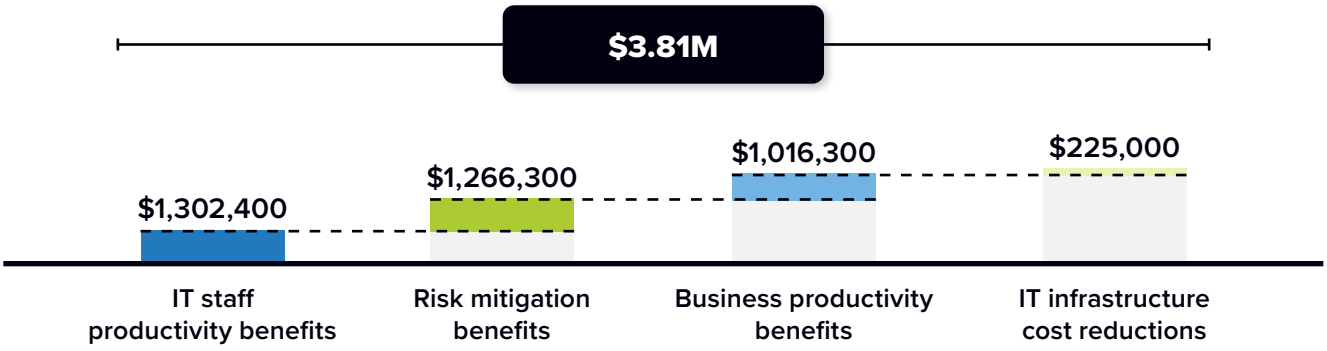
Based on interviews with organizations using Ubuntu on Azure, IDC calculates that they will realize benefits worth an annual average of $13.36 million per organization ($3.81 million per 100 Azure VMs) in the following areas:

- **IT staff productivity benefits:**
  Leveraging automation and strong monitoring capabilities leads to efficiencies and productivity gains for IT infrastructure, security, and development teams. IDC estimates that these efficiencies and productivity gains will be worth an annual average of $4.57 million per organization ($1.30 million per 100 Azure VMs).
- **Risk mitigation — user productivity benefits:**
  Reducing the frequency and duration of unplanned outages and minimizing security problems reduces application unavailability and performance degradation costs. IDC calculates that interviewed organizations will capture productivity and revenue gains worth an average of $4.44 million per organization per year ($1.27 million per 100 Azure VMs).
- **Business productivity benefits:**
  Moving faster to address business opportunities and use new technologies helps improve business results, which IDC expects will be worth a net revenue gain of $3.56 million per organization per year ($1.02 million per 100 Azure VMs).
- **IT infrastructure cost savings:**
  Moving to an opex-focused model reduces overspending on infrastructure capacity and licensing, generating infrastructure-related cost savings of an annual average of $788,800 per organization ($225,000 per 100 Azure VMs).

FIGURE 1

Average Annual Benefits per 100 Azure VMs

($ per 100 Azure VMs)



n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

For an accessible version of the data in this figure, see Figure 1 Supplemental Data in Appendix 3.

Infrastructure Cost Savings

Interviewed organizations running Ubuntu workloads on Azure have realized significant infrastructure cost benefits. They described how the Azure pay-as-you-go model has optimized their spending by allowing them to turn VMs on and off. Moreover, moving from on premises to the cloud has minimized hardware maintenance needs and reduced capital investments.

