

solarwinds

Cloud Confessions!

2020

Tech Pro Survey (North America)

Conducted by C White Consulting, November 2019



INTRODUCTION	3
KEY FINDINGS	4
RECOMMENDATIONS	7
CONCLUSION	8
AREAS OF DISCUSSION	10
DEMOGRAPHICS	11
FULL SURVEY RESULTS	13

INTRODUCTION

The time in the spotlight has finally come for application performance management (APM). With hybrid realities taking over environments, the majority of technology professionals have acknowledged the need for comprehensive, full-stack application monitoring and management. This recognition has made APM solutions and strategies a consideration for a growing number of IT departments.

However, SolarWinds Cloud Confessions 2020 paints a picture of how tech pros are actually using these technologies and shows that more can be done to maximize the potential of APM tools. This year's survey of application owners, developers, and support teams, inclusive of roles spanning IT operations for cloud and hybrid environments, DevOps, monitoring engineering, and site reliability engineering (SRE), shows that most tech pros are using APM tools in a troubleshooting capacity and not as part of proactive APM strategies to achieve optimization.

With application availability and performance as critical business drivers, APM solutions must be more than reactive troubleshooting tools. The opportunity for tech pros lies in fully leveraging the benefits of APM across the entire application stack so they can better communicate across IT functions, breaking down silos that have traditionally existed across code, infrastructure, and user experience. APM tools also provide opportunities to up-level communication with business leaders to provide performance dashboards that effectively communicate the business-critical functions tech pros perform on a daily basis.

This report showcases how application owners, developers, and support teams currently use APM tools, and areas they feel they need more education and support to be able to fully and confidently utilize APM solutions to their potential.

KEY FINDINGS

This survey explores how extensively technology professionals are using APM tools, whether on-premises or for SaaS-based application management, and how they monitor these environments. It also showcases areas where tech pros feel confident in their APM tools and strategies, as well as challenges and avenues for building confidence. Key findings show:

1. Tech pros are using APM tools, employing a nearly even mix of SaaS and on-premises to support the three architectures most often found in modern environments. Despite this, confusion around which tools are ideal for specific IT environments is consistent across application owners, developers, and support team roles.

- » Nearly nine in 10 tech professionals are using APM tools in their environments.
 - 59% are using APM for monolithic (traditional on-prem) app development architectures
 - 40% are using APM for N-tier service-oriented architectures
 - 39% are using APM for microservices
- » The top three most commonly deployed tools in support of APM strategies are:
 - Database monitoring (64%)
 - Application monitoring (63%)
 - Infrastructure monitoring (61%)
- » Two-fifths of tech pros face challenges due to lack of awareness of what APM solutions are currently offered and confusion over which currently offered APM solutions are best for their needs (respectively).

2. Overall, tech pros are confident in their ability to manage and monitor applications on-prem, in hybrid environments, and in the cloud; this confidence mostly sits within their ability to troubleshoot.

- » Over eight in 10 (84%) respondents are confident in their ability to successfully manage application and infrastructure performance.

(continued on next page)

KEY FINDINGS *(continued)*

- » Two-fifths (40%) of tech pros surveyed are most confident troubleshooting application issues and monitoring application availability and performance (respectively) given their existing skillset, followed by one-third (32%) of tech pros confident in collaborating with team members.
 - Troubleshooting and monitoring as the top two areas where tech pros have the most confidence is consistent with last year's **findings**—in 2019, troubleshooting app issues was the number one activity tech pros spent their time on, with 48% of respondents choosing this as a top three task.

3. The largest challenges tech pros face when monitoring and managing application and infrastructure performance relate to an existing knowledge and skills-gap. As a result, tech pros have continued to deal with the troubles of troubleshooting, despite nearly all using some type of APM tool in the last 12 months.

- » When ranking the challenges, tech pros said:
 - Lack of training for personnel was the top challenge (57%), followed by lack of awareness of what APM solutions are currently offered (44%) and confusion over which currently-offered APM solutions are best for our needs (42%).
 - All other challenges were at, or under, the 30% rate.
- » Nearly eight in 10 (78%) tech pros report spending less than 10% of their time proactively optimizing their environments (vs. reactively maintaining).
 - In 2019, 77% of respondents reported spending the same amount of time on proactive optimization.

(continued on next page)

KEY FINDINGS *(continued)*

4. Tech pros value the business insights delivered from APM tools, but greater skills development is needed in establishing KPIs and communicating IT performance to the business.

- » The top three business insights tech pros gain from APM tools include:
 - Ability to prevent applications outages (73%)
 - Ability to prevent app slowdown related to performance and/or capacity (63%)
 - Ability to improve user/customer experience (62%)
- » Tech pros are collecting these business metrics, but there is a need to bridge the gap between business metrics collected and tech pros' confidence in their ability to communicate performance to the business.
 - 34% of tech pros feel they need to improve their current skillset/ability to track impact across key business metrics to more confidently manage their organization's IT environment, followed by 30% of tech pros who feel they need to improve their current skillset/ability to troubleshoot application issues, improve the performance of application code (29%), and manage/ensure/improve end-user performance (29%) (respectively).

