

A Forrester Consulting
Thought Leadership Paper
Commissioned By Red Hat
July 2020

Enterprise Open Source Automation Drives Innovation

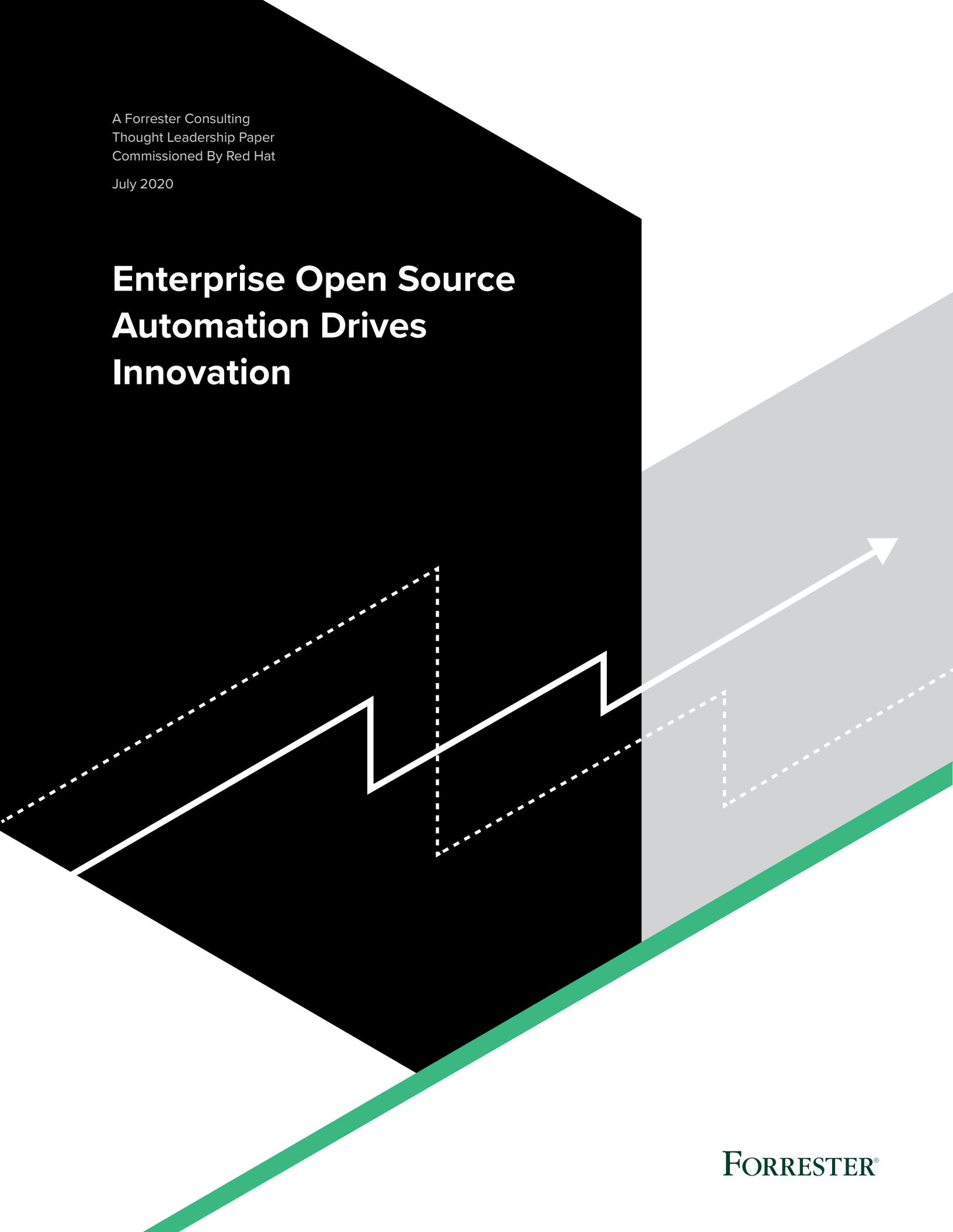


Table Of Contents

- 1** Executive Summary
- 2** Automation Begins With Key Processes
- 5** Leadership/Implementer Misalignment Underscores Firms' Automation Struggles
- 9** Automation Paves The Way For Myriad Business And Technical Benefits
- 12** Key Recommendations
- 13** Appendix

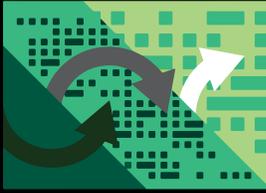
Project Director:
Megan Doerr,
Market Impact Consultant

Contributing Research:
Forrester's Infrastructure &
Operations research group

ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

© 2020, Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies. For additional information, go to forrester.com. [E-45681]



99% of decision makers report a variety of technology and business benefits from their firms' automation software investments.



Almost half of decision makers say the need to address time-consuming manual processes drove their decisions to purchase automation software.

Executive Summary

Automation is at the core of firms' technology strategies across all verticals and industries; effective businesses need technology that adapts and scales quickly, reliably, and economically. But firms must evaluate the most practical place to begin automating their processes and typically turn to automation software to assist with streamlining and updating their processes. Enterprise open source (paid) tools can offer a variety of innovative benefits for firms, including higher performance, faster time-to-market, and a lower risk profile than their free counterparts.¹ Getting started with simple, tactical automation is easy but using it at scale and working on higher value automation that spans teams, geographies, and crosses management area presents challenges.

