Business Value of Cloud Modernization

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Prepared by

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Commissioned by

aws

EXECUTIVE SUMMARY

Organizations are moving beyond simply migrating to the cloud. True cloud modernization involves adopting advanced services and architectural patterns that drive enhanced operational capabilities, improved agility, and establish a stronger competitive position. Our research examines six primary cloud modernization pathways that unlock deeper value: (1) adopting Containers, (2) building Cloud Native applications, (3) modernizing with Managed Databases, (4) leveraging Managed Analytics, (5) implementing Modern DevOps, and (6) utilizing Open Source platforms.

This study quantifies the business value created by utilizing each of these pathways. In summary, surveyed organizations report:

- 42% faster IT resource provisioning after adopting Containers
- 86% increase in weekly feature deployment after adopting Cloud Native
- 130% more DBs managed per admin after adopting Managed Databases
- 17% faster time to insights after adopting Managed Analytics
- 83% increase in DevOps automation after adopting Modern DevOps
- 25% faster time to resolve downtime incidents after adopting Open Source

This paper explores the business impact of each pathway, with particular attention to notable improvements in associated key performance indicators.

Basic to Modern Cloud Benefits

42% faster **IT resource provisioning**

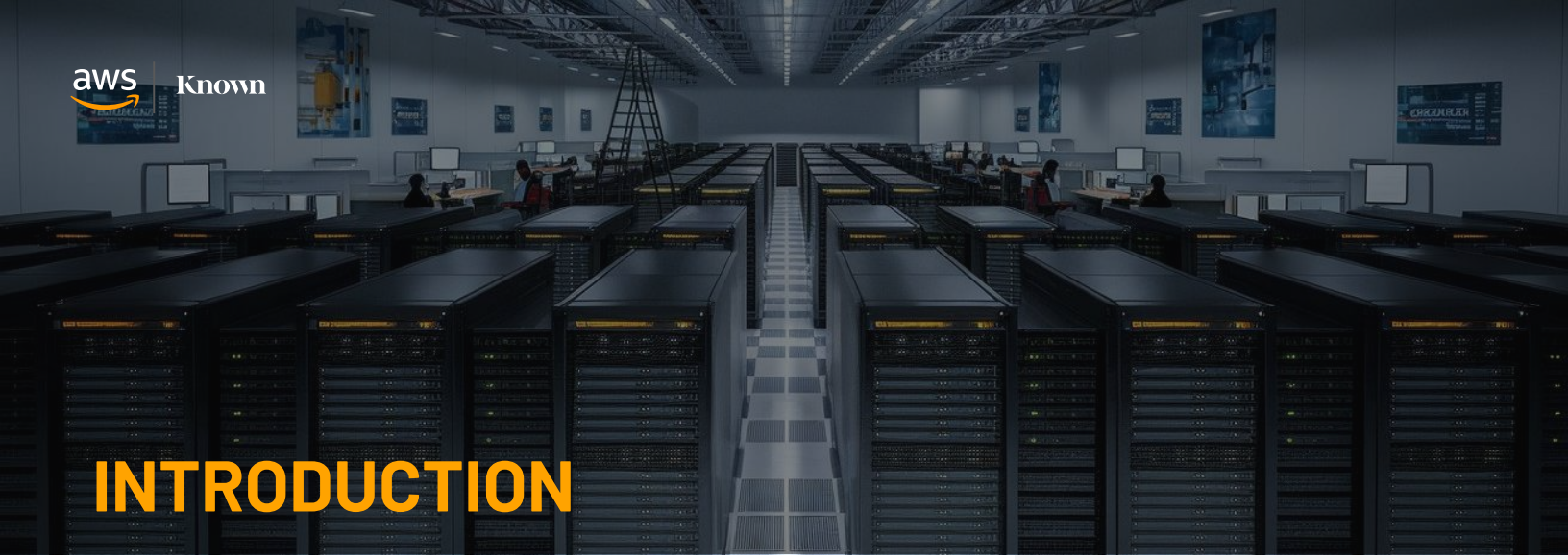
86% more **weekly feature deployment**

130% more **DBs managed per admin**

17% faster **time to insights**

83% increase in **DevOps automation**

25% faster **time to resolve downtime incidents**



INTRODUCTION

Cloud modernization offers organizations significant opportunities to enhance four primary areas of business performance: Staff Productivity, Operational Resilience, Business Agility, and Cost Savings. These pillars, central to this research, reflect key operational and strategic priorities driving modernization efforts today. While even partial modernization can yield tangible benefits, an ever-evolving and competitive cloud market demands a more comprehensive approach to unlock its full potential.

True modernization goes beyond incremental cloud adoption. It requires a strategic commitment to embracing advanced architectures and managed services across the entire organization. By adopting a holistic approach, organizations can unlock new levels of scalability, efficiency, and innovation, transforming their business from the core.

This white paper serves as a guide for decision-makers navigating cloud modernization pathways, providing a clear roadmap for impacting business performance through the combination of multiple modernization pathways. It underscores the transformative potential of adopting individual modernization pathways, but more significantly the cumulative benefits of high modernization.

Our data-driven insights aim to support strategic planning and demonstrate why a comprehensive approach is worth the investment to unlock the full value of cloud modernization. While the journey requires both time and resources, the long-term benefits far outweigh the initial investment.