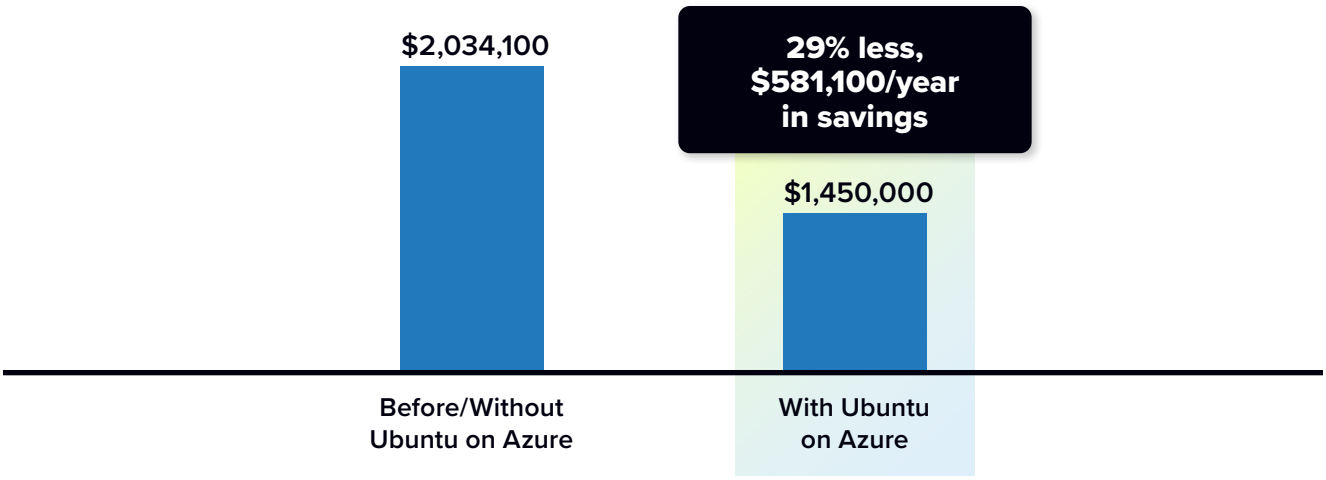
Study participants described these cost benefits. As one participant noted, *"Ubuntu on Azure replaced several types of traditional infrastructure, primarily our on-premises datacenters with physical servers,"* which required significant capital investment and ongoing maintenance. Another highlighted the benefits of the pay-as-you-go model, stating, "With the pay-as-you-go model with Ubuntu on Azure, we can turn VMs on/off and not pay when we are not using the system, meaning that pay-as-you-go improves our overall spend." This transition to Ubuntu on Azure has provided a more efficient and cost-effective infrastructure foundation.

On average, interviewed organizations reported a 29% reduction in annual infrastructure costs with Ubuntu on Azure compared with similar on-premises environments, saving $581,100 annually. Further, they have optimized licensing costs, achieving an average of $435,700 in annual database and infrastructure licensing savings (see **Figure 2**).

FIGURE 2

Annualized Infrastructure Costs

($ per organization per year)



n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

IT Staff Efficiencies

Moving Ubuntu workloads to Azure has delivered significant efficiencies for IT infrastructure teams. This shift has allowed IT teams to focus on strategic and innovative activities, such as leveraging AI and enhancing applications, rather than routine maintenance. Azure's streamlined environment and readily available Ubuntu skills in the marketplace reduced the need for extensive training and retention efforts, contributing to overall productivity improvements.

Study participants provided examples of how their IT infrastructure teams have benefited:

Refocus IT on higher-value activities, including AI:

"With Ubuntu on Azure, we leverage AI and refocus our IT team. Managing on-premises infrastructure was difficult, but Azure AI services enhanced our applications and drove innovation. We've shifted IT resources from maintenance to strategic projects, improving productivity by 25%."

More streamlined environment, ready access to skilled employees:

"With Ubuntu on Azure, all ancillary processes are included in the bill. Additionally, Ubuntu skills are readily available in the marketplace, eliminating the need for costly training and retention."

Improved documentation for training:

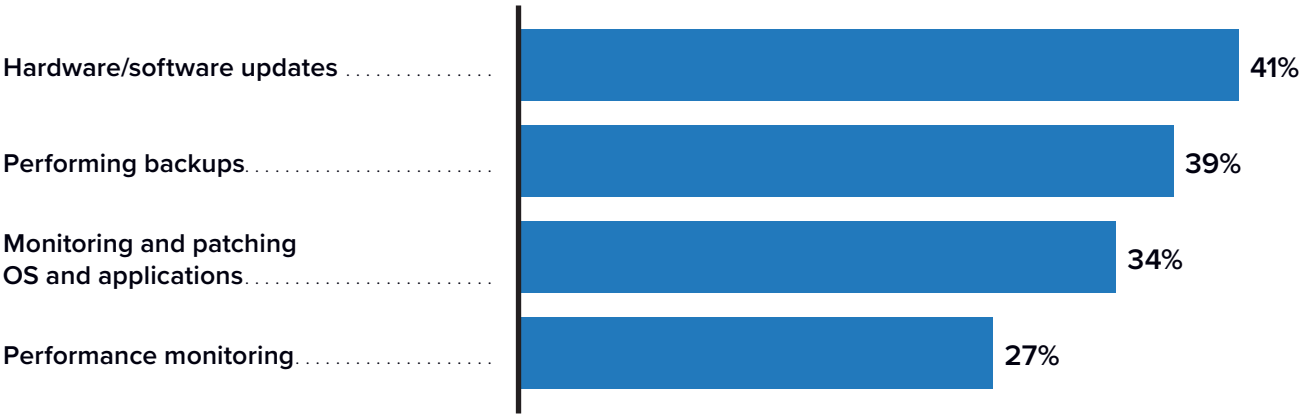
"Technical training and onboarding are easier with Ubuntu on Azure due to Azure's extensive training resources and documentation, including videos. Their documentation surpasses what we had before."