RECOMMENDATIONS

Know which combination of APM elements are right for your environment – Today’s environments are highly complex and distributed, involving microservices, n-tier, monolithic, and commercial off-the-shelf (COTS) applications. This means the potential benefits of APM are even greater in modern contexts. In terms of code analysis, APM solutions provide great value in identifying problems in code that report when a transaction or an application is slow or failing. However, these applications are not always built by your company but are instead purchased, which is an important delineation—knowing where the problem is in the code is only of value if it’s your code. This level of code analysis via APM can be used by developers and DevOps teams, but also traditional IT teams like IT operations for cloud or hybrid environments.

For cases where tech pros are measuring performance of purchased applications or COTS, different forms of APM will be beneficial. Real user monitoring (RUM) injects code into the user’s browser and measures how long the web application takes to respond to user requests. Synthetic transaction monitoring uses remote probes to simulate user behavior. Both RUM and synthetic monitoring work regardless of applications being purchased or custom developed.

Develop an APM plan – With an understanding of what APM is in the context of modern environments and what levels of APM you need, follow a 5-step series for developing an APM plan.

The steps include:

- » **Inventory your applications:** Review and classify your applications by their source (who built them) and by their business criticality.
- » **Assess which key business insights and technologies to monitor and why:** Involve the application support teams early on and make sure the application monitoring project will ultimately meet their performance requirements.
- » **Evaluate APM tools:** Evaluate APM tools to ensure the correct mix of server-side (application, infrastructure, and log monitoring) along with client-side (synthetic availability monitors and RUM) are provided to ensure you meet your business needs.

RECOMMENDATIONS *(continued)*

- » **Test and trial APM tools:** Understand the basic requirements for each type of monitoring—performance monitoring (synthetics and RUM), APM (code profiling, analysis, and tracing in production), and logging.
- » **Measure your APM ROI or CRAQ:** Build an ROI tracker for monitoring projects around cost savings, revenue protection, agility, and quality of service.

Speak the language of business – Understanding APM means knowing its place in larger business discussions, and how you as a tech pro can make an impact. Digital transformation projects remain a top concern for business leaders. In these scenarios, digital transformation efforts are creating applications that must be highly available, perform well, and focus on user experience, making end-to-end APM more important than ever before. Application owners and business stakeholders responsible for digital transformation efforts are interested in factors like revenue, market share, and customer satisfaction associated with the business services applications are automating. Present dashboards that contextualize APM in their language with elements like performance, throughput, and error rate.

If you build it, skills will come – Complex, modern applications will produce disruptions due to infrastructure and operations skills gaps in 75% of enterprises, according to Gartner. However, following the recommendations above also provides a blueprint for APM skills development. It all begins with rooting yourself in an understanding of APM functionality and then right-sizing strategies and tools to be able to achieve full stack APM while also communicating performance to key business stakeholders.

CONCLUSION

APM can only perform to the level developers, application owners, and support teams allow it to perform. Today, that means while APM tool usage is widespread, it is not nearly as effective as it could be—an important distinction to business leaders in charge of digital transformation efforts.

By understanding the APM world beyond troubleshooting, the possibilities for application performance optimization open up across the stack and across previously siloed teams. APM, when used to its potential, can be the great unifier of tech pro teams all working toward the goal of having highly available, great performing applications, and it can change the way modern businesses operate in the age of performance.