Cloud Modernization Pathways

- Containers
- Cloud Native
- Managed Databases
- Managed Analytics
- Modern DevOps
- Open Source

METHODOLOGY & FRAMEWORKS

Research for this white paper was conducted by AWS and Known in January 2025. We surveyed 504 organizations across North America, Latin America, Asia-Pacific, and Europe, represented by IT and business decision-makers. Organizations surveyed have annual revenues of $250M+, public cloud spending of $500K+, and 500+ employees. Insights reflect organizations actively leveraging cloud technologies and have already achieved some level of modernization. Adoption rates and outcomes discussed in this paper may reflect more advanced cloud journeys than those of the wider landscape of organizations.

MODERNIZATION PATHWAYS

Containers: Adoption of Containerized applications and Container orchestration services such as Kubernetes, OpenShift, or a cloud-managed service.

Cloud Native: Embracing architectures such as microservices, event-based architecture, API driven design, and serverless computing.

Managed Databases: Transitioning to fully Managed Database services to shift operational burden away from internal teams.

Managed Analytics: Leveraging managed services for ETL, data lake management, BI, and reporting from cloud providers or third-party service running on cloud.

Modern DevOps: Implementing automated CI/CD pipelines and test-driven development practices.

Open Source: Shifting from commercial licensed offerings to Open Source offerings to reduce licensing costs e.g., Windows to Linux, MS SQL Server and Oracle to PostgreSQL.

QUANTIFYING BUSINESS IMPACT

We utilized the Cloud Value Framework (CVF) that assesses value across four pillars: Cost Savings, Staff Productivity, Operational Resilience, and Business Agility. This study measured the change in **26 unique Key Performance Indicators (KPIs)** as organizations move from basic to modern cloud services.

To additionally identify correlations between modernization and superior business outcomes, we compared pathway adoption rates between top and bottom KPI performers. We also examined the value realized by **Highly Modernized Organizations** that have adopted all six modernization pathways.

Surveyed

504

Organizations

Regional Breakdown of Organizations Surveyed

175	North America
126	Asia-Pacific
125	Europe
78	Latin America

BUSINESS IMPACT SUMMARY

Our findings reveal correlations between modernization pathways and KPIs. We categorized KPIs under the CVF pillars to provide a structured view of how cloud modernization impacts distinct areas of business value (See Figure 1 on next page).

Containers drive increased business agility, operational resilience, and cost savings.

6 business agility KPIs improved by up to 29%, 5 operational resilience KPIs improved by 16%, and 3 cost savings KPIs improved by up to 12%.

Cloud Native drives increased staff productivity.
6 staff productivity KPIs improved by up to 102%.

Managed Databases drives increased business agility.
6 business agility KPIs improved by up to 25%.

Managed Analytics drives improved cost savings.
3 managed analytics KPIs improved by up to 15%.

Modern DevOps drives increased staff productivity.
7 staff productivity KPIs improved by up to 367%.

Open Source drives increased staff productivity and cost savings.
4 staff productivity KPIs improved by up to 104% and 2 cost savings KPIs improved by up to 12%.

Highly Modernized organizations realize improvement across all CVF Pillars, with notably **higher increases in staff productivity and business agility**.

6 staff productivity KPIs improved by up to 117% and 6 business agility KPIs improved by up to 63%.

In the following sections, we will dive deeper into these pathways and specific KPI improvements leading to this summary.

Cloud Value Framework (CVF)

