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Thought Leadership Paper
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The Key To Enterprise Hybrid Multicloud Strategy

The Importance Of On-Premises In An
Increasingly Cloud-Forward World

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Executive Summary

As enterprise IT readily embraces public cloud technologies, on-premises and private cloud usage continues to grow. On-premises is not going away as a critical part of IT infrastructure strategy; instead, organizations are meshing together various types of IT infrastructure to meet their needs. Organizations that can bring together on-premises with public cloud strategically will be best positioned for operational excellence.

In August 2019, IBM commissioned Forrester Consulting to evaluate how organizations develop and implement their IT infrastructure strategies. Forrester conducted an online survey of 350 global enterprise IT decision makers across industries to explore this topic. We found that organizations are mixing and matching technologies across public cloud, hosted private cloud, and on-premises infrastructure based on business requirements.

KEY FINDINGS

- › **On-premises infrastructure is key to enterprise hybrid cloud strategy.** Enterprises are making strategic decisions about what types of IT infrastructure to use for which purposes — and on-premises continues to play a key role, with 90% of IT decision makers agreeing that on-premises infrastructure is a critical part of their hybrid cloud strategies.
- › **IT decisions makers select the right IT infrastructure strategy according to the job to be done.** Technology professionals consider workload, security needs, and time-to-value when designing IT infrastructure strategies. When it comes to workloads, IT decision makers anticipate that more than half of mission-critical workloads and 47% of data-intensive workloads will be run either on-premises or in an internal private cloud in two years.
- › **The push to public cloud doesn't mean organizations have stopped investing in on-premises.** The majority of IT decision makers surveyed expect their companies' funding for public cloud to grow over the next 24 months. At the same time, more than eight out of 10 respondents predict their organizations will increase investment in IT infrastructure outside of public cloud.
- › **Tapping the brakes on refreshes and upgrades can come at a cost.** Delays in IT infrastructure refreshes and upgrades expose enterprises to expensive vulnerabilities and can negatively impact customer experience. Security vulnerabilities, software compatibility issues, and an inability to meet customer expectations as a result of delays in infrastructure refreshes are top concerns for IT decision makers.

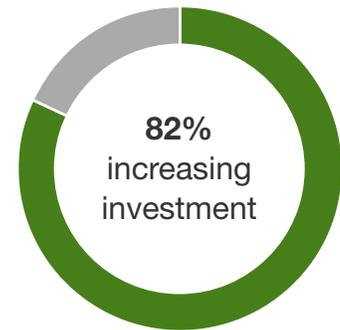
On-Premises And Private Cloud Investments Grow At Parity With Public Cloud

Public cloud trends have garnered growing coverage over the last several years, but the increased attention on transitioning to cloud and expanding outside the data center doesn't tell the whole story about organizations' IT infrastructure strategies. In addition to grappling with how and what to shift to public cloud, enterprise IT organizations are also struggling with increasing demands on existing IT infrastructure, with the end result being that on-premises and private cloud spending and usage also continue to grow. In surveying 350 IT decision makers, we found that organizations are simultaneously:

- › **Growing public cloud footprints.** Sixty-two percent of organizations already have some form of public cloud, and 82% of tech professionals expect to increase funding for public cloud over the next two years (see Figures 1 and 2). This finding is not surprising, as cloud has become mainstream.
- › **Providing for heightened demand on existing infrastructure.** One of the top three IT priorities is providing for growing demands on existing IT infrastructure. However, in the cloud era, there is pressure to extend infrastructure without needed updates and upgrades. In fact, 61% of respondents say their organizations have delayed an infrastructure refresh at least a few times in the last five years (see Figure 3). IT is grappling with how to get more out of their existing technology stacks without exposing themselves to risk.

Figure 1

“How much do you expect public cloud funding to change for your organization in the next two years?”