In December 2019, Red Hat commissioned Forrester Consulting to evaluate infrastructure automation. Forrester conducted an online survey with 378 infrastructure automation decision makers responsible for their organizations' open source automation strategies to explore this topic. We found that firms are largely prioritizing automation initiatives over an array of competing goals. However, leadership teams and implementers are misaligned on ideal goals and use cases. To see even more fruitful business benefits, implementers and leadership must align.

KEY FINDINGS

- › **Supported automation paves the way for business success.** Ninety-nine percent of decision makers report multiple technology and business benefits from their automation software investments, including improved security, improved integration, and faster innovation.
- › **Firms are well on their way to pursuing automation with security, efficiency, and customer demands in mind.** Three out of five decision makers report automation as one of their firms' top initiatives, even amid competing priorities like adoption of cloud, containers, and security management. Almost half of decision makers say the need to address time-consuming manual processes drove their decisions to purchase automation software, followed closely by customer demands and improved security.
- › **Leadership and implementers are misaligned on goals and use cases, which can hinder success.** Leadership remains focused on automating security management and responding to threats while implementers concentrate on provisioning and delivery of software. Additionally, leadership is far more optimistic about the levels of automation in key processes than hands-on implementers report. This misalignment leads to miscommunication that prevents firms from getting the most from their investments.

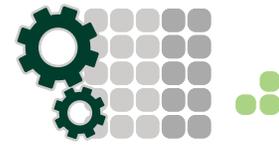
Automation Begins With Key Processes

Today's customers are more empowered than they've ever been; they know more, wait less, and are hyperaware of their importance. This empowerment means that customers are less bound to brands, and their experiences with brands can mean the difference between loyalty and abandonment. Firms need more flexibility than ever before to continue resonating with their fickle customers.

If firms want to continue to scale their business amid this tumultuous customer landscape, their internal processes must be agile enough to support their ever-changing customer expectations. Additionally, firms are scrambling to understand the "new normal" created by COVID-19, how to navigate these turbulent waters, and how this pandemic will affect their strategies long-term. Firms can, and should, use the challenges presented by this pandemic as an opportunity to develop new ways of working, invent new business models, and rid business processes of inefficiency.² Automation is a necessity, now more than ever, as firms seek greater agility through adoption of open source automation tools.

In our survey of 378 infrastructure automation strategy decision makers, we found that:

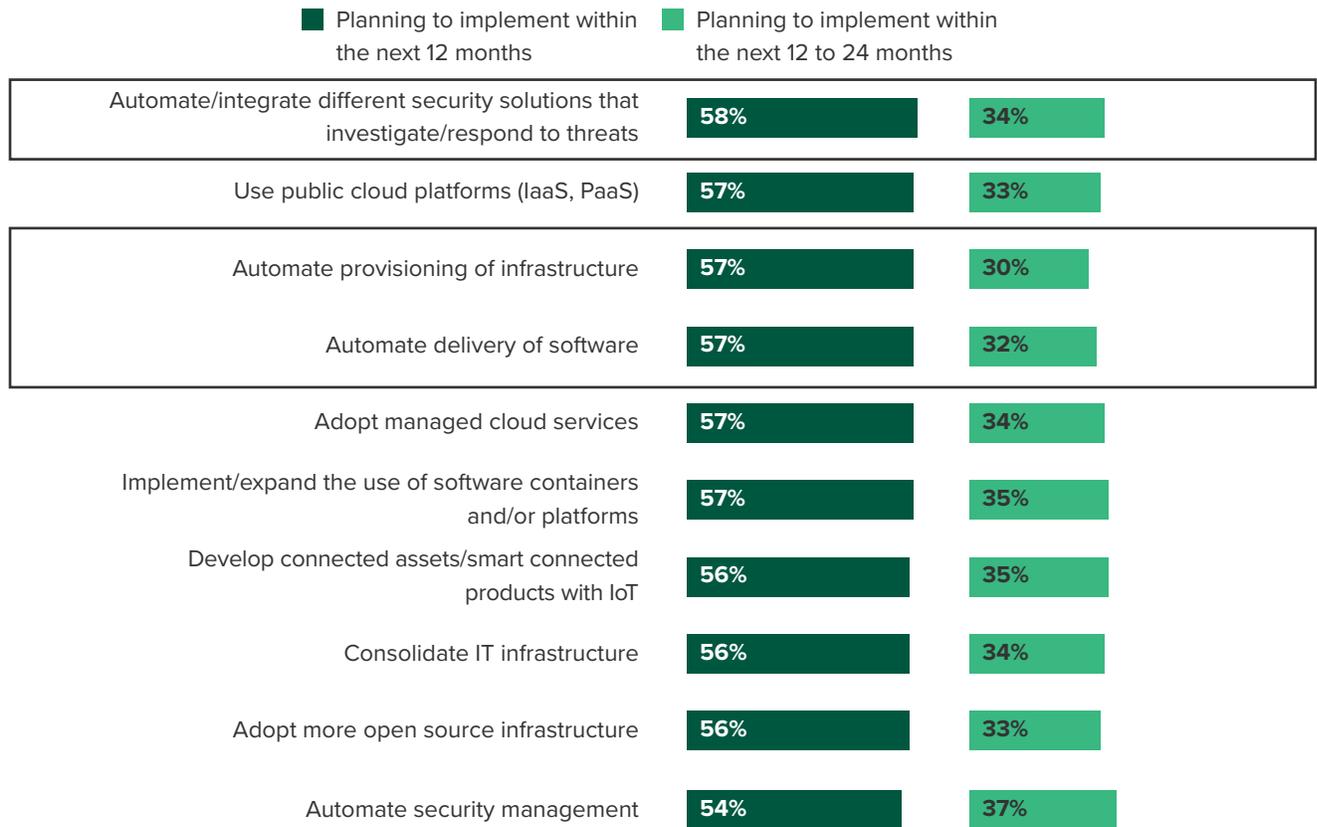
- › **Firms are prioritizing automation initiatives over an array of competing goals.** Three out of five respondents report automation as one of their firms' top initiatives, even amid competing priorities like adoption of cloud, containers, and security management (see Figure 1). Firms clearly understand the importance automation holds for their future plans and are seeking to automate all aspects of their business.
- › **Automation targets the low-hanging fruit in most organizations, but it is often incomplete.** The most commonly automated infrastructure management tasks today include server monitoring (59%), firmware/driver updates (55%), utilization reporting (54%), asset tracking/location (54%), and security audits/scanning (53%). Some of these tasks have been automated for decades or more. For any one of these tasks, however, only one in five respondents says the process is entirely automated. In other words, businesses could do more to scale their automation.
- › **Firms see value in automating more variable manual tasks.** Those tasks that remain more manual are prime candidates for automation. Once firms have automated simple tasks, decision makers inevitably want to tackle more complex and variable ones, such as issue resolution (80%) and hardware troubleshooting (79%) — tasks well-suited for a paid solution to handle.