Figure 3 (next page) details how running Ubuntu workloads on Azure has minimized the burden for IT infrastructure teams on day-to-day maintenance and support activities. Efficiencies include reduced time required for updates (41%), backups (39%), monitoring and patching of operating systems and applications (34%), and performance monitoring (27%).

FIGURE 3

IT Infrastructure Team Efficiencies by Responsibility

(Percent benefit with Ubuntu on Azure)

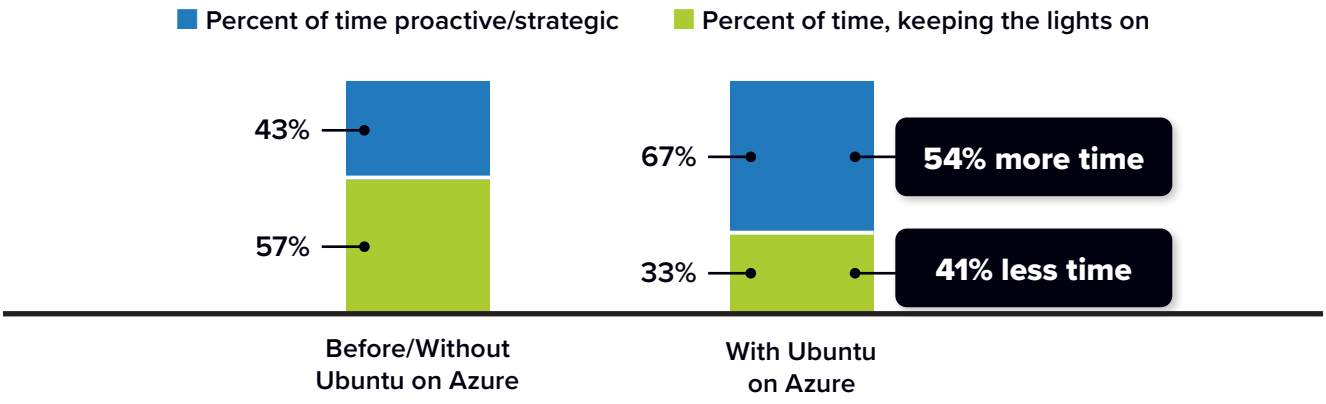


n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

These efficiencies for core IT infrastructure team responsibilities free up time to focus on other activities, including those focused on innovation and business support. As shown in **Figure 4,** IT infrastructure teams spend considerably less time on day-to-day activities with Ubuntu on Azure (41% less time on average), which in turn enables them to spend an average of two-thirds of their time on more proactive and strategic activities (54% more time on average).

FIGURE 4

Impact on IT Staff Time, Keeping Lights On Versus Innovation



n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

For an accessible version of the data in this figure, see Figure 4 Supplemental Data in Appendix 3.

As shown in **Table 3**, interviewed organizations reported 37% average efficiencies for their IT infrastructure teams by running Ubuntu workloads on Azure. This allows them to support more Ubuntu workloads without growing their teams, even as they shift more of their teams' focus to proactive and strategic efforts.

TABLE 3

Impact on IT Infrastructure Teams

Efficiencies, FTEs per Organization	Before/Without Ubuntu on Azure	With Ubuntu on Azure	Difference	Benefit
FTEs required for equivalent workloads per organization	44.8	**28.0**	16.8	37%
Staff hours required per VM per year	240.0	**150**	90.0	37%
Equivalent value of staff time required per organization per year	$4.48M	**$2.80M**	$1.68M	37%

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Security teams reaped significant benefits from moving Ubuntu workloads to Azure. Azure's comprehensive security capabilities and enhanced threat detection led to a 40% reduction in FTEs required for managing equivalent workloads (see **Table 4,** next page). This efficiency gain allowed security teams to allocate more resources to higher-value activities, improving their overall effectiveness. These collective improvements enabled organizations to better protect their Ubuntu environments while focusing on strategic security initiatives.