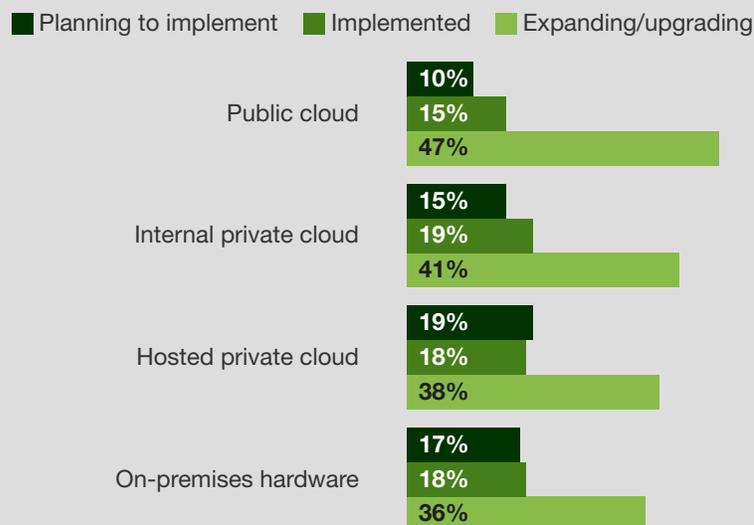


- 13% - Increase more than 20%
- 21% - Increase 11% to 20%
- 33% - Increase 6% to 10%
- 15% - Increase 1% to 5%
- 7% - Remain flat
- 11% - Decrease

Base: 350 global decision makers for IT infrastructure environments
 Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

Figure 2

“What best describes your organization’s plans to adopt the following in the next 12 months?”



Base: 350 global decision makers for IT infrastructure environments
 Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

› **Increasing on-premises and other nonpublic cloud investment.**

Funding for infrastructure outside of public cloud is roughly at parity with expected cloud growth: 85% are increasing funding for infrastructure (not including public cloud). Meanwhile, more than half of IT decision makers plan to update existing infrastructure or purchase new infrastructure within the next 12 months (see Figure 3).

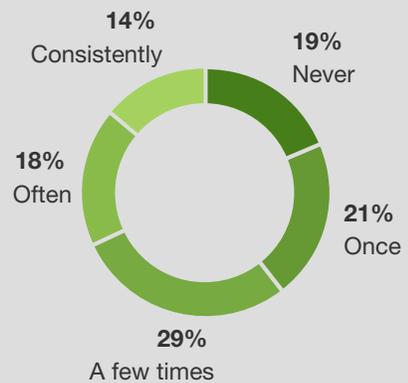
Figure 3

Firms are dealing with delayed upgrades and growing demands on existing infrastructure . . .

“What are your organization’s top IT priorities over the next 12 months?” (Showing top five priorities, ranked 1 to 3 by respondents)



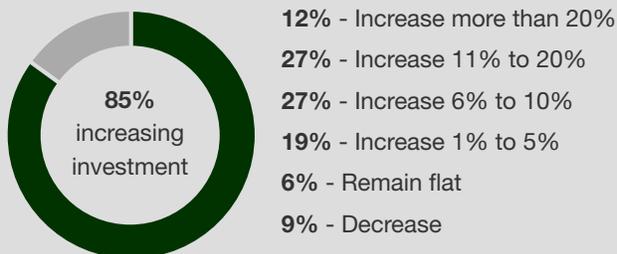
“How often has your organization delayed a refresh of infrastructure in the last five years?”*



61% have delayed a refresh a few times or more.

. . . even as they are increasing spend and continuing to invest in infrastructure outside of public cloud.

“To what extent do you expect infrastructure funding (not including public cloud) to change in the next two years?”



“What are your organization’s plans to invest in the following?”



Base: 350 global decision makers for IT infrastructure environments

*Base: 345 global IT decision makers who continue to refresh their infrastructure

*Note: Percentages do not total 100 because of rounding.

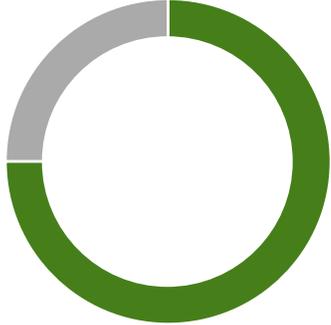
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

Lack Of Reinvestment Can Leave Organizations Vulnerable

As organizations continue to transition to hybrid multicloud environments, those that do not take a holistic view of their IT infrastructure, including on-premises, open themselves to security vulnerabilities, breakage, and, ultimately, loss of customer confidence and loyalty. Even when individuals recognize a need for a holistic approach, the road to implementing an all-inclusive infrastructure strategy is not easy. Seventy-five percent of survey respondents reported that they received significant pushback while advocating for strategies outside of cloud environments (see Figure 4). As a result, IT decision makers struggle with a variety of cost and strategy challenges following a delay in infrastructure refreshes and upgrades, including (see Figure 5):