Staff Productivity

Business Agility

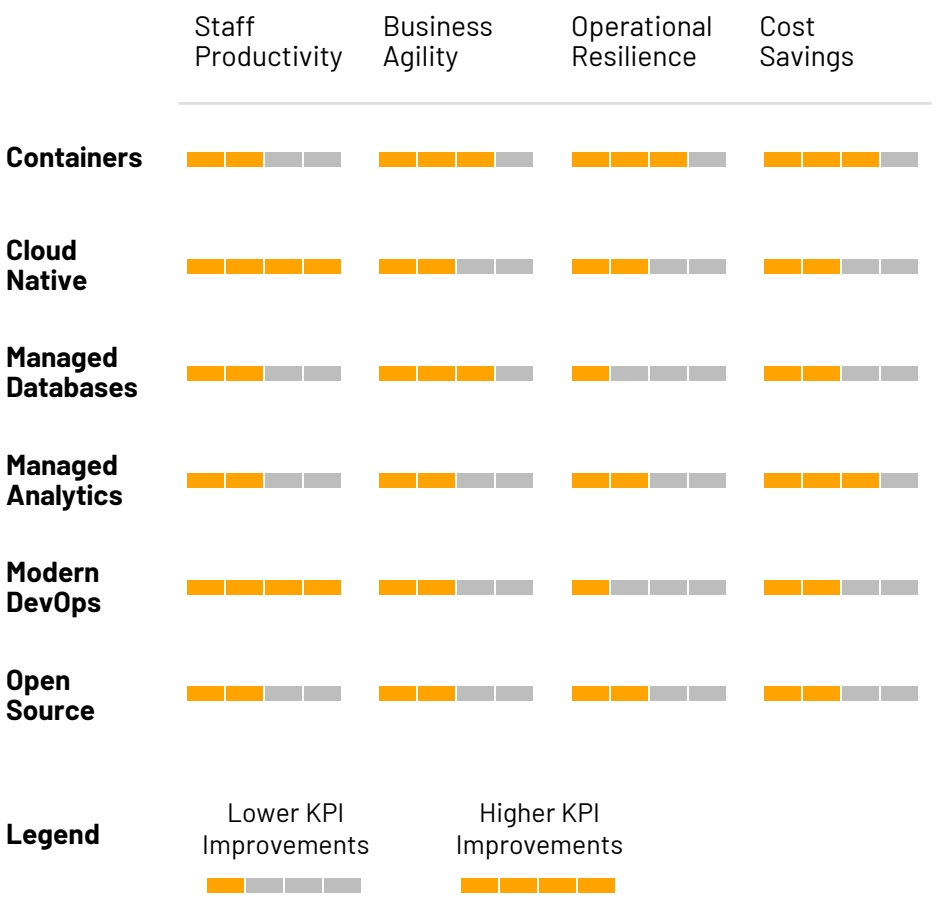
Operational Resilience

Cost Savings

BUSINESS IMPACT SUMMARY (CONTINUED)

Figure 1. illustrates the relationship between cloud modernization pathways and business value, measured through improvements in KPIs across the CVF pillars. The higher the number of KPI improvements for a given pathway, the stronger the correlation between adopting that pathway and achieving measurable business gains in areas of Staff Productivity, Business Agility, Operational Resilience, and Cost Savings.

Figure 1. Business Value Impact by Modernization Pathway



CONTAINERS BUSINESS VALUE ANALYSIS

Containers offer a standardized way to package an application's code, configurations, and dependencies into a single, portable unit, enabling organizations to deploy applications quickly and consistently across diverse environments. Modern Container services, such as Amazon Elastic Container Service (ECS) and AWS Elastic Kubernetes Service (EKS), simplify management and orchestration, allowing organizations to focus on building applications rather than managing infrastructure.

Containers enable organizations to create, configure, and manage workloads more efficiently. This leads to greater agility, improved portability of applications, and operational resilience at a lower cost. Containers require fewer system resources and enable quick, reliable deployments, regardless of the environment, making them an essential tool for enhancing administrative effectiveness and scalability.

STAFF PRODUCTIVITY

- Organizations leveraging Containerization report a **42% reduction in time to provision resources**. This streamlined process enables faster deployment of new applications. Additionally, top performers for this KPI are **15% more likely to adopt Containers**, as their ability to standardize workloads and enable rapid scaling directly contributes to faster and more reliable resource provisioning.
- Packaging everything into more secure and reliable single objects streamlines the process of deploying new applications. Organizations that have adopted Containers achieve a **27% increase in weekly (or faster) feature deployments**.

BUSINESS AGILITY

- Development efficiency is further enhanced through Containerization, with organizations that adopted this pathway achieving a **29% reduction in time to commit code changes**. Top performers for this KPI are **12% more likely to adopt Containers.** Standardizing workflows and automating infrastructure management directly contributes to quicker development cycles and improved software delivery efficiency.

74%

of surveyed organizations adopted Containers*

Impact Summary

Staff Productivity

Business Agility

Operational Resilience

Cost Savings

Benefits of Moving from Basic Cloud to Containers

42% faster **IT resource provisioning**

27% more weekly **feature deployments**

29% reduction in **lead time for changes**

*Note: see page 4 for details on study participants & sample characteristics.

- These organizations spend **25% less time managing and coordinating multiple cloud environments**. Utilizing Containers facilitates smoother transitions between development, testing, and production environments, ultimately leading to more reliable and consistent application deployments.
- Organizations leveraging Containers report **an 18% reduction in time to insight**, enhancing their data-driven decision-making capabilities.
- Containerization supports **increased DevOps automation, with organizations experiencing a 14% improvement** in this area. Greater automation not only enhances collaboration between development and operations teams but also contributes to more efficient and reliable software delivery pipelines.

OPERATIONAL RESILIENCE

- Organizations that use Containers achieved a **16% reduction in time to detect security incidents**. Container isolation and improved monitoring capabilities enable faster identification and response to potential security breaches, enhancing overall system resilience.
- Organizations with Containerized applications also report a **16% reduction in production failures for new features or services**. The consistency and portability of Containers, combined with improved testing and deployment practices, contribute to more stable and reliable releases.

COST SAVINGS

- Organizations adopting Containers report a **12% reduction in IT infrastructure spend**. The efficient resource utilization and improved scalability of containerized applications contribute to significant cost savings in hardware and operational expenses.
- Adopting Containers leads to an **11% improvement in compute utilization**. Better orchestration and integration with a wide range of solutions enable higher efficiency in resource management.

Adopting Containers simplifies configuration, orchestration, and deployment, allowing staff to concentrate on strategic initiatives. Containers also enable organizations to accelerate the deployment of new applications and provide smoother transitions between environments. Organizations benefit from stronger operational resilience due to container isolation and improved monitoring. This drives efficiency gains through better compute utilization and can reduce IT infrastructure spend, ensuring efficient response to fluctuating demands.