TABLE 4

Impact on IT Security Teams

Efficiencies, FTEs per Organization	Before/Without Ubuntu on Azure	With Ubuntu on Azure	Difference	Benefit
Equivalent FTEs required for the same workloads	15.1	**9.1**	6.0	40%
Value of equivalent FTE time required ($ per organization per year)	$1.51M	**$909,000**	$604,300	40%

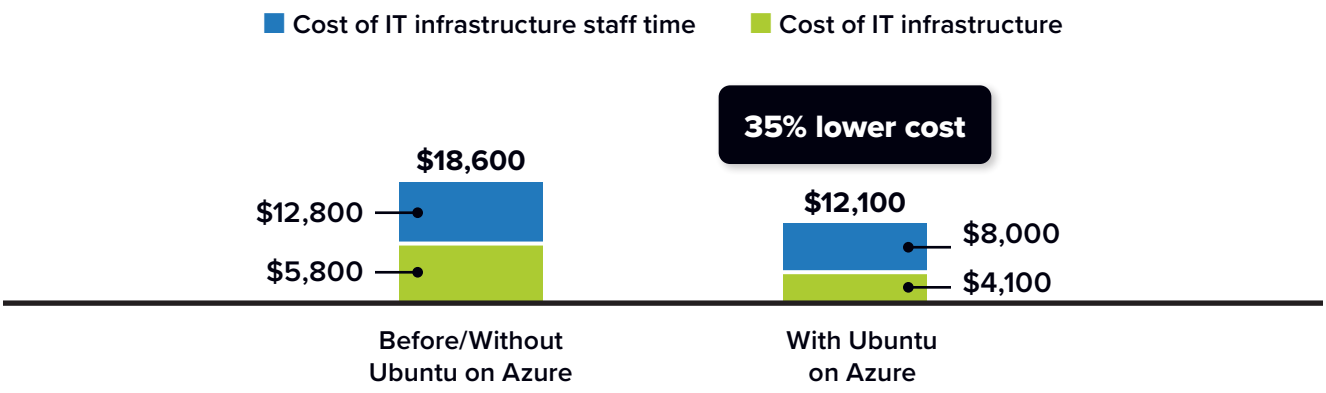
n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Lower Cost of Operations

Ubuntu on Azure reduces total operating costs by combining infrastructure and licensing cost savings alongside efficiencies for IT infrastructure teams. As one interviewed organization commented, *"Ubuntu on Azure has reduced our direct IT costs by 40%, and it also optimizes our resource allocation, so we have better operational efficiency and staff time savings."* IDC calculates that interviewed customers will reduce the cost of running Ubuntu workloads by an average of 35% over three years, saving $6,500 per Azure VM (see **Figure 5**).

FIGURE 5

Three-Year Cost of Operations per Azure VM



n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

For an accessible version of the data in this figure, see Figure 5 Supplemental Data in Appendix 3.

Impact on Agility and Development

Study participants focused on the ease with which they completed migrations of Ubuntu workloads to Azure and added or removed capacity to or from their Ubuntu on Azure environments. Regarding migration, interviewed organizations could lift and shift their applications to Azure without requiring extensive rewrites, saving time and resources. This ease of transition was valuable for organizations with existing Ubuntu environments, as it enabled seamless and cost-effective cloud migrations to realize Azure's benefits earlier.

From an ongoing perspective, gains in agility and development were notable. Study participants explained that they can adjust and scale their Ubuntu environments more rapidly and flexibly in Azure, reducing deployment-related friction on development and business activities.

Interviewed organizations provided specific examples:

Much-improved IT agility and scalability:

"The ability to scale and burst as required with Ubuntu on Azure is critical. We can deploy new servers within 45 minutes and provide services to teams as requested."

Improved scalability ensures responsiveness to business needs:

"Scalability is one of the reasons we moved to Ubuntu on Azure. We now have rapid scaling and flexible deployment, which enhance our responsiveness to business needs by almost 40%."

- Study participants have significantly reduced the time required to deploy compute and storage capacity with Ubuntu on Azure, decreasing the average time required by 63% for compute resources and 70% for storage resources. These IT agility gains and high-performing, integrated development environments with Ubuntu on Azure have positively affected study participants' development capabilities.

Interviewed organizations provided examples of how they have leveraged Ubuntu on Azure to facilitate more effective development:

Improved environment for development:

"Azure's infrastructure enhances the integrated development environment, reducing deployment time and increasing stability. This greater resiliency improves the application development experience with Ubuntu on Azure."

Value of greater flexibility and self-service:

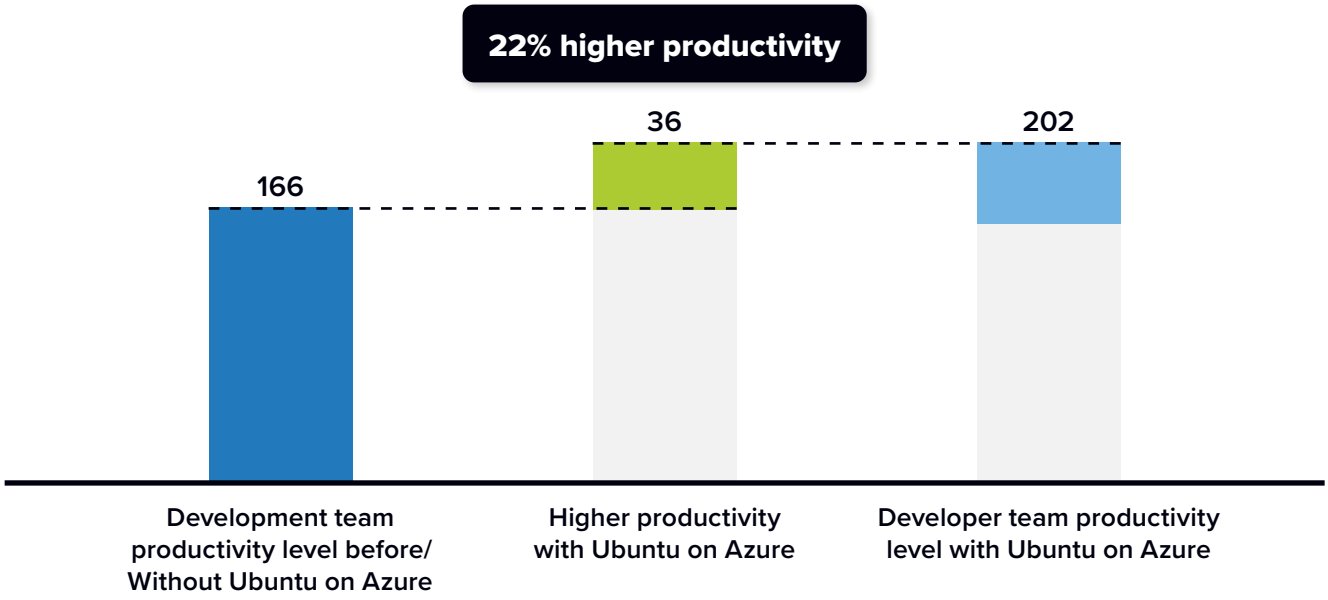
"DevOps and benchmarking have grown with the move to Ubuntu on Azure. People have much better flexibility in doing what they want to do. They don't have to wait for our IT team to get their ducks in a row. It's much more self-service."

Figure 6 shows the significant increase in development teams' productivity on Ubuntu and Azure. On average, study participants reported 22% higher productivity for their developers, representing a significant area of value given the amount of development for data-intensive and other key applications they run on Ubuntu on Azure.

FIGURE 6

Impact on Development Team Productivity

(Equivalent productivity in FTEs)



n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

For an accessible version of the data in this figure, see Figure 6 Supplemental Data in Appendix 3.

Security and Risk Improvements

Study participants have gained more comprehensive security capabilities with Ubuntu on Azure and improved resiliency, which has helped them limit security exposure and operational risk related to security and performance. They reported that their security teams benefited from comprehensive security capabilities and enhanced threat detection with Ubuntu on Azure. The built-in security features of Azure, including Microsoft Defender for Cloud, offer continuous security assessment and actionable recommendations, allowing for proactive identification and mitigation of potential vulnerabilities. This proactive approach to security was a significant advantage, reducing cybersecurity-related risks and improving compliance capabilities. One interviewed customer commented: *"Ubuntu on Azure provides built-in security features such as Microsoft Defender for Cloud, which is a*

continuous security assessment and actionable recommendations. This proactive approach helps us identify vulnerabilities before they can be exploited, which is what we all are looking out for."

Interviewed organizations reported achieving a more stable application environment with Ubuntu on Azure, reducing downtime and improving business continuity. One study participant noted: *"Ubuntu on Azure has led to a more stable environment, and hence, the applications don't go down, and they don't crash as much as they previously used to. Business continuity has improved overall because it's a more stable environment for business operations using the applications hosted on Ubuntu."*

As organizations reduce both the frequency of unplanned outages (63% fewer) and the time required to resolve outages (49% faster MTTR), they limit the negative impact on employee productivity (85% less, 1.2 hours of productive time saved per user per year) and lost revenue (52% less). Please see **Table 5** below for details on improved Ubuntu application availability and resiliency benefits.