- › **Security vulnerabilities.** When organizations prioritize other IT initiatives over infrastructure refreshes, they leave themselves exposed to security risks. Our survey findings reveal that the highest ranked repercussion is security vulnerabilities at 44%.
- › **Inability to meet increased customer and employee expectations.** By delaying infrastructure refreshes, organizations hinder the process for improving customer and employee experience. Forty-three percent of respondents cited the inability to meet increasing expectations of customers and employees as one of the top five consequences of delaying an infrastructure refresh. Technology innovation has powerfully changed how customers experience and value products, and in this era of hyperadoption and hyperabandonment, investing in customer experience is more critical than ever before.¹
- › **Compatibility restrictions.** Forty-three percent of respondents ranked restrictions for compatible apps, software, services, and integration as a top five challenge following a delay in infrastructure refresh.
- › **Decreased market competitiveness.** Based on our study, 39% of respondents have felt a loss of competitive edge as an IT organization. As a result of putting infrastructure refreshes on the backburner, organizations have not only opened themselves to internal vulnerabilities, but they have also left themselves at risk to fall behind their competition.
- › **Diminished performance.** In addition to organizations losing their competitive edge, delays in refreshes are also reducing organizations' performance. Thirty-eight percent of respondents stated that their organizations have experienced a decrease in performance post-delay.

Figure 4



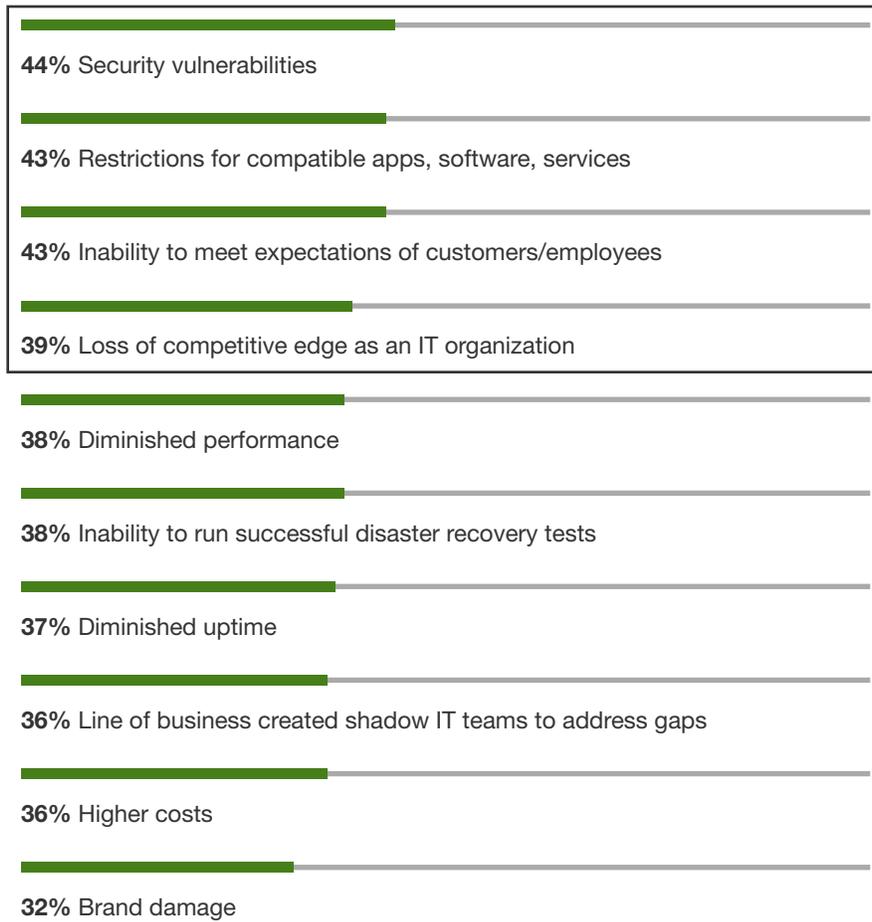
75% have received pushback while advocating for strategies outside of cloud environments.

