

A Forrester Consulting  
Thought Leadership Paper  
Commissioned By IBM

April 2020

# The Role Of Automation In Managing Resilience In Hybrid Multicloud

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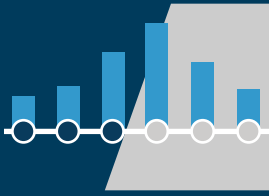
Forrester's CIO research group

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# Executive Summary



This study was conducted before the COVID-19 pandemic. Yet, the findings are even more relevant as enterprises address the increase in remote workers and the new reality of business.



Over a third of decision makers said their firms do not have the processes in place to meet their hybrid multicloud resilience needs.

Hybrid multicloud adoption can deliver business agility and superior customer experience but inherently complicates the risk posture of businesses. As businesses digitally transform, they need the flexibility and scalability that hybrid multicloud offers. But leaders must also keep in mind the need for highly skilled staff, an integrated strategy aligned with business processes, and technologies including orchestration for data protection and recovery. Automation and orchestration of workflows are required to successfully manage recovery across the entire infrastructure spanning hybrid multicloud environments.

In December 2019, IBM commissioned Forrester Consulting to study how organizations integrate resilience into their hybrid multicloud strategies and how far they are in automating and orchestrating their backup and recovery workflows. Forrester conducted an online survey with 372 global enterprise hybrid multicloud decision makers to explore this topic. We found that while some companies have begun using hybrid multicloud for their applications, most are still using a mix of on-premises and private cloud as well. As cloud environments increase in complexity, firms need an integrated resilience plan. This study was conducted before the COVID-19 pandemic. Yet, the findings are even more relevant as enterprises address the increase in remote workers and the new reality of business.

## KEY FINDINGS

- › **Hybrid multicloud resilience drives significant business and IT benefits.** IT decision makers are betting big on hybrid multicloud. They want to increase productivity, improve customer and user experience, and gain more trust from their customers. However, multicloud decision makers must be prepared for the challenges that come with complexity of fragmented environments, which can lead to increased risks. These risks demonstrate the importance of having a strong resilience program in place across the organization.
- › **Organizations still face unplanned downtime with varying impact on the business.** Nearly half (46%) of respondents said their organizations experienced unexpected downtime in the past year. Any downtime is costly, and decision makers expect cloud services partners to help them limit downtime as well as legal, reputational, and financial impacts. Respondents cited system failure of either hardware or software as the top cause of unexpected downtime in the past year. However, they also cited many other incidents like data loss/corruption, human errors, and cyberattacks as causes of downtime. Our study shows that cyberattacks have the largest impact on revenue and customer experience (CX).
- › **Traditional, manual methods can no longer provide hybrid multicloud resilience.** Today, 33% of hybrid multicloud decision makers use automation at every phase of their resilience process; they expect usage to nearly double to 60% in the next two years. Relying on manual, human-led testing, monitoring, and backup is costly. Relying on staff for these processes is expensive and time-consuming, and most firms do not have the manpower to devote to this full-time. By automating repetitive resilience tasks, technology leaders can see significant improvement and efficiency.

# Hybrid Multicloud Expansion Accelerates, Along With Its Challenges

As businesses undergo and continue their digital transformation journeys, many are choosing to migrate their workloads to hybrid multicloud platforms. While this migration can bring significant benefits, it also introduces new security and business continuity risks. Businesses that are not prepared for these risks leave their data vulnerable and put themselves in danger of losing customers. Understanding the risks of migration and how they can be managed and mitigated gives more mature companies a leg up on the competition. Our study found:

- › **Most firms are expanding their hybrid multicloud use.** Seventy percent of the respondents in our study said their firms are expanding their use of hybrid multicloud while another 29% reported their companies have at least implemented it. Our study found most application data is being spread across a mixture of on-premises, hybrid multicloud, and private clouds. In 2019, firms led their cloud migrations with core operations applications, followed by customer-facing applications, with core record-keeping applications trailing.<sup>1</sup> Our study shows that corporate applications and customer-facing applications are the most likely to be moving to hybrid multicloud in the next two years. Hybrid multicloud decision makers are focusing on these applications to address customer and employee experience initiatives first. Focusing on CX first should not delay core application improvements for long.
- › **Hybrid multicloud drives increased infrastructure complexity.** Our study found 33% of hybrid multicloud decision makers are currently configuring cloud infrastructure based on changing IT needs while an additional 46% intend to do so over the next two years (see Figure 1). In the next two years, many tech leaders will prioritize moving and securing their data while continuously monitoring ongoing operations. The increased IT complexities created by hybrid multicloud is causing and will continue to cause decision makers to focus on creating agile environments. Environments that are flexible and allow for easy integration will help them stay functional while remaining secure. Data will take center stage as cloud migration accelerates.