TABLE 5

Impact on Unplanned Downtime KPIs

Planned Downtime KPIs	Before/Without Ubuntu on Azure	With Ubuntu on Azure	Difference	Benefit
Hours of productive time lost per user per year	1.5	**0.2**	1.2	85%
Productivity loss per year in FTEs per organization	93.5	**14.4**	79.1	85%
Value of lost productivity per organization per year	$6.55M	**$1.01M**	$5.54M	85%
Value of lost revenue per organization per year	$1.60M	**$0.77M**	$0.83M	52%

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Performance and Business Benefits

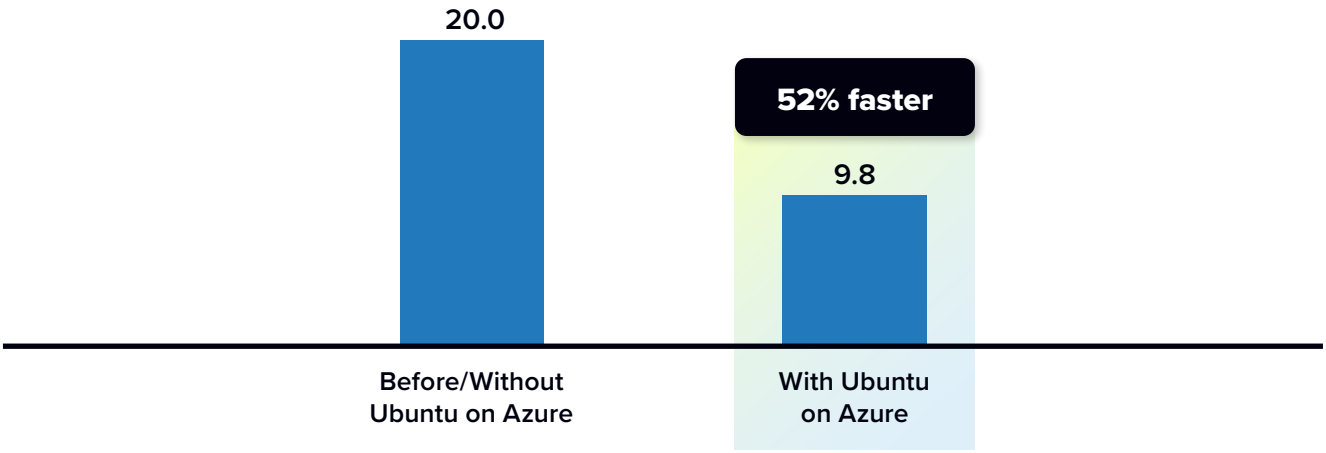
Study participants support various workloads, including data analytics, engineering simulations, and ML, with Ubuntu on Azure. They explained that integrating Ubuntu with Azure's infrastructure allows for more seamless scalability and flexibility, which helps them ensure requisite application performance, adapt quickly to changing business demand, and innovate more effectively.

For interviewed organizations, the ability to move more readily to serve customers is an important benefit of Ubuntu on Azure. One study participant noted: *"Deployments are faster with Ubuntu on Azure, and business turnaround is faster. We are faster to market for new products, and we can launch new products faster."* These gains in agility and time to market have helped study participants scale faster to meet business needs, more than halving the time required to scale on average (52% faster) with Ubuntu on Azure (see **Figure 7**).

FIGURE 7

Impact on Time to Scale Business Opportunities

(Number of weeks)



n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Interviewed organizations consistently rated their ability to run important applications and use new technologies, including GenAI, with Ubuntu on Azure as an important competitive differentiator. They cited specific customer-facing services they can now provide, driving revenue gains and improved innovation ability.

Organizations provided specific examples of revenue-generating services and the value of driving innovation across their business operations with Ubuntu on Azure:

Platform for GenAI-driven services and activities:

"We use GenAI with Ubuntu on Azure for real-time fraud detection and customer security. Our AI-driven bots and virtual assistants handle 24 x 7 customer inquiries, improving response times and reducing costs."

Improved ability to leverage and drive AI adoption:

"Using AI with Ubuntu on Azure allows us to refocus our IT team on better areas. Previously, our on-premises setup limited us and made infrastructure management difficult."

Increased flexibility for experimenting with and using new technologies:

"With Ubuntu on Azure, we've unlocked AI adoption. We can scale innovations and experiment with technologies like GenAI, ML, and big data analytics without infrastructure constraints."

As shown in **Table 6**, using Ubuntu on Azure has already enabled study participants to unlock significant business opportunities, resulting in meaningful revenue gains. On average, they reported revenue gains of $30.63 million per year per organization ($8.73 million per 100 Azure VMs), reflecting the sizable business impact of using Ubuntu on Azure.

TABLE 6

Business Productivity Benefits, Higher Revenue

	Per Organization	Per 100 Ubuntu on Azure VMs
Higher revenue per year	$30.63M	$8.73M
Assumed operating margin	15%	15%
Higher net revenue per year	$4.59M	$1.31M

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

ROI Summary

Table 7 presents IDC's analysis of the benefits and costs for organizations using Azure to run Canonical Ubuntu workloads. Interviewed organizations reported significant financial benefits from using Ubuntu on Azure, driving an average three-year ROI of 306% with a payback period of 11 months, highlighting a fast return on their investment. Over three years, the discounted benefits amounted to $31.02 million per organization ($8.85 million per 100 Azure VMs), compared to a discounted investment of $7.64 million per organization ($2.18 million per 100 Azure VMs).