Base: 350 global decision makers for IT infrastructure environments
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

Figure 5

“What repercussions has your organization faced after a delay in infrastructure refresh?”

(Showing top 10 repercussions, ranked 1 to 5 by respondents)



Base: 280 global decision makers for IT infrastructure environments who have delayed infrastructure refreshes

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

Crafting A Comprehensive IT Infrastructure Strategy: One Size Does Not Fit All

Organizations supplement cloud strategy with on-premises infrastructure to use the right tool for the job. On-premises infrastructure continues to be foundational, with 90% of respondents agreeing that it is a critical part of a hybrid cloud strategy (see Figure 6).² Our survey revealed that key considerations for infrastructure decisions include (see Figure 7):

- › **Type of workload.** Organizations are increasing the percentage of mission-critical workloads that are run in public cloud and internal private cloud at comparable rates. At the same time, they expect to increase data-intensive workloads that are run in hosted private cloud environments. Organizations also leverage on-premises for improved application or infrastructure performance, which lands in the top three reasons organizations leverage on-premises resources for some workloads.
- › **Compliance and security.** Greater assurance for compliance is the No. 1 reason for using on-premises resources for select workloads. According to respondents, failure to meet security needs is the top reason for maintaining infrastructure outside of a public cloud platform. Hosted private cloud offers the benefits of traditional on-premises infrastructure in a secure, private setting, while also allowing organizations to take advantage of cost savings and flexibility.³
- › **Cost and time-to-value.** Organizations ranked avoiding time-intensive budget approvals and realizing faster productivity with less process as top reasons to leverage on-premises resources. This need is particularly driving private cloud investment, with most viewing internal private cloud as a developer environment. These findings suggest that organizations use on-premises and private cloud to side-step bureaucratic processes and kick-start development efforts.

As organizations grow both their public cloud and nonpublic cloud footprints, continued investment in on-premises remains key. This theme is evident as a majority of organizations craft infrastructure strategies that account for increased workload demands, security compliance, and growth.

Figure 6



90% agree that on-premises infrastructure is a critical part of their firms' hybrid cloud strategies.

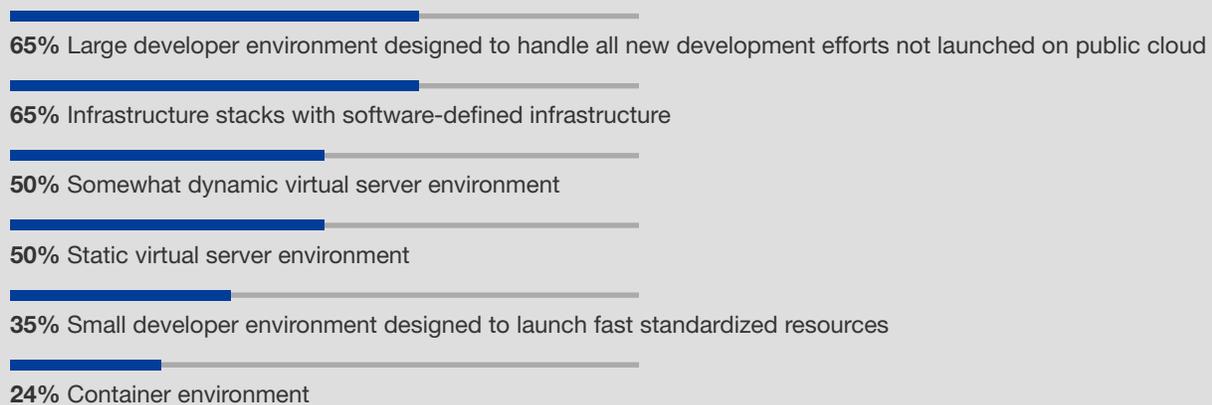
Base: 350 global decision makers for IT infrastructure environments
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

Figure 7

“Which of the following describe why you leverage on-premises resources for some of your workloads?”
(Showing top 10 reasons, ranked 1 to 5 by respondents)



“Which of the following describes your organization’s internal private cloud environment?”[‡]



Base: 241 global decision makers for IT infrastructure environments currently using public cloud

*Base: 350 global decision makers for IT infrastructure environments

†Base: 348 global IT decision makers maintaining infrastructure outside of public cloud