Nearly one-third of multicloud decision makers said their firms identified increasing their recovery workflow automation as one of the biggest opportunities for hybrid multicloud resilience.



Fifty-six percent of leaders in our study are very satisfied with their current hybrid multicloud platforms.

The demand for flexibility makes management across cloud and traditional platforms critical.

**Figure 1**

**“Which of the following best describes the current state of your organization’s transformation strategy for your hybrid multicloud environment today and in the next two years?”**



Base: 372 global enterprise hybrid multicloud decision makers

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

# Old Approaches Can't Provide Hybrid Multicloud Resilience

Data protection and recovery continue to grow in importance. As tech leaders expand their use of hybrid multicloud environments, their complexity also grows. Delivering resilience in a hybrid multicloud environment requires highly specialized skills, an integrated strategy aligned with business processes, and technologies with software-defined tools like orchestration to help with data protection and recovery to address this complexity.

Respondents still see resilience as insurance and invest only the bare minimum to ensure compliance. Many decision makers still treat resilience like an afterthought until downtime occurs. They don't consider the total cost of downtime, which often includes many cost categories that go unnoticed. Firms must at least improve visibility into tech operations. As hybrid multicloud decision makers build new business applications and more business processes depend on technology, a lack of executive support and a lack of visibility into recovery readiness will limit the ability to quickly recover.<sup>2</sup> Setbacks and resistance are exhausting, but leaders who can rise above these distractions and succeed through the indisputable physical and emotional pressures of dealing with incidents can thrive instead of drowning.<sup>3</sup>

Our study found:

- › **A range of incidents cause costly downtime.** Nearly half (46%) of hybrid multicloud decision makers have experienced unexpected downtime at their firms in the past year. The causes of this downtime revealed in our study range from software or hardware failure to data loss or corruption, human errors, and cyberattacks. Of all the different types of incidents that caused downtime, cyberattacks and data breaches have the largest impact on the business's revenue and customer experiences (see Figure 2). Compliance or regulatory violations and data loss/data corruption are a distant second and third.

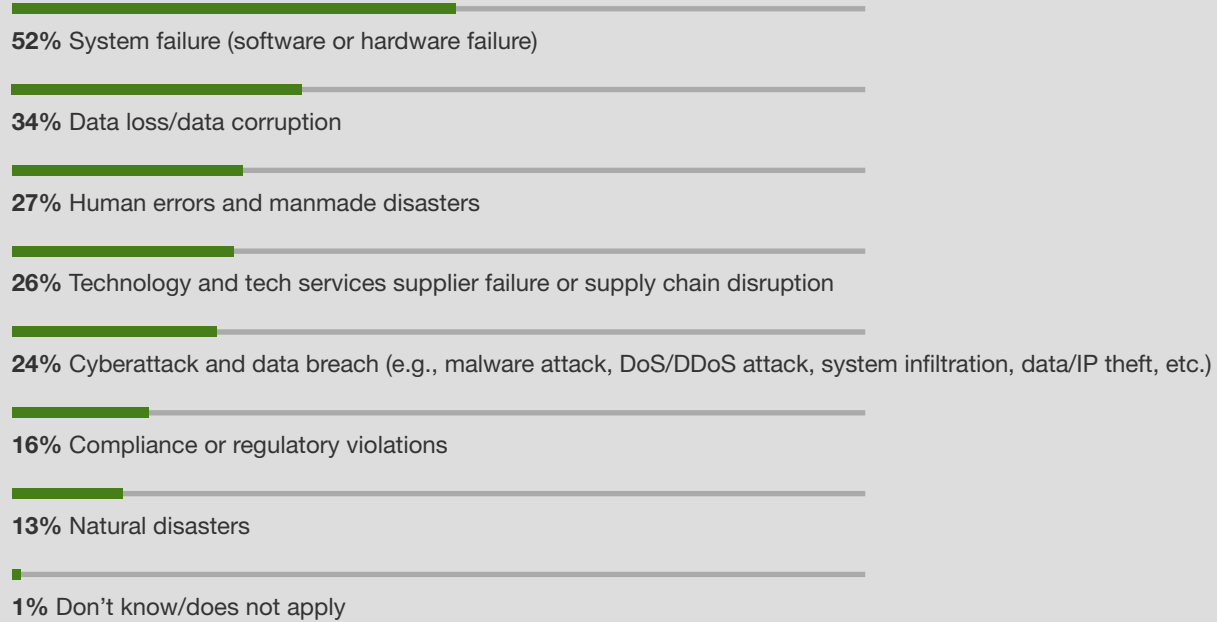
Respondents told us that incidents like cyberattacks and data loss are most likely to result in financial or reputational damage whereas incidents like human error, natural disasters, and regulatory violations often result in legal damage to the firm. For this study, we asked hybrid multicloud decision makers about the impact of downtime, meaning the business's ability to function, including revenue and CX. We found that the loss of information, revenue, or customers, as well as breached contracts or regulatory noncompliance, can affect the entire company. Perhaps most concerning, these failures can lead to reputational damage, including a loss of trust from customers, stakeholders, and investors.