STUDY OVERVIEW

Areas of Discussion

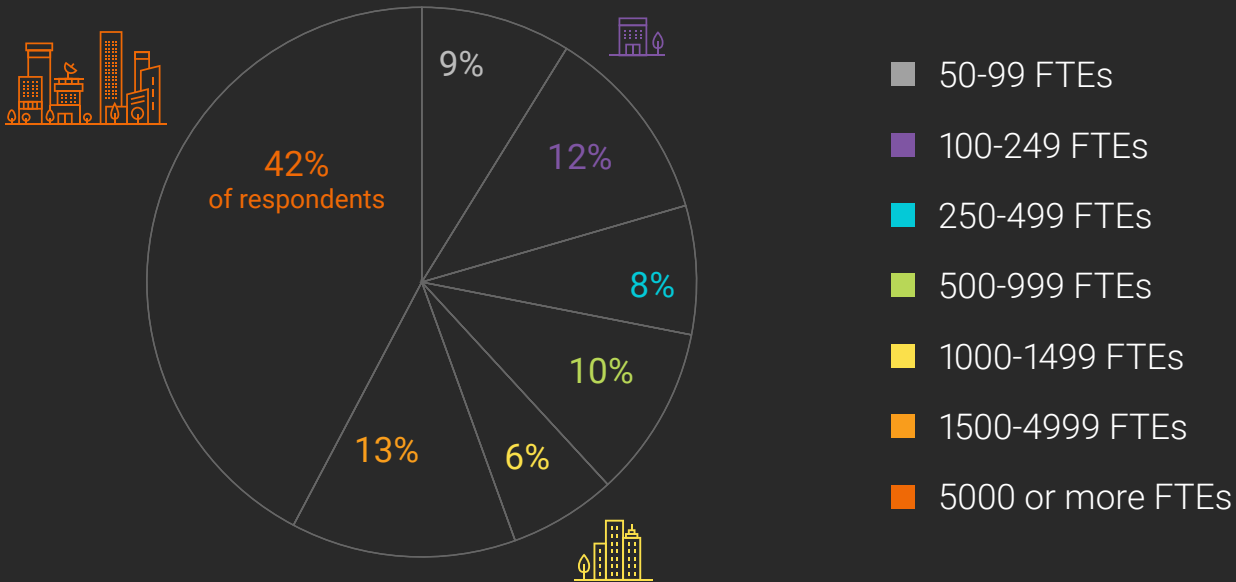
- » How extensively are technology pros using on-premises versus SaaS-based application performance management (APM) tools for their IT environments?
- » How do technology pros monitor on-premises, hybrid, and cloud-native environments differently?
- » In what areas do technology pros feel most confident in their ability to monitor application performance?
- » How will technology pros build confidence in their ability to monitor application performance?

STUDY OVERVIEW

Demographics

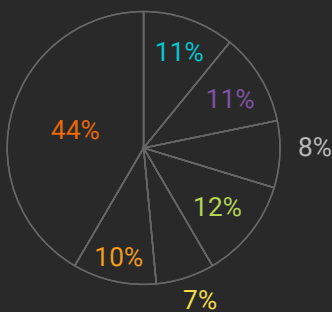
COMPANY SIZE (OVERALL)

(number of employees)



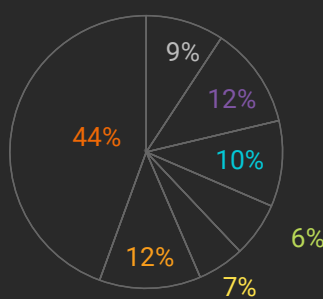
COMPANY SIZE – APP OWNERS ROLE

101 respondents



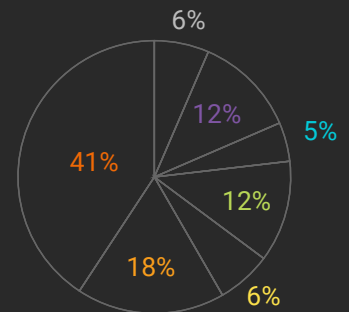
COMPANY SIZE – DEVELOPER ROLE

108 respondents



COMPANY SIZE – SUPPORT TEAM ROLE

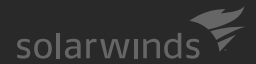
108 respondents



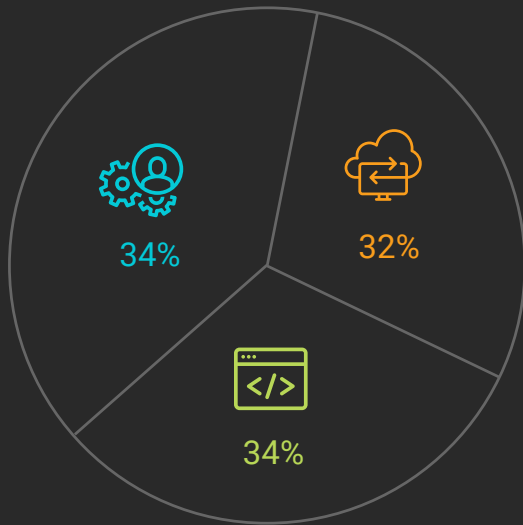
317 Application Owner, Developer, and Support Team professionals (practitioner, manager and director roles) in the U.S. and Canada from public- and private-sector small, mid-size and enterprise organizations participated in a November 2019 online survey. Respondents include 101 Application Owners, 108 Developers, and 108 Support Team technology professionals.

STUDY OVERVIEW

Demographics

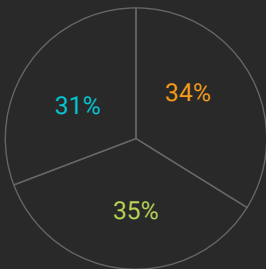


TECH PROS ROLE – OVERALL

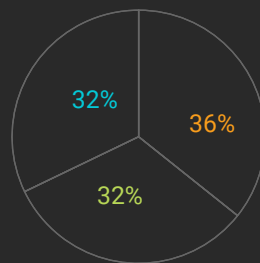


- Application Owner of online and/or business apps
- Developer of Apps, SW and/or Architecture
- Support for Apps, Cloud Ops, Monitoring Engineering, Operational, and/or SRE

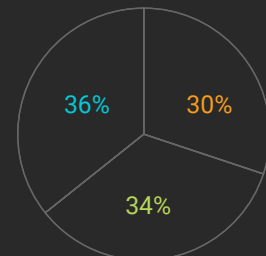
SMALL BUSINESS TECH PROS BY ROLE



MID-SIZED BUSINESS TECH PROS BY ROLE



ENTERPRISE TECH PROS BY ROLE



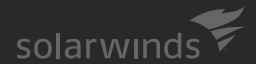
The 317 technology professionals (practitioner, manager, and director roles) surveyed in the U.S. and Canada include 101 application owners, 108 developers, and 108 support team technology pros. All roles are represented across each business size (respectively).