TABLE 7

Three-Year ROI Analysis

	Per Organization	Per 100 Ubuntu on Azure VMs
Benefit (discounted)	$31.02M	$8.85M
Investment (discounted)	$7.64M	$2.18M
NPV	$23.38M	$6.67M
ROI (NPV/investment)	**306%**	**306%**
Payback	**11 months**	**11 months**
Discount rate	12%	12%

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Challenges/Opportunities

The basic premise behind deploying Ubuntu on Azure is to combine the strengths of Ubuntu, a widely used and versatile Linux distribution, with the Azure platform's robust, scalable, and secure infrastructure. This integration allows organizations to leverage Ubuntu's flexibility and performance while benefiting from Azure's advanced cloud services.

Companies migrating to the cloud seek the advantages of additional resources that are difficult to implement on premises, such as GPUs for AI workloads. As the demand for AI-based applications grows, particularly with the shift from experimentation to production in 2025, vendors must build up their resources to support these workloads. This includes ensuring that their infrastructure can handle the increased demand and provide the necessary tools for developers to innovate and scale their applications effectively.

Differentiation in a multicloud environment is a critical challenge for organizations. Cloud providers must find ways to stand out as infrastructure becomes more commoditized and applications more portable. They can achieve this by offering unique innovations, such as making GPUs and AI readily available, and simplifying the transition to cloud-based solutions such as Ubuntu.

Additionally, vendors should cater to the growing demand for hybrid cloud solutions, where customers must maintain some data on premises due to regulatory or security concerns. By providing robust hybrid solutions, vendors can attract and retain customers requiring a mix of cloud and on-premises capabilities, differentiating themselves from competitors.

Conclusion

This IDC research highlights the substantial benefits of migrating Ubuntu workloads to Microsoft Azure. Organizations reported a significant 306% three-year ROI and a 11-month payback period, demonstrating the financial advantages of this transition.

The integration of Ubuntu with Azure's advanced cloud infrastructure provided organizations with improved scalability, flexibility, and performance. This combination enabled them to respond swiftly to business opportunities, reduce security-related risks, and leverage advanced technologies such as AI and ML. The collaboration between Microsoft and Canonical ensured high-quality support and optimized performance, making Ubuntu on Azure a compelling choice for enterprises seeking to enhance their IT operations and drive innovation. The study participants highlighted the ease of migration and deployment,

which allowed them to lift and shift applications to Azure without extensive rewrites, enabling organizations to realize Azure's benefits more quickly.

Ubuntu on Azure has proven to be a valuable platform for organizations looking to optimize their IT infrastructure and drive business growth. The significant cost savings, efficiency gains, and improved performance underscore the strategic value of adopting Ubuntu on Azure for modern enterprises.

Appendix 1: Methodology

IDC utilized its standard Business Value/ROI methodology for this project. This methodology gathers data from organizations running Ubuntu workloads on Azure.

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

1. **Gathered quantitative benefit information during the interviews using a before-and-after assessment of the impact of using Ubuntu on Azure.** In this study, the benefits included infrastructure cost savings, IT staff efficiencies, development productivity gains, user productivity gains, and higher net revenue.
2. **Created a complete investment (three-year total cost analysis) profile based on the interviews.** Investments go beyond the initial and annual costs of using Ubuntu on Azure and can include additional migrations, planning, consulting, and staff or user training costs.
3. **Calculated the ROI and payback period.** IDC conducted a depreciated cash flow analysis of the benefits and investments for the organizations' use of Ubuntu on Azure over a three-year period. ROI is the ratio of the NPV and the discounted investment. The payback period is when cumulative benefits equal the initial investment.

IDC bases the payback period and ROI calculations on several assumptions:

- IDC multiplied time values by burdened salary (salary + 28% for benefits and overhead) to quantify efficiency and manager productivity savings. For this analysis, IDC has used its standard 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 employees work 1,880 hours per year (47 weeks x 40 hours).
- The net present value of the three-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 the assumed cost of money and 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 dollar figures in this white paper are in $ USD.

Appendix 2: Quantified Benefits of Ubuntu Workloads on Microsoft Azure

Table 8 provides a more granular look at the areas of value that study participants have achieved using Azure to run Ubuntu workloads. IDC calculates that they will realize average annual benefits worth $13.36 million per organization ($3.81 million per 100 Azure VMs).

