

Modern full-stack observability platforms help IT operations teams move from reactive monitoring strategies to become proactive business and developer partners.

From Monitoring to Observability: Transforming IT Operations in the Era of Multicloud, Containers, and DevOps

October 2019

Questions posed by: New Relic

Answers by: Mary Johnston Turner, Research Vice President, Cloud Management

Q. How would you describe the current state of IT operations given the increasing use of containers, DevOps, and multicloud strategies to enable digital innovation and faster time to market?

A. Around the world, enterprises are investing in emerging infrastructure and development technologies to enable faster digital innovation and time to market. Enterprise IT leaders are looking to disrupt traditional business processes and create new ways of engaging with customers and partners. Application development is being accelerated and automated with code updates being introduced weekly, daily, or even hourly. Yet, simultaneously, legacy systems continue to work hand in hand with modern systems and applications.

IDC's 2019 *Multicloud Management Survey* shows that 93% of enterprises are using multicloud strategies and two-thirds are making use of agile DevOps methodologies to some degree. Multicloud architectures mix and match cloud-native services from multiple public clouds with on-premises private clouds and traditional virtual machine (VM) and bare metal infrastructure. Over half of these organizations are beginning to use containers and Kubernetes as part of their multicloud architectures to increase infrastructure utilization and workload portability as well as microservices and automated continuous integration/continuous delivery (CI/CD) pipelines.

Kubernetes provides powerful orchestration technology to quickly deploy containers and enable containerized applications to scale rapidly in response to variations in usage and demand. The resulting IT environments are more complex and change more frequently than ever before. IT operations processes managing these architectures must proactively optimize diverse, distributed multitier application and infrastructure resources in a highly synchronized manner that treats the whole system as a unit rather than as a stack of loosely related individual components.

To maintain end-to-end service-level agreements (SLAs) in this type of dynamic, fast-changing environment, IT operations teams need end-to-end visibility across the stack combined with analytics to drive automated resource allocations and cost management. IT operations teams also need to work together more collaboratively across silos by sharing real-time information about dependencies, performance, and risks.

Q. How are observability platforms helping IT operations teams respond to the challenges posed by traditional monitoring tools?

A. Today's agile and collaborative IT operations teams need to better understand dependencies across application code, automated CI/CD and DevOps-driven tool chains, rapidly changing on-premises infrastructure, complex cloud services, and diverse mobile, web, and Internet of Things (IoT) end-user experiences. They are finding that traditional workflows, change control programs, monitoring techniques, and root cause analytics are too slow and reactive to effectively manage today's rapidly changing environments.

IT operations teams must go beyond just collecting system data and reporting on the state of individual elements. Rather, they need deep insight across the full stack in real time, and they need to be able to link that insight to business outcomes, cost of cloud services, event-driven automation, and end-to-end development workflows.

Traditional IT monitoring tools were optimized to collect data about the state and health of individual systems and applications by collecting data from agents, synthetic traces, or network traffic flows. In today's complex digital business environments, the sources, diversity, and frequency of data can be overwhelming and often lack the context needed for taking action. IT operations team need to be able to tie all this noisy, rapidly changing data back to critical customer experience metrics, business outcomes, security status, and cloud cost management.

Observability platforms are emerging to provide a more unified, artificial intelligence/machine learning (AI/ML)-driven way to filter and correlate data across multiple services and applications and to help IT operations teams quickly understand the business and end-user impact of infrastructure, cloud, container, and application performance problems. Observability platforms allow IT operations teams to construct comprehensive views of the full status and performance of the end-to-end system across applications, on-premises infrastructure, cloud services, containers, Kubernetes, and emerging serverless functions.

Observability platforms also simplify the work related to ingesting a wide variety of performance, cost, and telemetry data generated as logs, time series metrics, and traces, as well as more traditional application performance management (APM) and end-user experience insights. These platforms can integrate and normalize data so that IT operations teams can apply advanced visualizations and analytics to look at correlations across application code and infrastructure operations. Normalized data provides a consistent view of dependencies and business impacts so that IT operations teams can collaborate and more quickly isolate root cause and work proactively with developers and line-of-business (LOB) analysts to find and remediate problems while improving reliability and performance across code, clouds, containers, and legacy systems.

Q. It sounds like IT operations teams need to work more closely with development and LOB teams. Can observability platforms help?

A. Development and LOB teams are driving digital disruption and innovation, but they typically focus on the needs of their specific application and business initiative. In most cases, these teams will make decisions about application design, coding, and infrastructure sourcing based on the needs of their specific use case, without thinking about how to scale and automate the operation of not just one application but hundreds of applications across multiple geographies, regulatory jurisdictions, cloud services, and legacy systems.