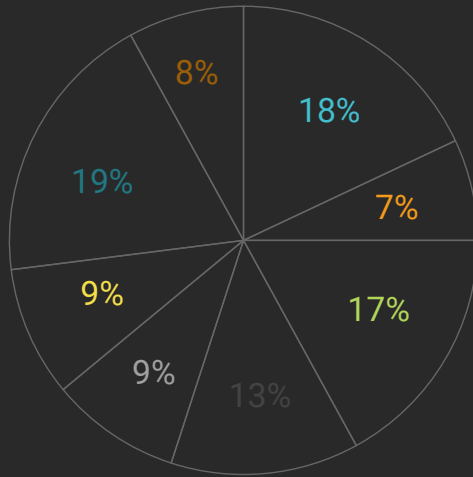
FULL SURVEY RESULTS

STUDY FINDINGS

How Often Do Tech Pros Use APM tools

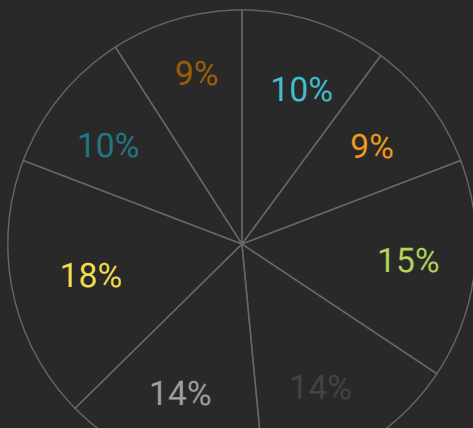


% of Apps on which Tech Pros Are Using SaaS-Based APM Tools



- <5% of apps
- 5-9% of apps
- 10-24% of apps
- 25-49% of apps
- 50-74% of apps
- 75%+ of apps
- Do NOT use SaaS-based APM tools
- Do NOT use any APM tools (SaaS or on-premises)

% of Apps on which Tech Pros Are Using On-Premises APM Tools

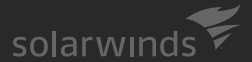


- <5% of apps
- 5-9% of apps
- 10-24% of apps
- 25-49% of apps
- 50-74% of apps
- 75%+ of apps
- Do NOT use SaaS-based APM tools
- Do NOT use any APM tools

Nearly 90% of tech pros surveyed use APM tools, while one-tenth more tech pros use on-premises tools than SaaS-based tools. By role, more app owners and Support team (respectively) use SaaS-based tools on at least half or more of their apps when compared to Developers.

STUDY FINDINGS

APM Tools That Tech Pros Are Using Today



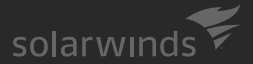
APM Tools Tech Pros are Currently Using to Monitor/Manage Apps and Infrastructure



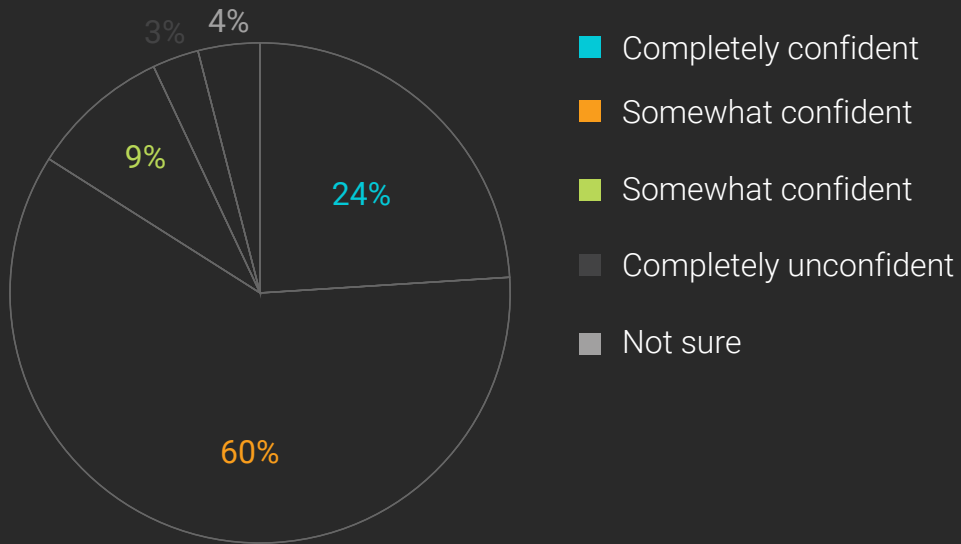
Nearly two-thirds of tech pros surveyed use database monitoring and application monitoring tools (respectively), followed by three-fifths of tech pros using infrastructure monitoring and log management (respectively). By role, App Owners and Developers have the same top four as overall in slightly differing orders (respectively). Support team pros have the same top three as overall (in a differing order) with event management replacing log management as #4.