Benefits of Moving from Basic Cloud to Containers

25% less time **managing multiple environments**

18% faster **time to insight**

14% increase **in DevOps automation**

16% reduction in **time to detect security incidents**

16% less **production failures**

12% reduction in **IT infrastructure spend**

11% increased **compute utilization**

CLOUD NATIVE BUSINESS VALUE ANALYSIS

Cloud Native services enable organizations to build and run applications using fully managed, scalable infrastructure. These services, such as AWS Lambda, Amazon Elastic Container Service (ECS), and Amazon Elastic Kubernetes Service (EKS), allow organizations to focus on application development rather than infrastructure management. Key features include automatic scaling and pay-per-use billing, exemplified by services like AWS Fargate and Amazon API Gateway.

Adopting Cloud Native architectures helps organizations improve productivity and reduce operational costs. It enables faster feature deployment, more frequent releases, and higher levels of innovation. Cloud Native approaches enhance system reliability through fault tolerance and self-healing capabilities, minimizing downtime and improving user experience.

STAFF PRODUCTIVITY

- Organizations using Cloud Native services report a **102% increase in the number of DBs managed per administrator**, dramatically improving operational efficiency. Top performers for this KPI are **30% more likely to have adopted Cloud Native.** The ability to abstract away the complexities of infrastructure allows database administrators to manage a larger number of databases with greater ease and reduced overhead.
- These organizations also achieve an **86% increase in weekly (or faster) feature deployment** enabled by more agile development processes. Top performers for this KPI are **12% more likely to have adopted Cloud Native**, as its emphasis on microservices and automated infrastructure provisioning contributes to faster development cycles and more agile software delivery.

BUSINESS AGILITY

- Organizations using Cloud Native services report a **31% increase in DevOps automation**. By leveraging serverless computing and microservices architectures, teams can more effectively automate infrastructure management, freeing them to focus on building and deploying innovative applications with greater speed and efficiency.
- Additionally, organizations experience a **21% reduction in time spent coordinating across multiple environments**, enhancing collaboration and reducing complexity.

*Note: see page 4 for details on study participants & sample characteristics.

74%

of surveyed organizations adopted Cloud Native*

Impact Summary

Staff Productivity

Business Agility

Operational Resilience

Cost Savings

Benefits of Moving from Basic Cloud to Cloud Native

102% more **DBs managed per admin**

86% more weekly **feature deployments**

31% increase in **DevOps automation**

21% less time **managing multiple environments**

- These organizations experience an **11% increase in apps developed as Cloud Native**, driven by streamlined development processes that enable faster innovation and greater scalability.

OPERATIONAL RESILIENCE

- The adoption of Cloud Native technologies contributes to an **18% reduction in security incidents**, enhancing overall system security and minimizing potential vulnerabilities. Top performers for this KPI are **31% more likely to have adopted Cloud Native**. Leveraging microservices and infrastructure-as-code creates a more secure and manageable environment, reducing the attack surface and improving overall system security posture.

COST SAVINGS

- Organizations unlock a **14% improvement in compute utilization**, optimizing resource allocation and reducing unnecessary expenses.
- The adoption of Cloud Native services also leads to the reduction of **VMs and DBs reliant on proprietary licenses by 7% and 8% respectively**, contributing to cost savings.

Cloud Native approaches enable organizations to build more scalable, resilient, and efficient applications more quickly. By adopting these technologies, businesses unlock improved operational efficiency and accelerate innovation through streamlined processes. Ultimately, organizations achieve substantial cost savings by optimizing resource allocation, reducing potential vulnerabilities, and decreasing reliance on proprietary licenses.

Benefits of Moving from Basic Cloud to Serverless

11% more **apps developed as Cloud Native**

18% decrease in **security incidents**

14% increase in **computer utilization**

7% fewer **VMs reliant on propriety licenses**

8% fewer **DBs reliant on proprietary licenses**

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MANAGED DATABASES BUSINESS VALUE ANALYSIS

Managed Databases handle operational complexities like setup, patching, and backups. Services like Amazon Aurora and Amazon Redshift enable organizations to build scalable applications while offloading administrative tasks to the cloud provider. These solutions support diverse data models, enabling businesses to prioritize innovation over infrastructure management.

As data volumes grow, managing infrastructure and ensuring resilience becomes increasingly resource intensive. Managed Databases automate routine tasks, providing scalability, security, and performance optimization. This allows organizations to redirect resources toward transformative initiatives and accelerate innovation.

STAFF PRODUCTIVITY

- Organizations utilizing Managed Databases manage **130% more DBs per administrator**, significantly improving operational efficiency. Top performers for this KPI are **24% more likely to adopt Managed Databases,** as their ability to offload operational overhead allows administrators to handle a greater number of databases.
- These organizations achieve a **41% decrease in time required to provision resources** allowing teams to focus more on strategic initiatives rather than routine management tasks.

BUSINESS AGILITY

- Adopting Managed Databases contributes to a **25% reduction in time to insight**, allowing organizations to make data-driven decisions more rapidly.
- Development cycles accelerate, with an **11% reduction in time to commit code changes**, enabling quicker feature releases and updates.

80%

of surveyed organizations adopted Managed Databases*

Impact Summary

Staff Productivity

Business Agility

Operational Resilience

Cost Savings

Benefits of Moving from Basic Cloud to Managed Databases

130% more **DBs managed per admin**

41% faster **IT resource provisioning**

25% fast **time to insight**

11% faster **lead time for changes**

*Note: see page 4 for details on study participants & sample characteristics.