Only 47% of decision makers strongly agreed that their organizations are prepared to run a fully orchestrated backup and recovery process on their hybrid multicloud environments.

**Figure 2**

**“Which of the following describe the cause of the downtime you experienced in your hybrid multicloud in the past 12 months?”**

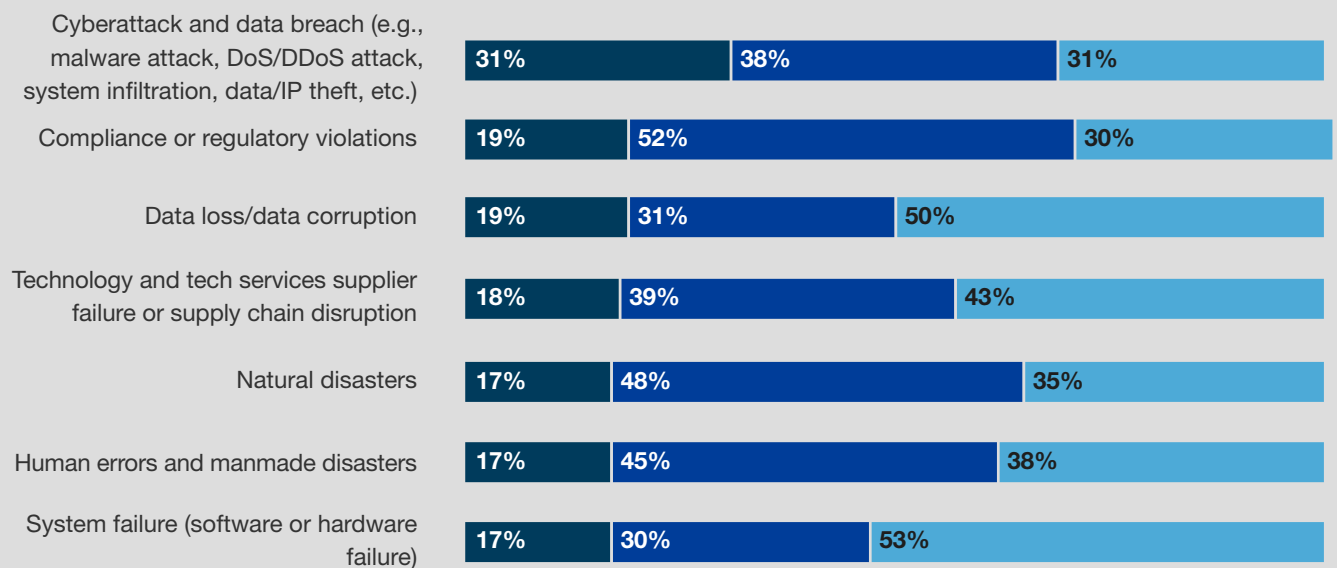


Base: 172 global enterprise hybrid multicloud decision makers

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

**“How would you describe the impact of the incidents you experienced on your organization’s business?”**

- Large (significant impact on the business’s ability to function with severe impact on revenue or customer experience)
- Medium (some impact on the business’s ability to function with moderate impact on revenue or customer experience)
- Small (minimal impact on the business’s ability to function with little to no impact on revenue or customer experience)



Base: Variable global enterprise cloud decision makers

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

- › **Manual recovery systems don't operate at the speed of customers' needs.** Thirty-two percent of respondents said their firms continuously monitor ongoing hybrid multicloud operations, and 41% report they will continuously monitor ongoing hybrid multicloud operation over the next two years. But this passive approach isn't enough. Our study showed that nearly a third (32%) of hybrid multicloud decision makers' organizations primarily use tools that require manual intervention to address testing, monitoring, and data backup, likely costing significantly more than fully automated solutions.