Three out of five respondents report automation as one of their firms' top initiatives.

Figure 1

“Which of the following initiatives are likely to be your organization’s top priorities over the next 12 months? Over the next 24 months?”



Base: 378 infrastructure automation strategy decision makers responsible for their organizations’ open source automation strategies

Note: Top 10 answers shown

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

AUTOMATION TOOLS INCREASE EFFICIENCY, IMPROVE CUSTOMER EXPERIENCE, AND IMPROVE SECURITY

While all firms automate, most decision makers know their companies aren't as efficient as they could be. Fortunately, tools can help them close the automation gap. Respondents report purchasing automation software for various reasons, but the most common are to:

- > Address time-consuming manual processes (44%).
- > Meet customer demands (43%).
- > Address security incidents (42%).

While the top response here is unsurprising, customer demands and security are nearly equal drivers for the software purchases. Automation platforms must be robust enough to meet multiple customer demands in a privacy-centric way. Ideally, firms should utilize a platform that works across the organization and helps meet the goals of both IT decision makers and implementers.

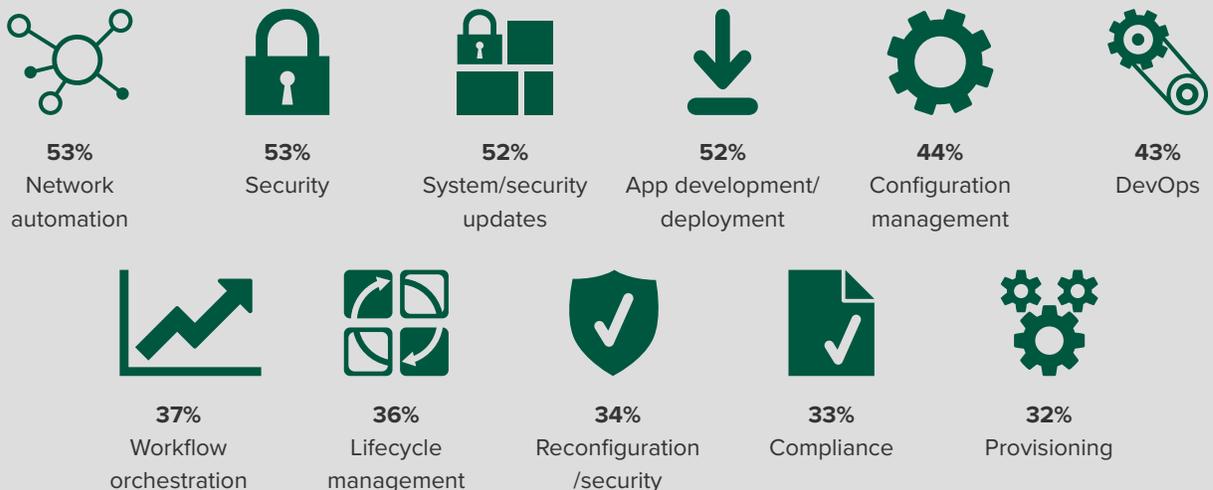
In the infrastructure world, reported use cases for open source automation software include network automation, security, and systems updates (see Figure 2). As firms are still in the early stages of applying a holistic strategy to their automation, they have not yet begun to utilize everything their tools offer in terms of compliance and end-to-end provisioning.