TABLE 8

Annual Quantified Financial Benefits

Category of Value	Average Quantitative Benefit	15% Margin Assumption Applied	Calculated Average Annual Value*
IT infrastructure cost savings	29% lower cost of equivalent infrastructure, saving $581,000 per year	No	$450,800
IT licensing cost savings	$435,700 savings per year, database and infrastructure licensing	No	$338,000
IT infrastructure team efficiencies	37% efficiency, 16.8 FTEs, $100,000 salary	No	$1.30M
IT security team efficiencies	40% efficiency, 6.0 FTEs, $100,000 salary	No	$468,800
Application development team productivity gains	22% productivity gain, 22 FTEs, $100,000 salary	No	$2.80M
Productivity gains, reduced unplanned downtime	85% less productivity lost, 79 FTEs, $70,000 salary	No	$4.29M
Revenue gains, reduced unplanned downtime	$827,500 revenue loss avoided	Yes	$96,300

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Category of Value	Average Quantitative Benefit	15% Margin Assumption Applied	Calculated Average Annual Value*
Compliance team productivity gains	21% productivity gain, 0.9 FTEs, $70,000 salary	No	$49,000
Revenue gains, business enablement	$30.63M higher revenue per year	Yes	$3.56M
Total annual benefits	**$13.36 million per organization**		

* includes 8.1 months for deployment, year 1

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Appendix 3: Supplemental Data

This appendix provides an accessible version of the data for the complex figures in this document. Click "Return to original figure" below each table to get back to the original data figure.

FIGURE 1 SUPPLEMENTAL DATA

Average Annual Benefits per 100 Azure VMs

	$ per 100 Azure VMs
IT Staff	$1,302,400
Risk mitigation benefits	$1,266,300
Business productivity benefit	$1,016,300
IT infrastructure cost reductions	$225,000
Total	**$3.81M**

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Return to original figure

FIGURE 4 SUPPLEMENTAL DATA

Impact on IT Staff Time, Keeping Lights On Versus Innovation

	Percent of Time, Keeping the Lights On	Percent of Time Proactive/Strategic
Before/Without Ubuntu on Azure	57%	43%
With Ubuntu on Azure	33%	67%
Difference	**41% less time**	**54% more time**

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

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Appendix 3: Supplemental Data (continued)

FIGURE 5 SUPPLEMENTAL DATA

Three-Year Cost of Operations per Azure VM

	Before/Without Ubuntu on Azure	With Ubuntu on Azure
Cost of IT infrastructure staff time	$12,800	$8,000
Cost of IT infrastructure	$5,800	$4,100
Total	**$18,600**	**$12,100 (35% lower cost)**

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

Return to original figure

FIGURE 6 SUPPLEMENTAL DATA

Impact on Development Team Productivity

	Development Team Productivity Level Before/ Without Ubuntu on Azure	Higher Productivity with Ubuntu on Azure	Developer Team Productivity Level with Ubuntu on Azure
Equivalent productivity, FTEs per organization	166	36	202
Difference		**22% higher productivity**	

n = 7; Source: IDC Business Value In-Depth Interviews, November 2024

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About the IDC Analysts

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Research Manager, Open GenAI, LLMs, and the Evolving Open Source Ecosystem, IDC

Michele Rosen is research manager for IDC's Open GenAI, LLMs, and the Evolving Open Source Ecosystem practice. Dr. Rosen's research focuses on the open source ecosystem and the emerging role of open source communities in delivering and governing GenAI software and large language models (LLMs). Open source tools such as Jupyter, PyTorch, and TensorFlow have been integral to the development of generative AI, and open LLMs are beginning to play a significant role in fostering innovation and democratizing access to powerful natural language processing tools.

More about Michele Rosen

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Adam Reeves leads IDC's worldwide research on PaaS for Developers of Modern and Edge Applications. His analysis leverages demand-side research with market modeling expertise to identify the evolving needs of PaaS buyers as they implement the products and services needed to accelerate application development and deployment in the cloud, across multiple clouds, and at the edge. His focus on PaaS and edge applications is oriented around the foundational cloud services, supporting components/services used by developers, evolving public multicloud and cross-cloud PaaS use cases, and the growing use of cloud services at edge locations.

More about Adam Reeves

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Matthew is responsible for carrying out custom business value research engagements and consulting projects for clients in a number of technology areas with a focus on determining the return on investment of their use of enterprise technologies. Matthew's research often analyzes how organizations are leveraging investment in digital technology solutions and initiatives to create value through efficiencies and business enablement.

More about Matthew Marden

Message from the Sponsor

Migration to Azure provides organizations with an optimized platform to fully embrace AI, while maximizing ROI and giving the necessary performance and resilience. All of this is delivered with comprehensive code to cloud security.

Get started with Ubuntu on Azure

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