What's more, organizations will not be able to handle the increasing complexity with manual processes. The nature of technology, particularly software-enabled technology, means that increased scalability and flexibility naturally lead to greater complexity. While technology scales, though, the ability to manage it through manual processes doesn't.<sup>4</sup>

- › **Culture constrains the move to resilience automation.** Your firm must explicitly address the people side of automating dependency and risk planning, event detection, and recovery. Over time, automation will replace some of your staff, and the fear of job loss will create resistance to training and then working alongside the automation technology.<sup>5</sup> Your leaders must actively address career development for post-automation employment — on an individual level. And for skills development, encourage people to take risks, reward them for successful ones, and treat failures as education, not punishable offenses. When Forrester asked the CIO at a large retailer about automation, he said: "I have the right people and tools already. My main job here is to create an environment where they can flourish. Right now, we do not have that."<sup>6</sup>
- › **Finding skilled staff is a top challenge.** One-third of hybrid multicloud decision makers in our study agreed their firms do not have the right skills to manage their hybrid multicloud resilience processes. Another third said they do not have the staff with the right skills to recover quickly from downtime (see Figure 3). This leaves decision makers to hire/ onboard partners to fill in the gaps of their hybrid multicloud resilience processes. Of the industries in our study, retail firms are the most likely not to have enough staff, not to have staff with the right skills, and to turn to partners to help with their hybrid multicloud resilience processes.



31% of decision makers said it is difficult to find staff with the ability to work across hybrid multicloud environments.

Figure 3

“How much do you agree with the following statements about what you learned about people, processes, and technology as a result of your experiences in your organization’s hybrid multicloud resilience program?”

■ Strongly/moderately agree

33% We do not have enough staff to manage our hybrid multicloud resilience process.

33% We do not have staff with the right skills to recover quickly from downtime.

Base: 372 global enterprise hybrid multicloud decision makers  
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, December 2019



# To Address Resilience, Firms Need Automation And Skilled Resources

Successful recovery of the infrastructure spanning hybrid multicloud environments requires automation of disaster recovery workflows across that infrastructure. As decision makers expand their use of hybrid multicloud, they see opportunities for improvement such as increasing their monitoring capabilities, adopting better resilience technology, increasing the automation of their recovery workflows, and implementing predictive analytics. Hybrid multicloud decision makers seek benefits through:

- › **Use of third-party and custom-built solutions to address resilience.** Fifty-one percent of multicloud decision makers reported their firms use a combination of custom-built in-house and third-party resources to address resilience in hybrid multicloud environments today. A few (18%) decision makers rely on in-house resources while a small group (13%) rely on vendor-supplied managed services to address resilience (see Figure 4).

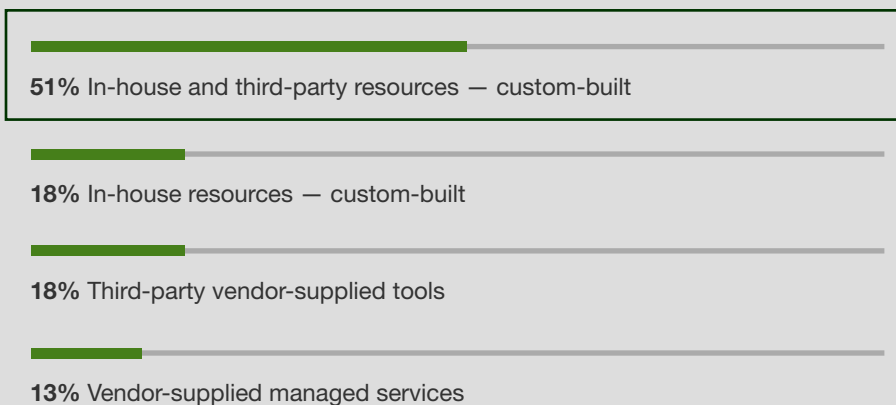
The use of custom-built, in-house solutions and third-party solutions to address resilience allows for the sharing of knowledge and best practices. Internal IT teams will know their own systems and environments while partners varying in size, functionality, geography, and vertical market focus bring subject-matter expertise and best practices needed for success. Decision makers can rely on partners to act as guides during their digital transformation journeys.