Because decision makers rank so many automation priorities highly, automation platforms must be robust enough to meet multiple customer demands. Paid solutions are key to meeting these.

Figure 2

“What do you use your open source infrastructure automation software for?”



Base: 378 infrastructure automation strategy decision makers responsible for their organizations' open source automation strategies
Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, December 2019

Leadership/Implementer Misalignment Underscores Firms' Automation Struggles

In the face of technological deficit, one of the largest obstacles firms face is, unsurprisingly, humans. It's great news that firms are beginning to approach automation holistically, throughout all business processes, but our study also indicated misalignment between leadership (those in director-level positions and above) and implementers (full-time employees). Even though 83% of implementers say they received leadership support to purchase their open source automation licenses, one in four of those implementers who *received* leadership support still experiences misalignment somewhere along the journey, whether it be in setting automation priorities, determining which open source automation to use, or deciding the level to which infrastructure automation tasks are automated.

LEADERSHIP/IMPLEMENTER MISALIGNMENT ON GOALS AND IDEAL USE CASES

When looking at automation priorities, leadership remains focused on automating security management and responding to threats while implementers concentrate on provisioning and delivery of software (see Figure 3). Implementers are taking a tactical approach, trying to automate commodity technical tasks, while leadership is focused on improving security. Leadership may not be doing a good enough job conveying their priorities downstream, as overall implementers view everything as slightly lower priority.

Figure 3

“Which of the following initiatives are likely to be your organization’s top priorities over the next 12 months?”

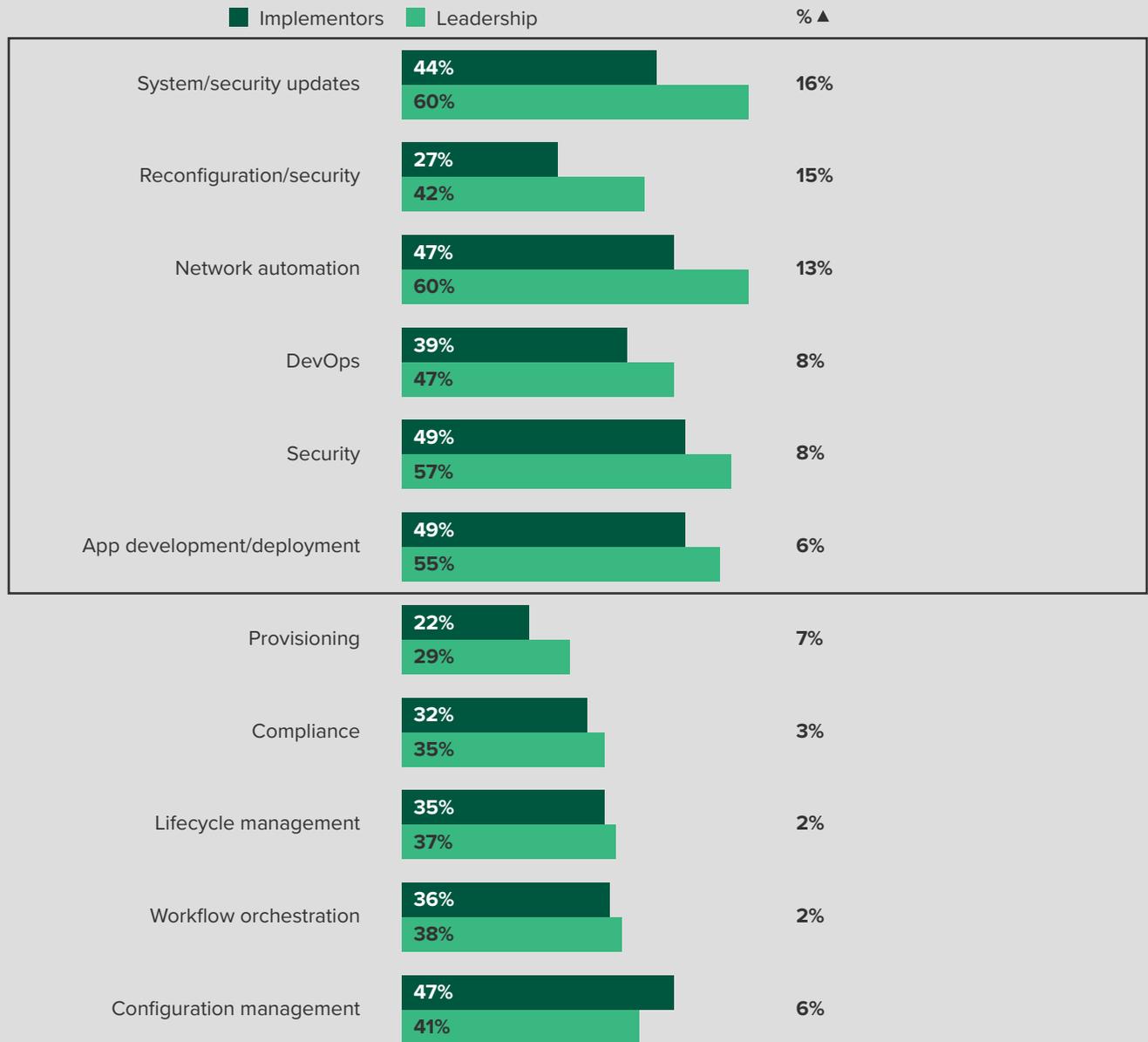
Initiatives	Implementors	Leadership
Automate security management	47%	62%
Use public cloud platforms	51%	63%
Implement BYOD policy	35%	44%
Automate/integrate different security solutions that investigate/respond to threats	54%	62%
Adopt more open source infrastructure	52%	60%
Build an internal private cloud	40%	46%
Consolidate IT infrastructure	54%	59%
Automate provisioning of infrastructure	54%	60%
Automate delivery of software	54%	60%
Adopt managed cloud services	54%	60%
Coordinate enterprise security systems	49%	54%
Develop connected assets/smart connected products with IoT	57%	56%
Implement/expand the use of software containers and/or platforms	57%	56%
Invest in next-generation hardware like robotics or customer self-service automation	53%	49%