STUDY FINDINGS

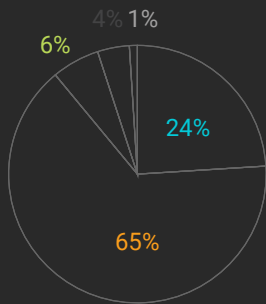
Confidence in Managing App and Infrastructure Performance



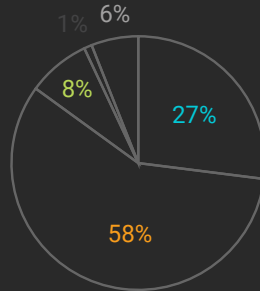
TECH PROS CONFIDENCE – OVERALL



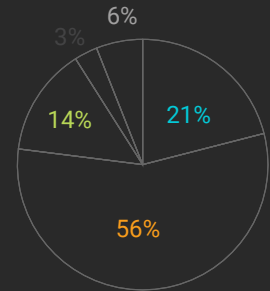
TECH PRO CONFIDENCE – APP OWNERS



TECH PRO CONFIDENCE – DEVELOPERS



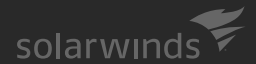
TECH PRO CONFIDENCE – SUPPORT



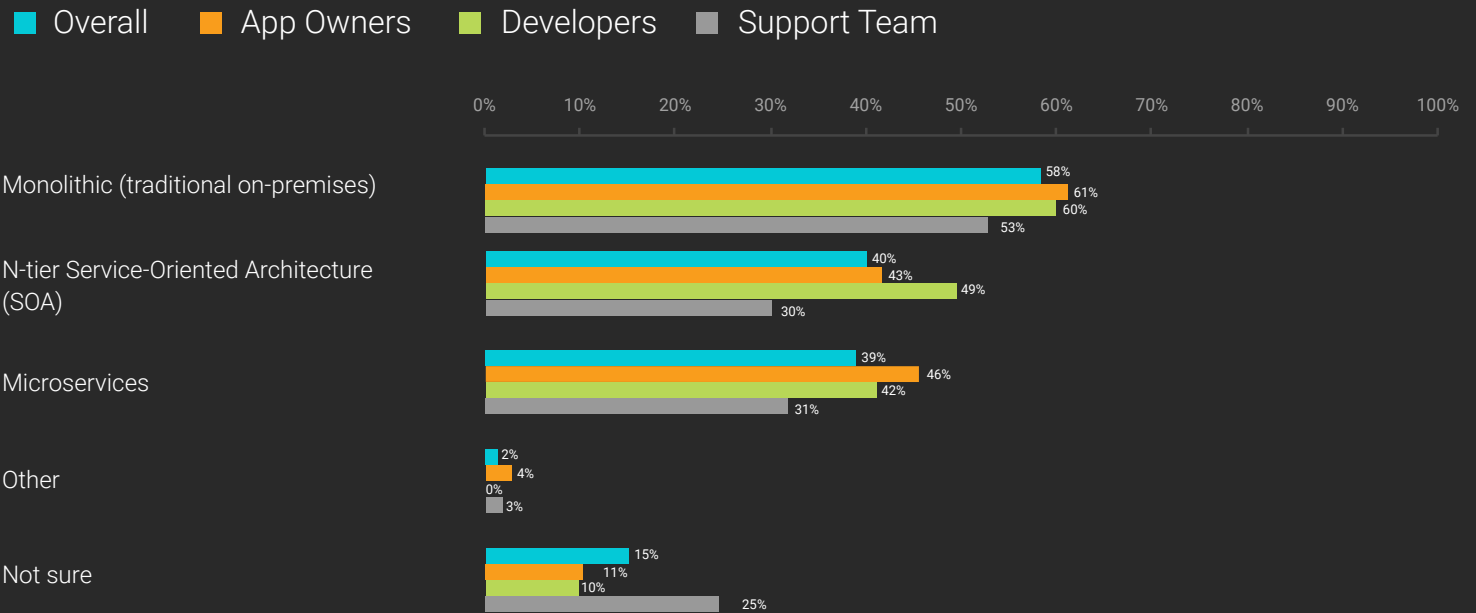
Nearly three-fifths of tech pros surveyed use monolithic app development architecture, followed by two-fifths of tech pros using N-tier SOA and microservices (respectively). By role, a larger percentage of App Owners and Developers (respectively) use monolithic architecture than their Support Team counterparts.