Nearly one-third of hybrid multicloud decision makers said their firms use third-party vendor-supplied tools or managed services.

Figure 4

“Which of the following best describes how your organization is addressing resilience in its hybrid multicloud environment today?”



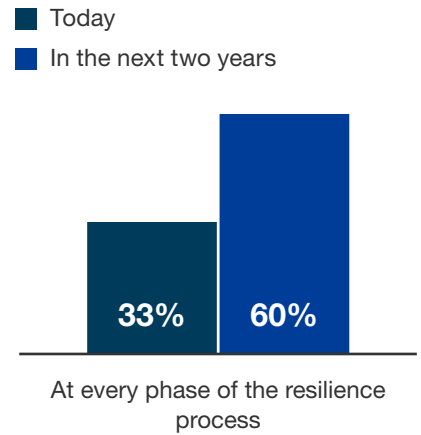
Base: 243 global enterprise hybrid multicloud decision makers  
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, December 2019

› **Use of automation as a core solution at every phase of the resilience process.** Recovery has been a largely manual process, but respondents expect to increase their use of automation to significantly improve speed and accuracy. Only one-third of respondents today reported that their firms use automation at every part of their resilience process, but the number of respondents who expect to do so in two years is dramatically higher, nearly doubling to 60% (see Figure 5).

Resilience automation does more than just minimize downtime. Resilience automation goes beyond helping to meet business goals to hitting top IT targets — like faster recovery times and end-to-end optimization. Improved resilience automation drives top business targets by using scripts to take previously manual recovery activities and execute them with software. Decision makers in our survey saw resilience automation as a way to increase productivity, improve customer and employee experience, and gain customer trust.

Figure 5

“How much do you use automation today in your current recovery process? How much do you expect to use in the next two years?”



Base: 372 global enterprise hybrid multicloud decision makers  
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, December 2019

# Key Recommendations

Don't let your firm's move to hybrid multicloud catch you by surprise. Establish a resilience plan that parallels your cloud-based digital transformation — with appropriate technology, staffing, and management practices to deliver this plan. The following recommendations address the trends and best practices stemming from Forrester's in-depth survey of 372 global hybrid multicloud decision makers at enterprise-sized organizations:



**Develop a clear view of your firm's hybrid multicloud growth plan.** Begin with a realistic look at where you are in moving applications and data to the cloud — and how the complexity of your move will expand over the next two to three years.



**Make identification of application and infrastructure dependency, vulnerabilities, and risks — and their potential business impacts — a required element of hybrid multicloud deployment.** Then polish your plans by tracking performance, including the number of incidents, their causes, the severity of business impact, how they were identified, how they were remediated, and cost of remediation.



**Build out a view of how your resilience plan will operate within the overall cloud plan.** This should include your approach to backup and recovery, monitoring, and event response — paying attention to the level of automation and the availability of staff with both today's and tomorrow's skills.