‡Base: 210 global IT decision makers currently using internal private cloud environments

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

“What percentage of your organization’s workloads run/will run in the following environments today/in two years?”^{*}

<i>Pts change over two years</i>	What percentage of your organization’s workloads run/will run in the following environments today/in two years?” [*]		
	All	Mission-critical	Data-intensive
Public cloud	2.7	1.2	-0.2
Hosted private cloud	0.1	0.1	2
Internal private cloud	-0.6	1.2	0.1
On-premises hardware	-2.3	-2	-0.9

“Which of the following reflects why your organization maintains infrastructure outside of a public cloud platform?”

(Showing top three, ranked 1 to 5 by respondents)[†]

- 40%** Public cloud does not meet our security needs
- 39%** Data residency is challenging for some apps
- 35%** Public cloud does not meet most of our requirements

Key Recommendations

In a world where the focus centers on cloud, it is easy to make the mistake of moving application workloads without a clear rationale for what benefits migration will achieve. Our survey uncovered evidence of this pressure to shift to cloud, as well as the reality that many organizations are intentionally and strategically leveraging a hybrid cloud strategy driven by diverse business and technology requirements.

Forrester's in-depth survey of 350 global IT decision makers about IT infrastructure yielded several important recommendations:



Invest in cloud using a strategy that aligns to your context. First, determine whether you are seeking gains at the application level or the data center level. Then, create your own sourcing framework with factors that may include cloud readiness, location challenges, compliance requirements, data types, need for additional support, and expected lifetime, among other factors.⁴ Hedge against cloud vendor lock-in by designing for multicloud deployment and architectures wherever possible.⁵



Don't let cloud obsession stop other infrastructure investments. The perception that infrastructure investment outside the public cloud has stopped is false. Yet as an infrastructure professional, it feels like budgets are under attack. The majority of IT leaders continue to invest.



Beware of delaying investment. Those that have delayed or stopped investment have experienced security vulnerabilities, software compatibility issues, and an inability to meet customer expectations. Learn from your peers and advocate for updates and upgrades.



Build an irrefutable business case. Our survey found that organizations are mostly likely to use higher performance as a proof point to justify new investment (see Figure 8). Performance is especially critical since it has significant impact on customer experience (CX) and brand perception. Executives that can't commit to complete refreshes can leverage subscription-based infrastructure refresh options to provide a more flexible future if their strategy changes.



Explore alternative environments for data-intensive workloads. Public cloud serves many workload types, but some use cases are extraordinarily expensive or introduce too great a risk surface. Data-intensive workloads are a great example of hybrid cloud strategies looking to optimize across all IT infrastructure options and ensure cost efficiency.

Figure 8

“When building a business case to refresh or invest in infrastructure, what proof points do you include to strengthen your case?” (Showing top five)