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OPERATIONAL RESILIENCE

- Organizations leveraging Managed Databases see an **18% reduction in production failures for new features or services**, enhancing overall system stability and efficiency. Top performers for this KPI are **12% more likely to adopt Managed Databases**, as their inherent resilience and reliability contribute to a more stable development and deployment environment, leading to fewer production failures.

Adopting Managed Databases streamlines business operations, enabling teams to manage significantly more databases and dedicate more time to strategic projects. Ultimately, this empowers organizations to better handle massive data growth, address performance issues, ensure workload resilience, and maintain compliance with data regulations more effectively - driving faster insights and quicker development cycles.

Benefits of Moving from Basic Cloud to Managed Databases

18% reduction in **production failures**

MANAGED ANALYTICS BUSINESS VALUE ANALYSIS

Managed Analytics services provide automated processes to organize, access, query, and stream data from multiple sources, transforming it into actionable insights. These services support a wide range of analytics use cases, including data warehousing, big data processing, real-time analytics, and operational analytics. Examples include Amazon Lake Formation, Amazon Elastic MapReduce (EMR), and Amazon QuickSight.

Managed Analytics have become essential for faster, more accurate decision-making. However, extracting value from vast amounts of data presents significant challenges, including finding skilled personnel, establishing formal processes, and ensuring data accessibility. Managed Analytics offers a solution by outsourcing these critical functions, allowing organizations to focus on their core competencies.

While Managed Analytics shares some KPI improvements with Managed Databases, it offers distinct advantages. Managed Analytics provides tailored insights into business issues, enabling faster data-driven decision-making and promoting the adoption of modern application architectures without the need for upfront investment in analytics infrastructure. By leveraging these services, organizations can gain a competitive edge through specialized expertise and optimized analytics operations.

STAFF PRODUCTIVITY

- Organizations that adopted Managed Analytics achieve a **52% increase in the number of VMs managed per admin**. Top performers for this KPI are **28% more likely to adopt Managed Analytics**, as its capacity to automate data-related tasks enables staff to efficiently manage a larger number of VMs.
- These organizations also manage **43% more DBs per admin**, allowing teams to handle larger data volumes more effectively. Top performers for this KPI are **30% more likely to adopt Managed Analytics**, as streamlined data access empowers administrators to manage a greater number of databases with increased efficiency.

82%

of surveyed organizations adopted Managed Analytics*

Impact Summary

Staff Productivity

Business Agility

Operational Resilience

Cost Savings

Benefits of Moving from Basic Cloud to Managed Analytics

52% more **VMs managed per admin**

43% more **DBs managed per admin**

*Note: see page 4 for details on study participants & sample characteristics.

- Utilizing Managed Analytics leads to faster deployment of analytics capabilities, with organizations achieving a **40% reduction of time to provision a standard set of resources**. Among top performers for this KPI, **Managed Analytics adoption is 15% more likely**, as streamlined deployment capabilities enable faster access to analytics tools and resources, leading to quicker provisioning times.
- Adopting Managed Analytics contributes to a **12% reduction in time to scale resources**, facilitating more agile responses to changing analytics demands.

BUSINESS AGILITY

- Organizations using Managed Analytics see an **18% increase in DevOps automation**, streamlining analytics workflows and improving collaboration between teams.
- These organizations also report a **17% reduction in time to insight**, allowing for faster data-driven decision making and more responsive business strategies.

OPERATIONAL RESILIENCE

- Organizations adopting Managed Analytics achieve a **16% decrease in time to detect security incidents**, enhancing overall system security and reducing potential vulnerabilities.
- Additionally, these organizations achieve a **16% reduction in production failures for new features or services**, improving the stability and reliability of analytics deployments. Top performers for this KPI are **20% more likely to adopt Managed Analytics**, as its ability to automate data quality checks, contributes to more stable and reliable analytics deployments, resulting in fewer production failures.

COST SAVINGS

- Of all modernization pathways, adopting Managed Analytics is the one pathway that contributes to the **reduction of overprovisioning by 7%**, allowing for an optimization of resource allocation through dynamic scaling and real-time resource monitoring.
- Organizations leveraging Managed Analytics also saw a **15% decrease in IT infrastructure spend**, demonstrating significant cost efficiencies gained through modernization.

Managed Analytics services enable organizations to process and analyze vast amounts of data efficiently, with automated scaling to handle fluctuating workloads, freeing up staff to focus on deriving insights rather than managing data. This shift allows businesses to make data-driven decisions more quickly, streamline operations, and realize substantial cost savings.

Benefits of Moving from Basic Cloud to Managed Analytics

40% faster **IT resource provisioning**

12% reduction in **time to scale resources**

18% increase in **DevOps automation**

17% faster **time to insight**

16% faster **time to detect security incidents**

16% reduction in **production failures**

7% reduction in **overprovisioning**

15% reduction in **IT infrastructure spend**

MODERN DEVOPS BUSINESS VALUE ANALYSIS

Modern DevOps focuses on automating and streamlining software development and deployment processes. It primarily involves two key components: implementing automated Continuous Integration/Continuous Deployment (CI/CD) pipelines and adopting Test-Driven Development (TDD) practices.

Automated CI/CD pipelines enable continuous integration, delivery, and deployment of code changes, allowing for faster and more reliable software releases. TDD is a software development approach where developers write automated tests before writing the actual code. TDD helps ensure code quality, facilitates easier debugging, and promotes a more robust and maintainable codebase.