STUDY FINDINGS

App Development Architecture



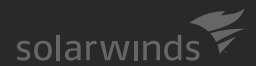
App Development Architecture Currently Used by Tech Pros



Nearly three-fifths of tech pros surveyed use monolithic app development architecture, followed by two-fifths of tech pros using N-tier SOA and microservices (respectively). By role, a larger percentage of app owners and developers (respectively) use monolithic architecture than their Support Team counterparts.

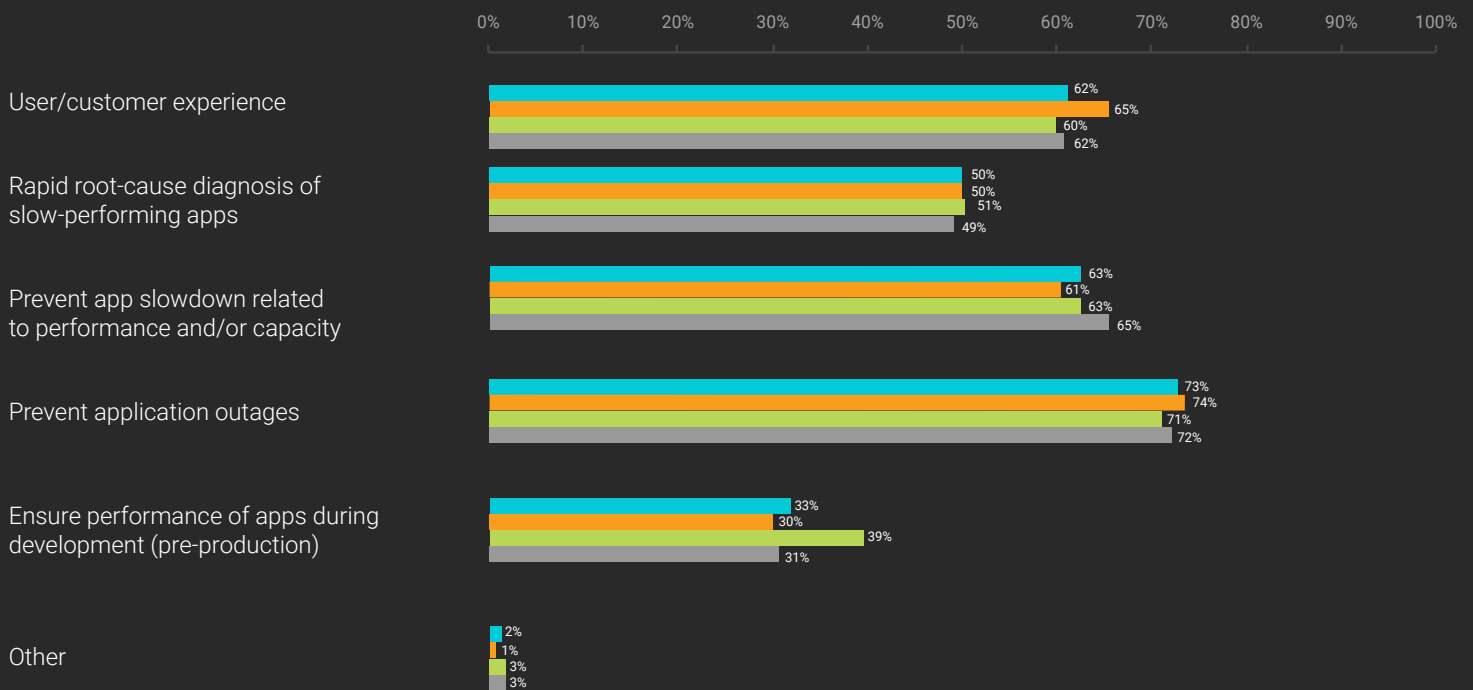
STUDY FINDINGS

Business Insights



Most Important Business Insights Gained from Using APM Tools

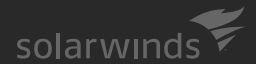
Overall App Owners Developers Support Team



Nearly three-fourths of tech pros surveyed consider preventing application outages as one of their most important business insights gained from using APM tools, followed by over three-fifths of tech pros who consider preventing application slowdown related to performance/capacity and user/customer experience (respectively) as the most important business insights gained. By role, app owners, developers, and support team (respectively) reflect the same top 3 as overall (with App Owners' top three in a slightly differing order).