Observability platforms can help IT operations teams work more collaboratively with LOB and DevOps teams. Robust programmable reporting, visualization, and analytics, including artificial intelligence and machine learning, can help IT operations teams gain a fuller view of how applications and infrastructure are working together and can put application and infrastructure performance insight into the context of business, cost, and performance segmented by geography, business area, or other custom-defined views. This allows IT operations teams to have a more sophisticated and targeted interaction with developers and LOB teams and to focus efforts on factors that have the greatest impact on the business.

IT operations teams have aspired to work more closely with LOB and developer teams for many years, but the volume and diversity of data that needs to be analyzed have made it difficult to gain a full end-to-end view. Most IT operations administrators and architects are highly skilled in operating environment configuration and deployment as well as software patching, evaluating logs, and deploying agents. However, few would consider themselves data scientists, and even fewer would feel confident in programming powerful big data tools to evaluate and visualize the vast streams of telemetry created in today's modern application environments.

Observability platforms, many of which are deployed as SaaS offerings, provide enterprise IT operations teams with rapid access to highly sophisticated data management, normalization, and analytics capabilities with out-of-the-box and customizable reporting and programmability capabilities. SaaS offerings supply and maintain all required back-end data management, security, scaling, and analytics tooling while allowing IT operations teams to focus on their day jobs.

IT operations teams can rapidly learn how to use programmable observability platforms to tag services, create filters, model correlations, and provide API access to the resulting business, application, and infrastructure insights in ways that can be easily used and shared with development and LOB teams. Rather than standing apart from CI/CD and automated DevOps tools chains, IT operations teams can insert full-stack analytics into the tool chains to help detect changes and automate responses across the testing and deployment life cycle as a full partner with developer and LOB teams.

IT operations teams can rapidly learn how to use programmable observability platforms.

Q. What advice do you have for IT operations teams that want to take advantage of observability platforms across their cloud, container, and DevOps landscapes?

A. The entire IT operations life cycle has radically accelerated in recent years. IT operations teams polled by IDC report that advanced analytics are a top priority. They recognize the need for a new level of data visibility and analytics to optimize IT operations, maintain service-level agreements (SLAs), and control costs across multicloud environments. IT operations teams need to be able to look across infrastructure and applications in the context of business priorities and impact. They need to integrate IT operations workflows and responses across silos.

IDC sees more and more IT operations teams not only investing in new platforms and tools but also participating in collaborative centers of excellence that bring together business, developer, and IT operations organizations to define operational policies related to cloud service usage, application performance service-level objectives, analytics, and automation needed to optimize business applications running in multicloud environments.

IT operations teams are critical to the successful execution of software-enabled business innovation. Digital transformation depends on reliable, cost-effective, and secure infrastructure and applications that can adapt rapidly as new capabilities are deployed and demand for infrastructure resources fluctuates.

Effective IT operations teams will partner with developers and LOB teams and invest in programmable observability tools that provide robust visibility and control on an end-to-end basis while taking advantage of open source communities' shared innovation wherever possible. IT teams should make the effort to engage with appropriate open source communities that sponsor collaboration and best practices in the observability market. Open source communities offer enterprises a way to work with vendor sponsors to define requirements and even codevelop innovative solutions. Many vendors sponsor open source communities where their customers and partners can share reusable software artifacts and best practices.

By investing in modern observability platforms, building collaborative internal communities, and taking advantage of open source-driven innovation, IT operations teams can develop their own software skills and link IT operations workflows and automation more tightly to business and application outcomes.

About the Analyst



Mary Johnston Turner, Research Vice President, Cloud Management

Mary Johnston Turner is Research Vice President for Cloud Management, part of IDC's Infrastructure and Operations Management software research team. Her research focuses on emerging software and solutions for cloud, container and DevOps IT operations, cost optimization, automation, performance, and analytics. She contributes to vendor analysis as well as enterprise IT buyer advisory and custom consulting activities.

MESSAGE FROM THE SPONSOR

About New Relic One

New Relic One, the industry's first programmable observability platform, provides IT Operations teams the ability to see an end to end view of all their performance data in one place to remediate problems while improving reliability and performance across code, clouds cloud, containers and legacy systems. To learn more about how observability platform can accelerate your business, and help you deliver excellent customer experiences, please visit New Relic [here](#).

**IDC Corporate USA**

5 Speen Street
Framingham, MA 01701, USA
T 508.872.8200
F 508.935.4015
Twitter @IDC
idc-insights-community.com
www.idc.com

This publication was produced by IDC Custom Solutions. The opinion, analysis, and research results presented herein are drawn from more detailed research and analysis independently conducted and published by IDC, unless specific vendor sponsorship is noted. IDC Custom Solutions makes IDC content available in a wide range of formats for distribution by various companies. A license to distribute IDC content does not imply endorsement of or opinion about the licensee.

External Publication of IDC Information and Data — Any IDC information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Vice President or Country Manager. A draft of the proposed document should accompany any such request. IDC reserves the right to deny approval of external usage for any reason.

Copyright 2019 IDC. Reproduction without written permission is completely forbidden.