Base: 378 infrastructure automation strategy decision makers responsible for their organizations' open source automation strategies
 Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, December 2019

For direct use cases, those in leadership positions expect that open source is being used to automate their environments more often than implementers are actually successful in doing so (see Figure 4). The largest gaps lie in system and security updates, reconfiguration, and network automation.

Figure 4

“What do you use your open source infrastructure automation software for?”

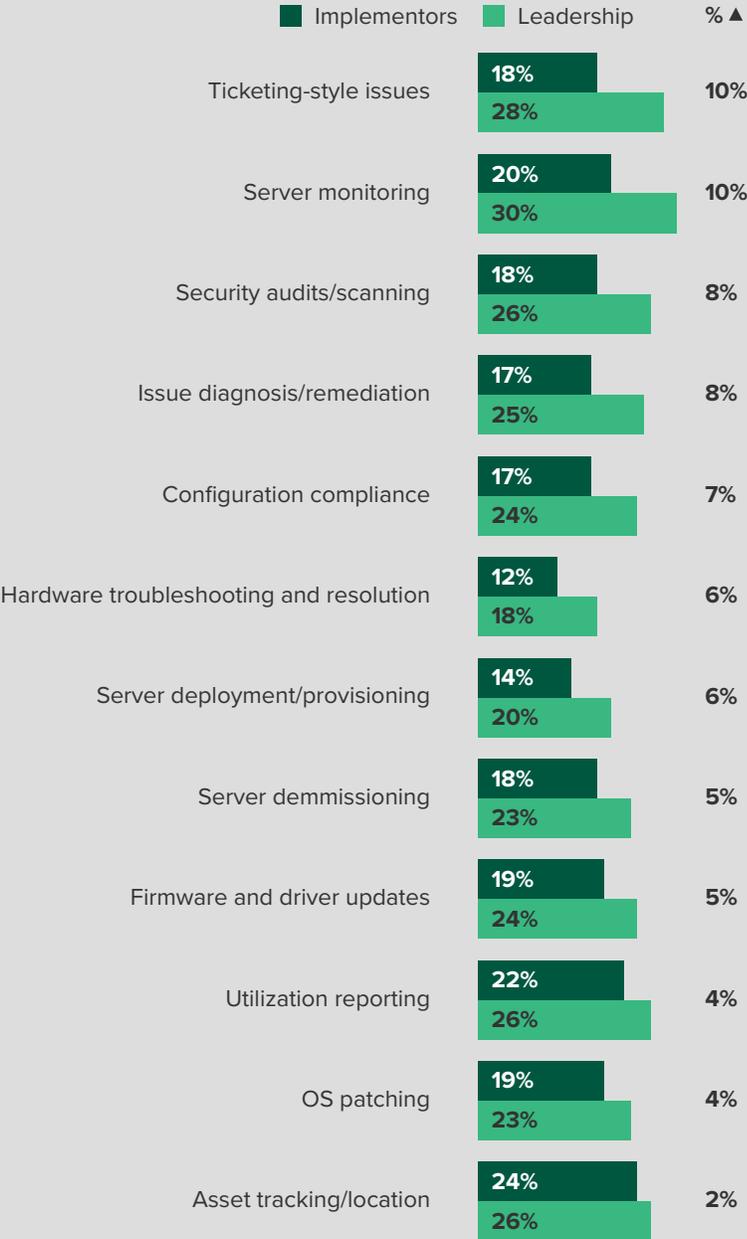


Base: 378 infrastructure automation strategy decision makers responsible for their organizations' open source automation strategies
 Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, December 2019

Implementers and leadership perceive the scale of automation in their organizations in different ways, which further contributes to misalignment. Leadership is far more optimistic than implementers about the levels of automation in key infrastructure management tasks (see Figure 5). Part of leadership’s misperception stems from the lack of their knowledge around platform capabilities. Many implementers still maintain legacy systems that must be monitored and audited with older tools.

Figure 5

“To what extent would you say each of the following infrastructure management tasks are automated within your IT operations team?” (Showing percent responding “Entirely automated”)



Base: 378 infrastructure automation strategy decision makers responsible for their organizations’ open source automation strategies
 Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, December 2019

TOOL IMPLEMENTATION PREFERENCES DIFFER

This disconnect spreads across teams within organizations. Most decision makers report primarily using open source enterprise (paid) solutions in both development/test and production environments. However, 38% of respondents say that the main reason they don't use open source enterprise (paid) solutions consistently is because of the difference in tool preferences between developer and infrastructure/operations leadership teams. This creates integration challenges, as reported by 37% of respondents.