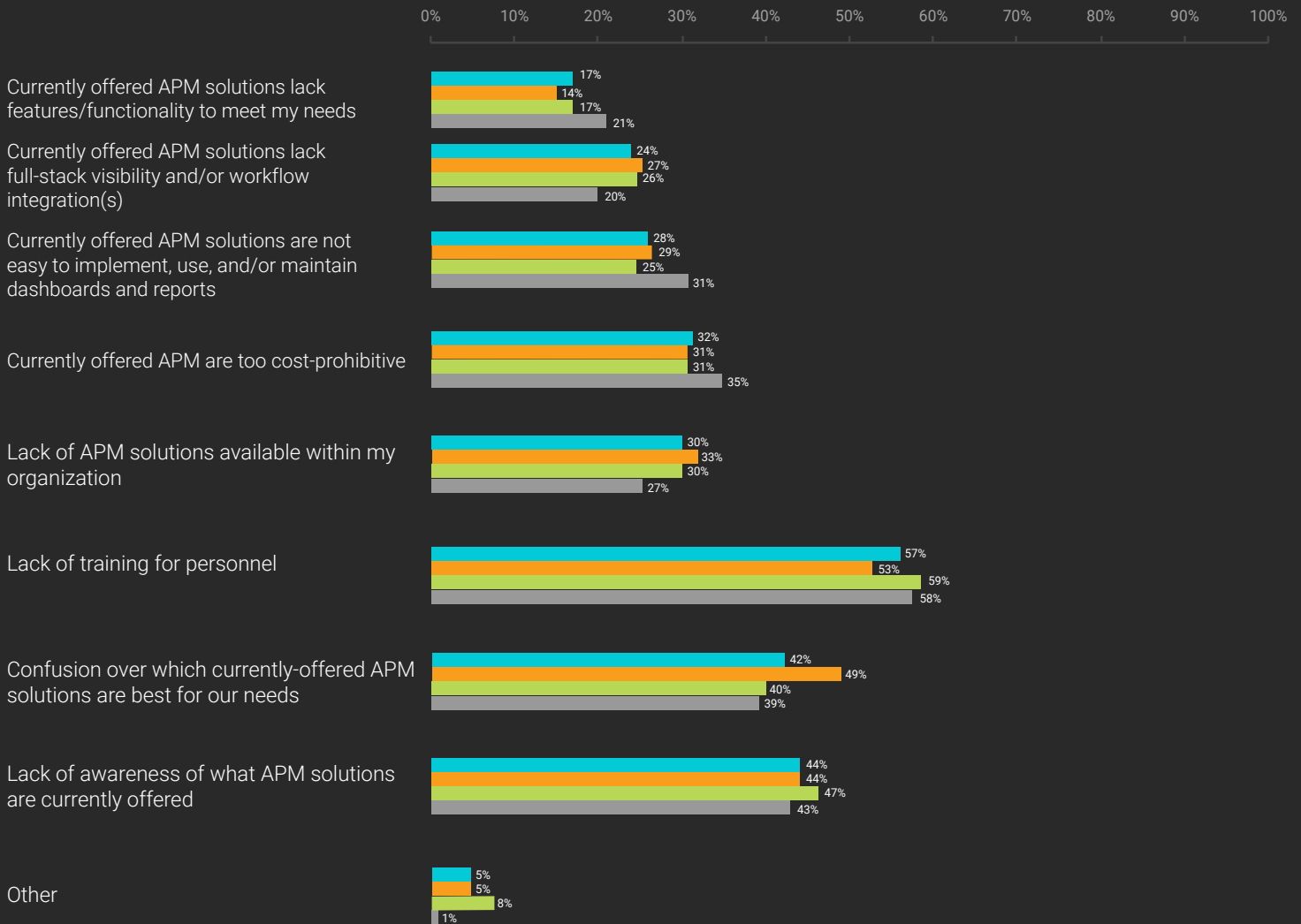
STUDY FINDINGS

Biggest Challenges



Challenges Tech Pros Face When Monitoring/Managing App and Infrastructure Performance

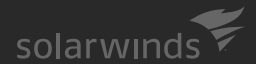
■ Overall
 ■ App Owners
 ■ Developers
 ■ Support Team



Nearly three-fifths of tech pros surveyed consider lack of training for personnel as one of the biggest challenges they face when monitoring/managing application and infrastructure performance in their IT environment, followed by over two-fifths of tech pros facing challenges due to lack of awareness of what APM solutions are currently offered and confusion over which currently-offered APM solutions are best for their needs (respectively). By role, app owners, developers, and support team (respectively) reflect the same top three as overall (with App Owners' top 3 in a slightly differing order).

STUDY FINDINGS

APM-Related Activities



APM-Related Activities Tech Pros are Most Confident Executing Given Their Existing Skillset

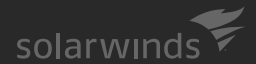
■ Overall
 ■ App Owners
 ■ Developers
 ■ Support Team



Two-fifths of tech pros surveyed are most confident troubleshooting application issues and monitoring application availability and performance (respectively) given their existing skillset, followed by one-third of tech pros confident in collaborating with team members. By role, app owners and support team (respectively) reflect the same top 3 as overall (with support team's top three in a slightly differing order) while Developers reflect the same top two as overall with managing, ensuring and improving end-user performance as their #3.