By combining automated CI/CD pipelines with TDD practices, organizations can achieve faster development cycles, improved code quality, and more reliable software releases. This Modern DevOps approach fosters collaboration between development and operations teams, ultimately leading to more efficient and effective software delivery. It enables businesses to respond quickly to market changes and customer needs, driving innovation and competitiveness in a rapidly evolving digital landscape.

STAFF PRODUCTIVITY

- Organizations leveraging Modern DevOps report a significant **233% increase in the number of DBs managed per administrator**, reflecting substantial gains in operational efficiency through automation. Top performers for this KPI are **73% more likely to adopt Modern DevOps**, as its ability to automate repetitive tasks, improve collaboration, and enable faster deployments empowers administrators to manage a far greater number of databases.
- These organizations also achieve a **367% increase in weekly (or faster) feature deployments**, demonstrating accelerated test and release cycles and increased responsiveness to market demands.

57%

of surveyed organizations adopted Modern DevOps*

Impact Summary

Staff Productivity

Business Agility

Operational Resilience

Cost Savings

Benefits of Moving from Basic Cloud to Modern DevOps

233% more **DBs managed per admin**

367% more **weekly feature deployments**

*Note: see page 4 for details on study participants & sample characteristics.

BUSINESS AGILITY

- Leveraging Modern DevOps contributes to an **83% increase in DevOps automation**, streamlining workflows and reducing manual intervention.
- Organizations **reduce coordination time across environments by 55%**, improving collaboration and reducing bottlenecks across environments.
- Adopting Modern DevOps leads to a **13% increase in the number of applications developed as cloud native**, demonstrating a shift towards more agile and scalable architectures.

OPERATIONAL RESILIENCE

- Organizations adopting Modern DevOps achieve a **22% reduction in the time required to resolve downtime incidents**, improving system stability and minimizing downtime. Top performers for this KPI are **83% more likely to adopt Modern DevOps.** Automating incident response and improving collaboration between development and operations teams, contributes to quicker recovery times.

COST SAVINGS

- Utilizing Modern DevOps allows organizations to unlock a **25% increase in compute utilization**, optimizing resource allocation and reducing unnecessary expenses. Top performers for this KPI are **29% more likely to adopt Modern DevOps**, as its ability to dynamically allocate resources, eliminate wasteful over-provisioning, and improve overall infrastructure efficiency leads to higher compute utilization.
- These organizations also experience an **18% reduction in proprietary licenses for VMs and 13% reduction for DBs**, further contributing to cost savings and promoting open-source alternatives.

Modern DevOps empowers organizations to deliver software faster, more reliably, and more efficiently. By automating key processes and fostering collaboration between development and operations teams across multiple cloud environments, businesses can accelerate innovation, improve operational agility, and realize substantial cost savings while maintaining robust system stability and security. This shift allows organizations to respond more quickly to changing market conditions, deliver superior customer experiences, and gain a competitive edge in today's rapidly evolving digital landscape.

Benefits of Moving from Basic Cloud to Modern DevOps

83% increase in **DevOps automation**

55% less **time managing multiple environments**

13% more **apps developed as Cloud Native**

22% faster **time to resolve downtime incidents**

25% increase in **compute utilization**

18% fewer **VMs reliant on proprietary licenses**

13% fewer **DBs reliant on proprietary licenses**

OPEN SOURCE BUSINESS VALUE ANALYSIS

Adopting Open Source software involves shifting from commercial licenses to open source alternatives, primarily to reduce licensing costs and increase flexibility. This transition includes moves such as migrating from Windows to Linux operating systems or from proprietary database management systems like MS SQL Server and Oracle to Open Source options like PostgreSQL.

Open Source adoption offers several key benefits, including cost-effectiveness and customization capabilities. Users can modify the source code to tailor solutions to specific needs, creating more adaptable systems. Additionally, Open Source projects benefit from large communities of developers and users who contribute to ongoing improvement and provide support.

By leveraging Open Source solutions, organizations can achieve significant cost savings while maintaining or improving system functionality. This approach supports business agility and innovation, allowing resources to be redirected toward strategic initiatives and core competencies.

STAFF PRODUCTIVITY

- Organizations utilizing Open Source software report a **104% increase in the number of DBs managed per administrator**, significantly improving operational efficiency through streamlined management tools. Top performers for this KPI are **52% more likely to adopt Open Source**, as its customizable nature allow for the development of tailored management tools that streamline database operations, empowering administrators to handle a larger number of databases.
- These organizations also achieve a **77% increase in weekly (or faster) feature deployment**, demonstrating rapid development processes, increased responsiveness, and adaptability.
- Adopting Open Source contributes to a **22% decrease in time spent provisioning IT resources**, freeing up staff to focus on more strategic initiatives and higher-value tasks.

57%

of surveyed organizations adopted Open Source*

Impact Summary

Staff Productivity

Business Agility

Operational Resilience

Cost Savings

Benefits of Moving from Basic Cloud to Open Source

104% more **DBs managed per admin**

77% more **weekly feature deployments**

22% faster **IT resource provisioning**

*Note: see page 4 for details on study participants & sample characteristics.

BUSINESS AGILITY

- Organizations that move to Open Source solutions report a **45% increase in DevOps automation**, streamlining workflows and promoting greater community collaboration.
- These organizations also report **a 35% reduction in time spent managing multiple cloud environments**, simplifying multi-cloud deployments and reducing infrastructure complexity.