38% of decision makers say that the main reason they don't use open source enterprise (paid) solutions consistently is because of the difference in tool preferences between developer and leadership teams.

Automation Paves The Way For Myriad Business And Technical Benefits

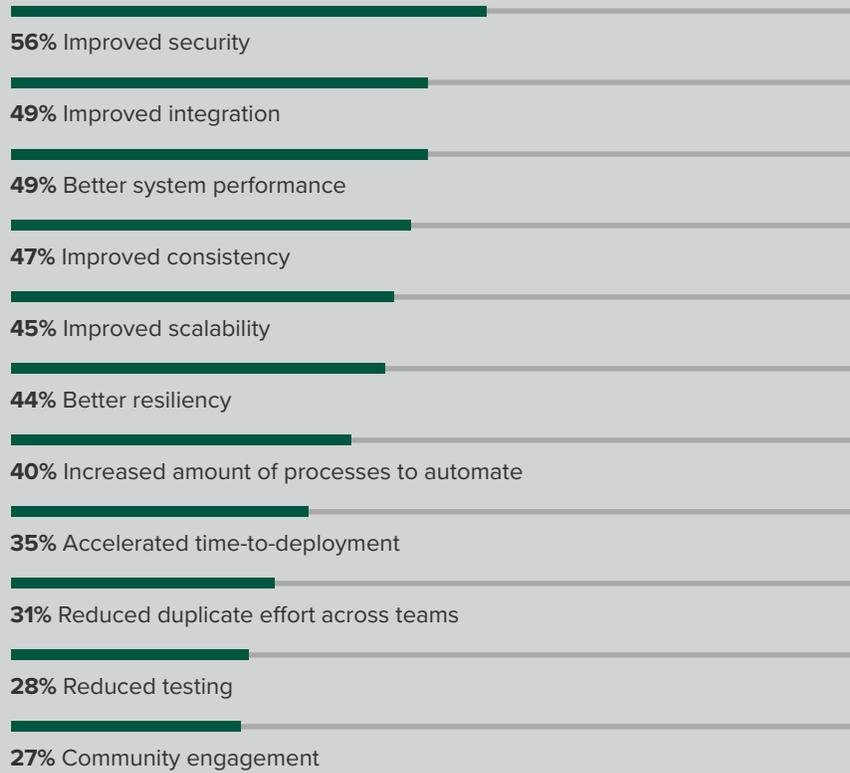
Even though a holistic automation strategy is still in its early stages at most firms, they have begun to realize a swath of business and technical benefits from their open source automation investments. Decision makers commonly report improved/faster innovation, better risk management, and increased product revenue as a result of their use of open source enterprise (paid) automation software — all of which are direct benefits of the initial issues that prompted their software purchase (see Figure 6). Decision makers whose firms use enterprise (paid) versions throughout the product lifecycle are more likely to report increased product revenue (56% of enterprise users vs. 43% of all others), better risk management (53% vs. 46%), and improved/faster innovation (56% vs. 48%).

To improve their infrastructure automation software strategies in the future, decision makers are primarily looking to better educate employees on automation (54%) and invest in additional automation software (49%). However, we see some variation when comparing the ways implementers and leadership are prioritizing future goals. Implementers are more likely to want to work with new partners and increase employee education on automation, whereas leadership is more focused on increasing software investment and creating a culture of automation.

While these goals may be somewhat different, they align to the same end state: Decision makers want their firms' automation strategies to produce tactile results. Focusing on this future can bridge some of the gaps firms may currently be experiencing because of misalignment.

Figure 6

“What technical benefits have you seen by adopting enterprise versions of open source automation software?”



“What business benefits have you seen by adopting enterprise versions of open source automation software?”



Base: 378 infrastructure automation strategy decision makers responsible for their organizations' open source automation strategies
Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, December 2019

WHAT'S NEXT FOR AUTOMATION TOOLS?

Despite progress, nearly two-thirds of respondents say they'd like to see improvements in their current automation tools. To address this, they are looking for automation platforms that go beyond the typical infrastructure day-to-day tasks. When evaluating new tools, firms prioritize:

- › Security features (40%).
- › Ease of use (35%).
- › Data/reporting features (27%).

These features are imperative for firms to progress to the next phase of automation. The ability for tools to be easily adopted and used by anyone increases the likelihood they'll be used correctly, mitigating risks down the road. Advanced data and reporting features give leadership teams a more accurate view into day to day progress, helping to narrow the gap.³

COVID-19 ACCELERATED AUTOMATION DEPLOYMENTS

The recent pandemic is a “kick in the teeth” to almost every business. As we have seen in every crisis, psychology and practices can change in profound ways. COVID-19 is certainly one of these events.⁴ Automation is a notable inflection because:

- › **Automation increases after every global shock.** Recent economic crises led to “jobless recoveries” because irreversible employment changes emerged. Enterprises automated many functions to adapt during the crisis. Once they felt the productivity gains, these jobs never returned at the same levels.
- › **Job changes were already in progress.** Robotic process automation (RPA) and infrastructure automation are two automation categories already reducing boring, repetitive work. COVID-19 is a turbocharger for these trends. Reliance on humans for such work is ineffective. With an amplified need to perform these jobs without humans, related automation tools are enjoying revenue surges while other tech spending is plummeting.
- › **Paper processes proved especially crippling.** With everyone working from home, nobody was in the office to receive and sign paperwork, and the need for intelligent document capture and e-signature skyrocketed as a result. The paperless society has long been predicted, but it may finally be here now.
- › **Cloud-like infrastructure is now mandatory.** Tech workers are among the employees unable to be physically present in the office or the data center. This comes just as demand for tech exploded – literally overnight. Automating infrastructure operations is no longer nice to have – it is the *only* way to go. Sense-and-adapt automation for infrastructure is the basis of cloud services. Everything must now behave like a cloud, even legacy systems and the emerging edge.

Key Recommendations

Implementing open source automation is not a new concept for most organizations. However, optimizing it requires alignment between stakeholders, amending priorities, and thinking beyond efficiency gains.

Forrester's in-depth survey of IT professionals about open source automation yielded several important recommendations in this regard:



Align leadership and implementer priorities. Practitioners and management do not see completely eye-to-eye in our study. Implementers must focus more on automating the provisioning of infrastructure and deployment of applications to match leadership priorities.



Focus on business benefits, not just technical benefits. Respondents cite better integration and system performance as key technical benefits. However, just as critical are business benefits such as faster innovation and increased product revenue. A proper automation strategy should address business deliverables directly, not just infrastructure.



Focus on the intersection of security and infrastructure automation. Many respondents cite automating security responses to threats as a key priority, alongside provisioning of infrastructure and software. As security operations shift left, holistic tools can address both needs.



Address gaps in KPIs and transparency. In many cases, leaders feel processes in their organizations are more automated than they are. For instance, leaders perceive ticketing-style issues and server monitoring as more automated than implementers report they are. This could lead to serious resource mismanagement.