STUDY FINDINGS

APM-Related Skillsets



APM-Related Skillsets Tech Pros Feel They Need to Develop Given Existing Skillset

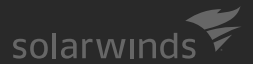
■ Overall
 ■ App Owners
 ■ Developers
 ■ Support Team



One-third of tech pros surveyed feel they need to improve their current skillset/ability to track impact across key business metrics in order to more confidently manage their organization's IT environment, followed by three-tenths of tech pros who feel they need to improve their current skillset/ability to troubleshoot application issues, improve the performance of application code, and manage/ensure/improve end-user performance (respectively). By role, app owners and support team tech pros (respectively) rank needing to improve their skillset in tracking impact across key business metrics much higher (#1) than their developer counterparts (#5).

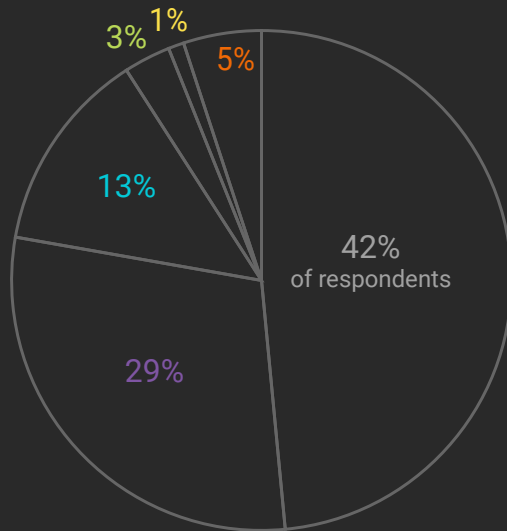
STUDY FINDINGS

Time Spent Optimizing Performance



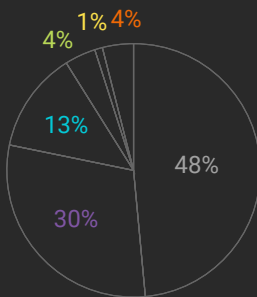
Tech Pro's Time Spent Proactively Optimizing Performance of IT Environment (vs. Reactively Maintaining)

TIME SPENT PROACTIVELY OPTIMIZING (OVERALL)

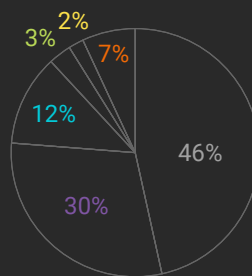


- <10% of my time
- 10-24% of my time
- 25-49% of my time
- 50-74% of my time
- 75% or more of my time
- Not sure

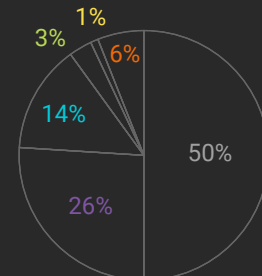
APP OWNERS



DEVELOPERS



SUPPORT TEAM



Nearly half of tech pros surveyed spend less than 10% of their time proactively optimizing the performance of their IT environment, while another three-tenths spend only 10-24% of their time doing the same. By role, app owners, developers, and support team tech pros (respectively) reflect the overall findings.

*For additional information, please contact SolarWinds at 866.530.8100 or email sales@solarwinds.com.
To locate an international reseller near you, visit http://www.solarwinds.com/partners/reseller_locator.aspx*

© 2020 SolarWinds Worldwide, LLC. All rights reserved

The SolarWinds, SolarWinds & Design, Orion, and THWACK trademarks are the exclusive property of SolarWinds Worldwide, LLC or its affiliates, are registered with the U.S. Patent and Trademark Office, and may be registered or pending registration in other countries. All other SolarWinds trademarks, service marks, and logos may be common law marks or are registered or pending registration. All other trademarks mentioned herein are used for identification purposes only and are trademarks of (and may be registered trademarks) of their respective companies.

This document may not be reproduced by any means nor modified, decompiled, disassembled, published or distributed, in whole or in part, or translated to any electronic medium or other means without the prior written consent of SolarWinds. All right, title, and interest in and to the software, services, and documentation are and shall remain the exclusive property of SolarWinds, its affiliates, and/or its respective licensors.

SOLARWINDS DISCLAIMS ALL WARRANTIES, CONDITIONS, OR OTHER TERMS, EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, ON THE DOCUMENTATION, INCLUDING WITHOUT LIMITATION NONINFRINGEMENT, ACCURACY, COMPLETENESS, OR USEFULNESS OF ANY INFORMATION CONTAINED HEREIN. IN NO EVENT SHALL SOLARWINDS, ITS SUPPLIERS, NOR ITS LICENSORS BE LIABLE FOR ANY DAMAGES, WHETHER ARISING IN TORT, CONTRACT OR ANY OTHER LEGAL THEORY, EVEN IF SOLARWINDS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.