OPERATIONAL RESILIENCE

- Utilizing Open Source platforms contributes to a **25% reduction in the time required to resolve downtime incidents**, enhancing system stability and minimizing downtime. The collaborative nature of open source allows for quicker identification and resolution of issues. Top performers for this KPI are **140% more likely to adopt Open Source**. Community-driven development and readily available expertise facilitate faster troubleshooting and bug fixes, leading to quicker recovery times and improved system resilience.

COST SAVINGS

- Organizations that leverage Open Source platforms see a **12% increase in compute utilization**. Open source solutions often have lower overhead, leading to more efficient resource usage. Top performers for this KPI are **47% more likely to adopt Open Source**, as its modular architecture result in more lightweight and efficient software, allowing for better compute utilization.
- These organizations achieve an **11% reduction in proprietary licenses for VMs and 10% reduction for DBs**, lowering software costs and promoting greater flexibility in infrastructure choices, further contributing to cost savings and enabling a shift towards more cost-effective Open Source database solutions.

By embracing Open Source technologies, organizations can foster innovation, improve workflow efficiency, and reduce costs. The flexibility, transparency, and community-driven nature of Open Source solutions enable businesses to build more agile, resilient, and cost-effective IT infrastructures, empowering them to compete more effectively in today's rapidly evolving digital landscape.

The reduction in vendor lock-in and the increased control over their technology stack provide organizations with a strategic advantage, allowing them to adapt more quickly to changing market conditions and customer needs, as well as hire and retain skilled talent given the adaptability of Open Source systems.

Benefits of Moving from Basic Cloud to Open Source

45% increase in **DevOps automation**

35% less **time managing multiple environments**

25% faster **time to resolve downtime incidents**

12% increase in **compute utilization**

11% fewer **VMs reliant on proprietary licenses**

10% fewer **DBs reliant on proprietary licenses**

HIGH MODERNIZATION BUSINESS VALUE ANALYSIS

Previously, we discussed how adopting specific modern cloud services can promote different business outcomes. In this section, we will focus on the cumulative impact of adopting all six pathways — Containers, Cloud Native, Managed Databases, Managed Analytics, Modern DevOps, and Open Source. Organizations that have adopted all six pathways are defined as 'Highly Modernized'.

While adopting all six modernization pathways is ideal, we recognize that such comprehensive transformation requires substantial time and resource investment, which may not be immediately feasible for every organization. In this study, only 31% of cloud-adopting organizations achieved the status of "highly modernized" by implementing all six pathways.

Organizations that achieve full cloud modernization unlocked business value across all CVF pillars, with notable improvements across the KPIs highlighted in the sections below.

STAFF PRODUCTIVITY

- Highly Modernized organizations manage **117% more DBs per admin** than partially modernized organizations - handling higher workloads without increasing headcount.
- These organizations demonstrate superior agility in feature deployment, releasing **48% more features and services at a weekly or faster cadence,** demonstrating greater agility than partially modernized organizations.
- Complete modernization yields a **26% reduction in time to provision a standard set of resources**, significantly enhancing resource allocation.

BUSINESS AGILITY

- Highly Modernized organizations **automate 48% more of their DevOps processes** compared to partially modernized organizations, creating substantial efficiency gains and accelerating development cycles.

31%

of surveyed enterprises are Highly Modernized*

Impact Summary

Staff Productivity

Business Agility

Operational Resilience

Cost Savings

Benefits of Transforming from Partial to Highly Modernized Organization

117% more **DBs managed per admin**

48% more **weekly feature deployments**

26% faster **IT resource provisioning**

48% more **DevOps automated**

*Note: see page 4 for details on study participants & sample characteristics.

- These organizations also experience a **reduction in time spent managing and coordinating multiple environments by 63%**, signaling improved workflow integration and reduced operational complexity.

OPERATIONAL RESILIENCE

- Highly Modernized organizations achieve a **17% reduction in change failure rates**, demonstrating enhanced stability and increased trust in their systems and processes.
- These organizations also benefit from an **18% reduction in time to resolve downtime incidents**, minimizing business disruptions and improving overall system resilience.

COST SAVINGS

- Complete modernization also drives a **14% increase in compute utilization**, optimizing resource allocation and reducing unnecessary expenses.
- Highly Modernized organizations also show less reliance on proprietary licenses, with **14% fewer virtual machines and 12% fewer databases using proprietary licenses**, indicating greater flexibility and cost savings.