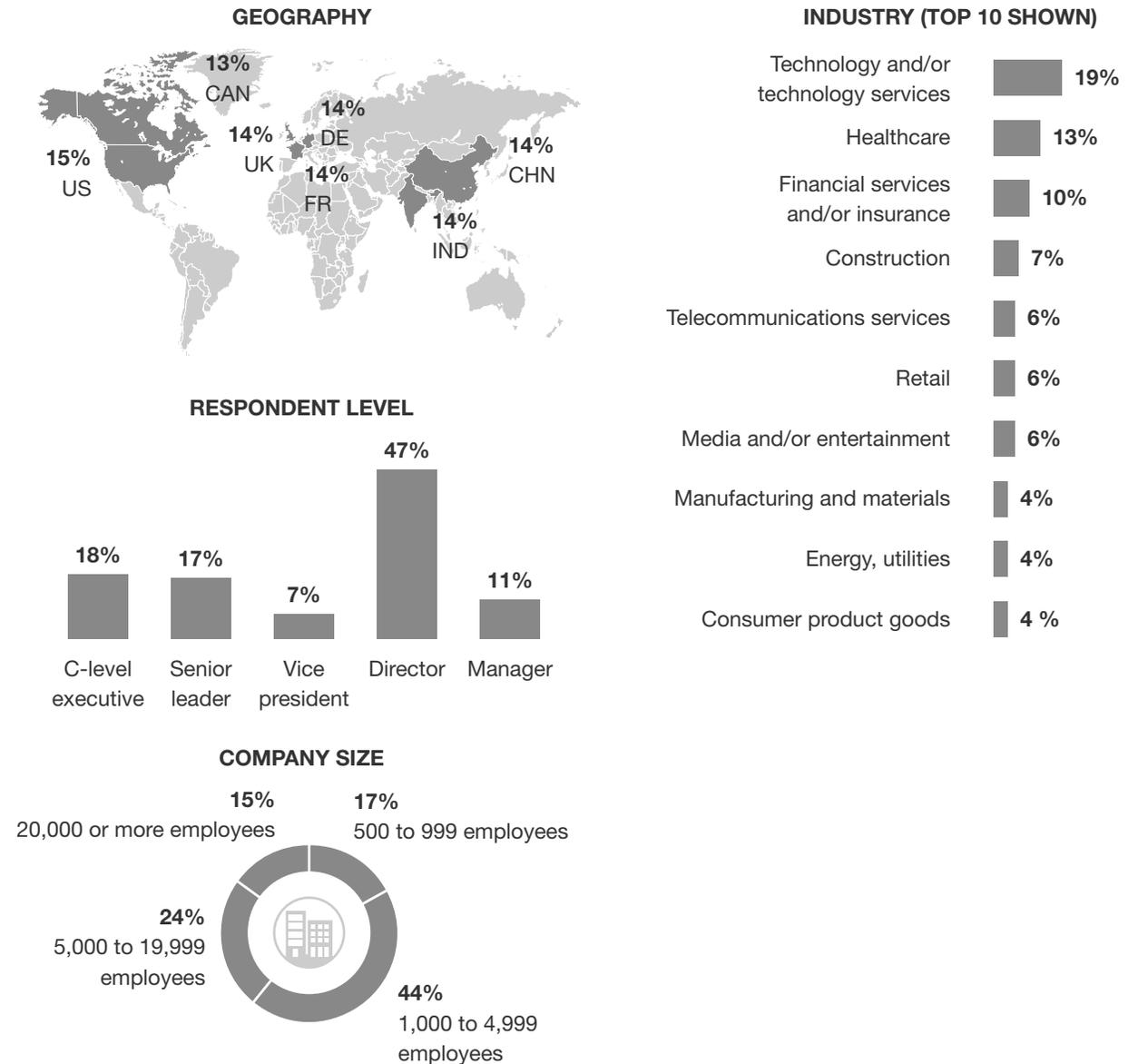


Base: 350 global decision makers for IT infrastructure environments
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

Appendix A: Methodology

In this study, Forrester conducted an online survey of 350 global decision makers for IT infrastructure environments to evaluate how organizations develop and implement their infrastructure strategies. Survey participants included IT decision makers in infrastructure and operations, application management or maintenance, and/or software development. Questions provided to the participants asked about environments used for different workloads and investment in infrastructure. Respondents were offered a small incentive as a thank you for time spent on the survey. The study began in August 2019 and was completed in September 2019.

Appendix B: Demographics/Data



Base: 350 global decision makers for IT infrastructure environments
 Note: Percentages may not total 100 because of rounding.
 Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, September 2019

Appendix C: Supplemental Material

“Tackling The Unsexy Challenge Of Mainframe Modernization,” Forrester Research, Inc., December 21, 2018

“Top 10 Facts Every Tech Leader Should Know About Hybrid Cloud,” Forrester Research, Inc., April 25, 2018

“Embrace Cloud Economics For On-Premises Enterprise Storage,” Forrester Research, Inc., October 16, 2018

Appendix D: Endnotes

¹ Source: “The Digital Business Imperative,” Forrester Research, Inc., February 15, 2017.

² Forrester defines hybrid cloud as the use of cloud in combination with other cloud or noncloud technologies.

³ Source: “Forrester Analytics: Private Cloud Solutions Forecast, 2018 To 2023 (Global),” Forrester Research, Inc., February 26, 2019.

⁴ Source: “Top 10 Facts Tech Leaders Should Know About Cloud Migration,” Forrester Research, Inc., March 14, 2019.

⁵ Source: “Now Tech: Public Cloud Development Platforms, Q1 2018,” Forrester Research, Inc., March 5, 2018.