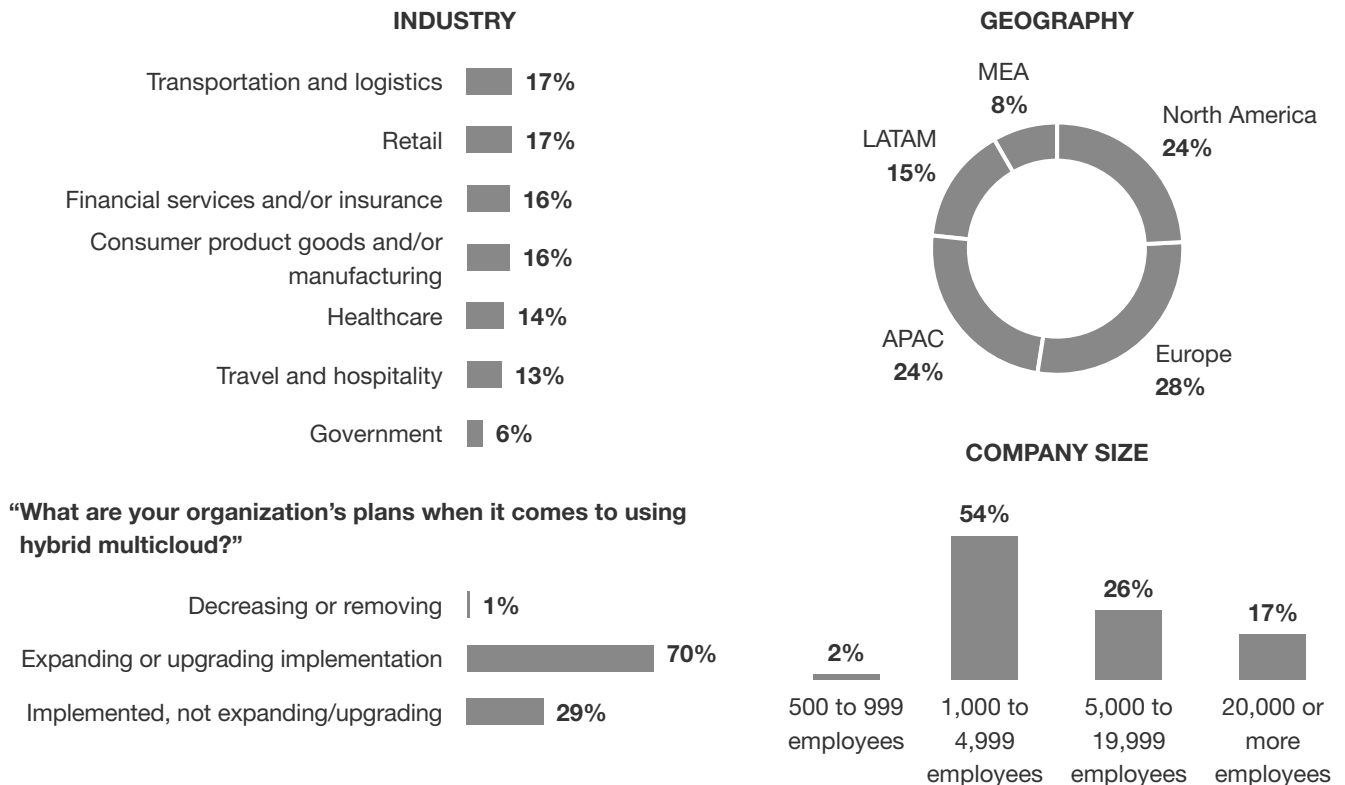


**Look for appropriate partners to accelerate realization of your resilience plan.** Recognize when you need increased automation as well as greater and new skills to deliver on the resilience strategy, and then build a plan for acquiring those tools and skills — both initially for rapid acceleration and for long-term operations.

## Appendix A: Methodology

In this study, Forrester conducted an online survey with 372 global enterprise hybrid multicloud decision makers in 18 countries to evaluate the need to integrate a resilience plan into their hybrid multicloud strategies up front and orchestrate their backup and recovery workflows in complex, hybrid multicloud environments. Survey participants included decision makers in hybrid multicloud and resilience. Questions provided to the participants asked their current and future resilience strategies, their use of cloud environments, and the downtime experienced in the past year. The study began in September 2019 and was completed in December 2019.

## Appendix B: Demographics



Base: 372 global enterprise hybrid multicloud decision makers

Note: Percentages may not total 100 because of rounding.

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

## Appendix C: Endnotes

<sup>1</sup> Source: “Modernize Core Applications With Cloud,” Forrester Research, Inc., August 5, 2019.

<sup>2</sup> Source: “Develop A Recovery Readiness View To Gain Insights Into Your Recovery,” Forrester Research, Inc., January 26, 2018.

<sup>3</sup> Source: “Executive Spotlight: Top Priorities For Security And Risk Leaders In 2019,” Forrester Research, Inc., June 7, 2019.

<sup>4</sup> Source: “Reduce Risk And Improve Security Through Infrastructure Automation,” Forrester Research, Inc., June 22, 2018.

<sup>5</sup> Source: “Future Jobs: Plan Your Workforce For Automation Dividends And Deficits,” Forrester Research, Inc., April 30, 2019.

<sup>6</sup> Source: “Automation Drives The I&O Industrial Revolution,” Forrester Research, Inc., November 19, 2019.