Benefits of Transforming from Partial to Highly Modernized Organization

63% less time **managing multiple environments**

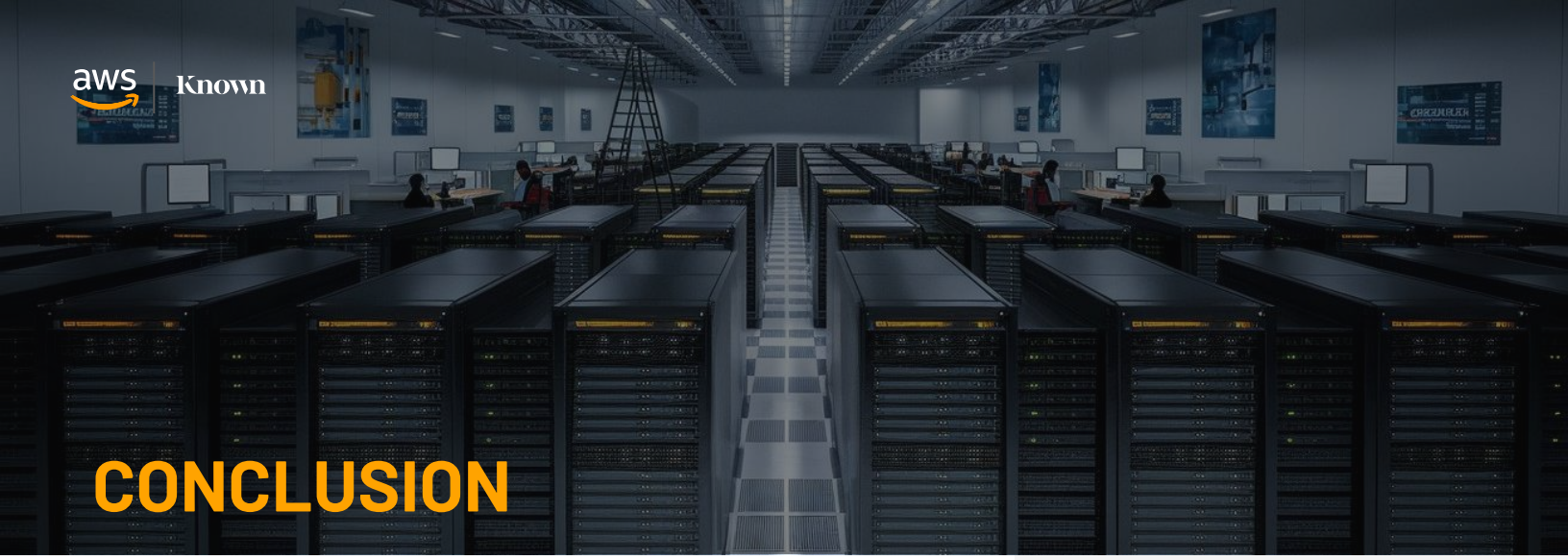
17% reduction in **production failure rates**

18% faster **time to resolve downtime incidents**

14% increase in **compute utilization**

14% fewer **VMs reliant on proprietary licenses**

12% fewer **DBs reliant on proprietary licenses**



CONCLUSION

Making well-informed decisions on how to approach cloud modernization is challenging, especially given the different modernization pathways. This study offers a foundational understanding of the distinct advantages offered by each of the six modernization pathways, as well as the cumulative impact of high modernization.

IN SUMMARY

Containers drive business agility, operational resilience, and cost savings by enabling the creation of more portable, modular, and flexible applications.

Cloud Native drives staff productivity through modern architectures and streamlined development processes.

Managed Databases drives business agility by automating administrative tasks, simplifying data management, and empowering teams to focus on strategic initiatives.

Managed Analytics drives cost savings through unlocking insights at faster rates, allowing organizations to make strong data-driven decisions.

Modern DevOps drives staff productivity through streamlining workflows, accelerating deployment cycles, and fostering collaboration across teams.

Open Source drives staff productivity and cost savings through fostering innovation, collaboration, and flexibility, enabling organizations to build more agile, resilient, and cost-effective IT infrastructures.

Organizations that utilize all six modernization pathways achieve greater benefits across all value drivers.

This synergy arises because each pathway complements and amplifies the others. For example, Containers enhance the portability and scalability of Cloud Native applications, while Modern DevOps practices automate and accelerate the deployment of both.

This holistic approach eliminates silos, streamlines workflows, and creates a more agile, resilient, and efficient environment that delivers compounded business value across all areas.

ABOUT KNOWN

Known is a modern marketing company engineered for the unprecedented challenges and opportunities facing marketers today. Known pairs PhD data scientists with award-winning creatives, expert research teams, and strategists. Known is anchored by two decades of groundbreaking market research and data science capabilities, uniquely empowering our marketing strategy and acclaimed creative groups, who produce some of the most innovative, cutting-edge creative work in culture.

The result? Marketing that is predisposed to succeed and be persistently optimized, directly impacting clients' bottom lines. Our clients span the leading brands in finance, technology, media, CPG, real estate and many other categories. Known has over 200 employees in six US cities including Seattle, San Francisco, Los Angeles, Austin, Boston and New York. Our teams have won multiple Emmys, Clios, Effies, Cannes Lions Awards, ProMax Agency of the Year, and Ad Age Data & Insights Agency of the Year three times in a row (2023, 2024, and 2025).

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GLOSSARY

Term	Definition
Public Cloud	Cloud computing where scalable and elastic IT-enabled capabilities are provided as a service to external customers using Internet technologies.
Private Cloud	Cloud computing that is used by only one organization, or that ensures that an organization is completely isolated from others.
IaaS	Infrastructure as a Service is a form of public cloud computing that provides virtual computing resources using Internet technologies.
SaaS	Software as a Service applications, a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted.
Non-Public Cloud	On-premises, Colocation, or Private Cloud
Resilience	Infrastructure availability, illustrated by down time, such as 99.999% “five nines” and Security, defined by time to detect and resolve security incidents.
Agile Methodology	Agile methodology is an iterative approach to software development and project management. It focuses on constant collaboration among small, cross-functional teams, and the incremental development and release of small features (as opposed to large releases).