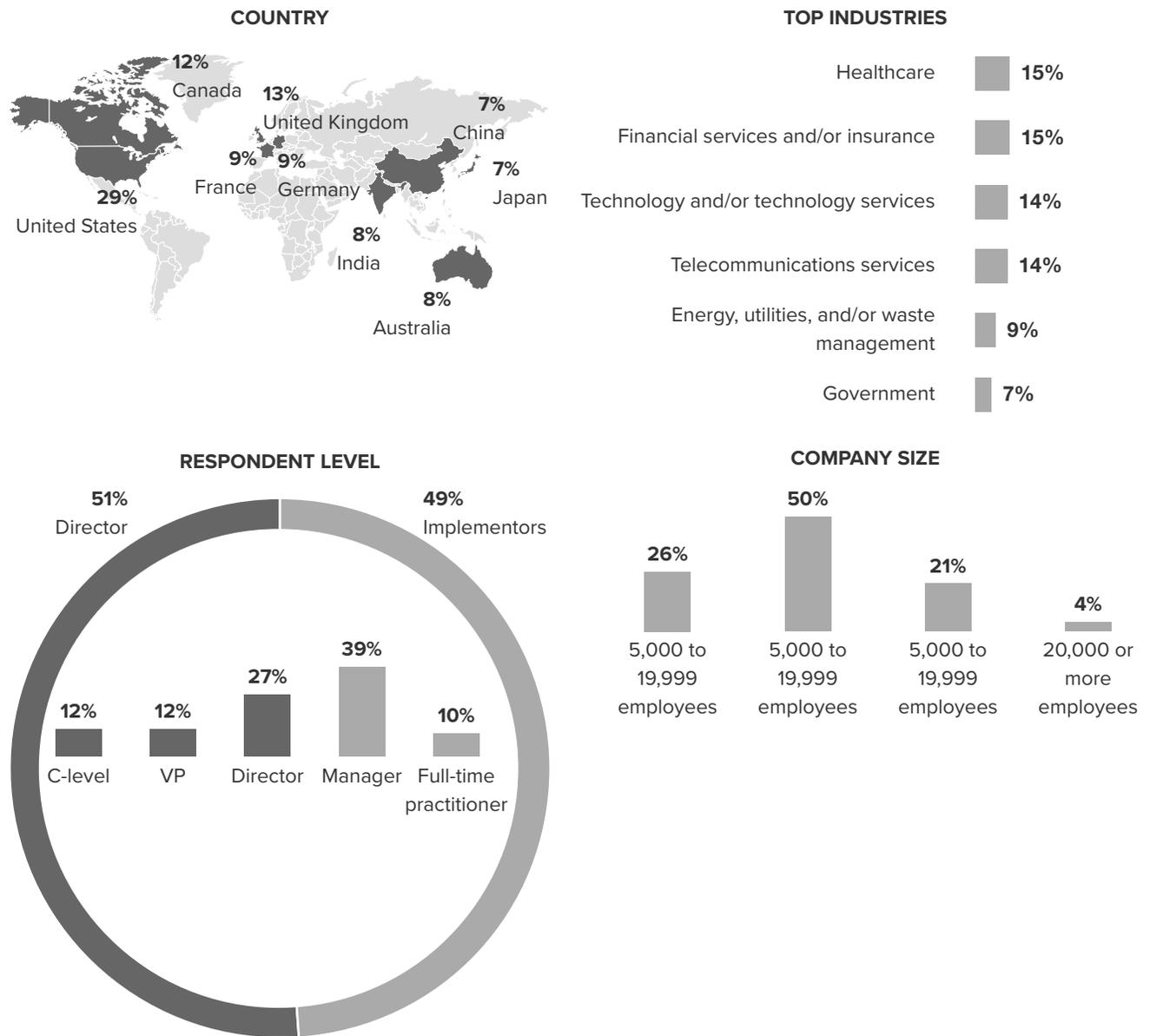


Automate everything possible to thrive post-pandemic. Winston Churchill said, "Never let a good crisis go to waste." While COVID-19 inflicted pain across the global economy, *this* is the time to invest in growth. Automation is already delivering impressive productivity and quality improvements. These improvements are critical to capitalize on the opportunities presented by the pandemic.

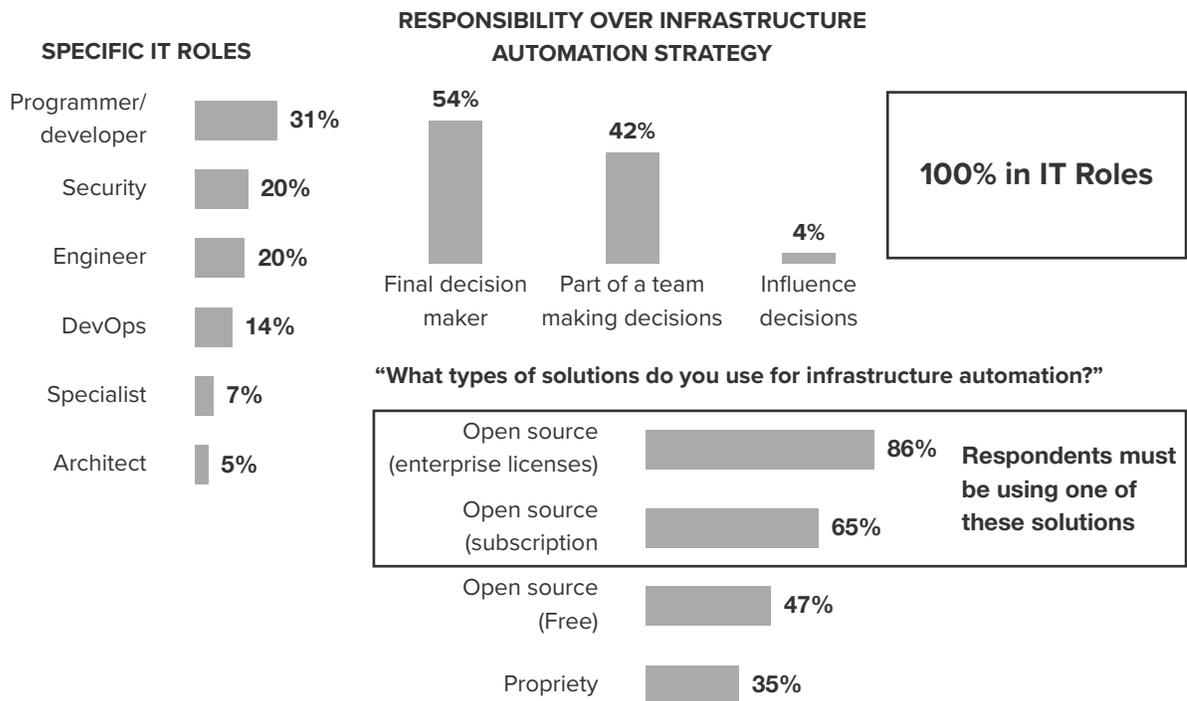
Appendix A: Methodology

In this study, Forrester conducted an online survey of 378 infrastructure automation strategy decision makers in Australia, Canada, China, France, Germany, India, Japan, the UK, and the US to evaluate attitudes and usage of automation tools. Survey participants included infrastructure automation strategy decision makers responsible for their organizations' open source automation strategy. Respondents were offered incentives as a thank you for time spent on the survey. The study was completed in December 2019.

Appendix B: Demographics



Base: 378 infrastructure automation strategy decision makers responsible for their organizations' open source automation strategies
 Note: Percentages may not total 100 because of rounding.
 Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, December 2019



Base: 378 infrastructure automation strategy decision makers responsible for their organizations' open source automation strategies
 Note: Percentages may not total 100 because of rounding.
 Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, December 2019

Appendix C: Endnotes

- ¹ Open source enterprise solutions can also be referred to as paid solutions. We'll use open source enterprise (paid) throughout the paper when we refer to this type of solution.
- ² Source: "Your Automation Psychology And Roadmap Just Shifted Gears," Forrester Research, Inc., May 29, 2020.
- ³ Forrester has seen this interest in our own research. Differentiating criteria focus on risk management, complexity of integrations, and reporting functionality for compliance professionals. Source: "The Forrester Wave™: Infrastructure Automation Platforms, Q3 2019," Forrester Research, Inc., August 7, 2019.
- ⁴ Source: "The COVID-19 Crisis Will Accelerate Enterprise Automation Plans," Forrester Research, Inc., May 5, 2020.