

O11y

Trends Report 2022

11 ways you can use modern observability
to get past the “what” to uncover the “why.”

Meet modern observability

Engineers need access to all of their telemetry data across the entire software lifecycle—paired with industry-leading full stack analysis tools—in order to plan, build, deploy, and run their software faster, more easily, and efficiently.

That's observability, and it's key to helping engineers improve planning cycle times, decrease change failure rates, accelerate release frequency, and reduce mean time to resolution. This positions IT teams and leaders to improve uptime and reliability, drive operational efficiency, and deliver exceptional customer experiences that fuel innovation and growth.

With the complexities and distributed nature of the application and infrastructure landscape, observability has become a critical daily, data-driven practice for modern digital enterprises.





A new way to work in the new digital landscape

Modern observability helps engineers and developers do their best work based on data, not opinions, so they can deliver the great software that powers great digital experiences for their customers, employees, and partners.

Troubleshooting software systems has never been harder, particularly as changes are happening more often and systems are more distributed, complex, and short-lived. This makes observability for the full software environment much more critical. This empowers engineering teams to deliver high-quality software at speed and scale, build a sustainable culture of innovation, optimize investments in cloud and modern tools, and see and improve the real-time performance of their digital business.

Moving from just informed to insightful

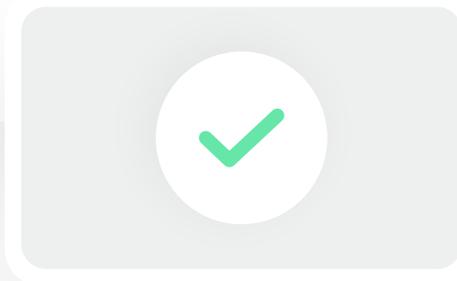
Observability empowers engineers to get past the *what* to uncover the *why* so they can measure, improve, and grow their digital business. This is what modern observability is all about; offering insights beyond simply what is happening to why it is happening, so that engineers and developers can take action to improve and optimize their code.

During the last few years, enterprises have begun shifting from more reactive monitoring approaches to using observability to proactively anticipate and prevent potential problems before they impact customers. Software teams are also using observability to uncover unknowns and spot emerging issues—without the need to set up pre-configured alerts. This is particularly important in modern distributed environments, where it's impossible to predict (or set up alerts for) every potential failure condition. That trend has been gaining traction inside hyper-growth startups and the largest global enterprises alike, and it's rapidly expanding from the early days of application performance monitoring (APM) which is focused on the last of four phases in the software lifecycle, to all of them (in order: plan, build, deploy, and run).



11 ways to seize O11y trends now

In this first-annual *Observability Trends Report*, New Relic provides the top 11 observability trends that will shape the practice of observability in 2022 and beyond. The more observable a system is—and the more complete the data that engineers have from the system—the better, faster, more easily and efficiently they can build, plan, deploy, and run the infrastructure, network, applications, and software that supports it. But first, let's define modern observability so we are building towards a common future:



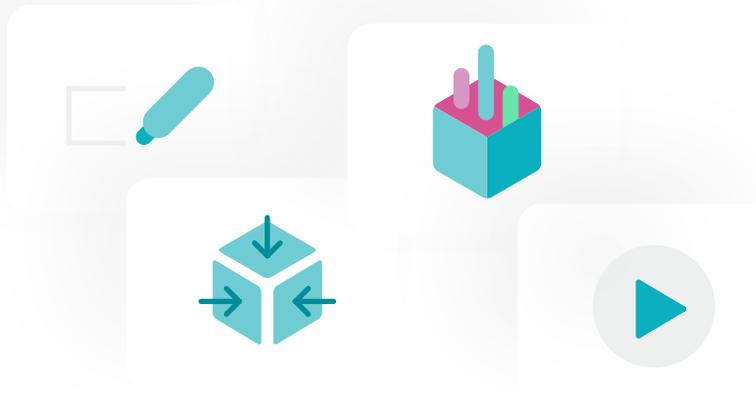
“Modern observability empowers software engineers and developers with a data-driven approach across the entire software lifecycle, bringing all telemetry—events, metrics, logs and traces—into a unified data platform. With powerful full-stack analysis tools that enable them to plan, build, deploy, and run great software, observability delivers improved digital experiences that fuel innovation and growth.”

11 Key Observability Trends for 2022

These are the trends that will set up your engineers and developers to deliver amazing software that powers amazing digital experiences that fuel your organization's growth in 2022—and beyond.



1 Observability becomes mission critical



The success of every modern organization hinges on delivering great digital experiences to employees, customers, and partners. That means that business is powered by the underlying infrastructure, networks, applications, microservices, and software that deliver those experiences. This trend has only been accelerated by the pandemic, which increased reliance on digital experiences for connecting with family, friends, co-workers, teachers, and doctors; shopping—and enjoying entertainment online.

This year's [Observability Forecast](#) (a global survey of nearly 1,300 IT leaders, software engineers, and developers across the Americas, Europe, the Middle East, Africa, and Asia) reinforced the importance of this trend. 90% of respondents said that observability is critical to the success of their business, and 94% state that it's critical to their role. Also, Gartner noted that they expect enterprises to increase their adoption of observability tools by 30% by 2024.

So what's next? More than 80% of C-Suite executives stated in that same [Observability Forecast](#) that they expect to see their observability budgets increase next year, with 20% expecting budgets to increase significantly, further pushing observability to the mainstream.

How to seize the trend

If you aren't already, make observability mission-critical within your organization and prioritize budgets for observability as appropriate to systematically measure, improve, and grow your digital business.

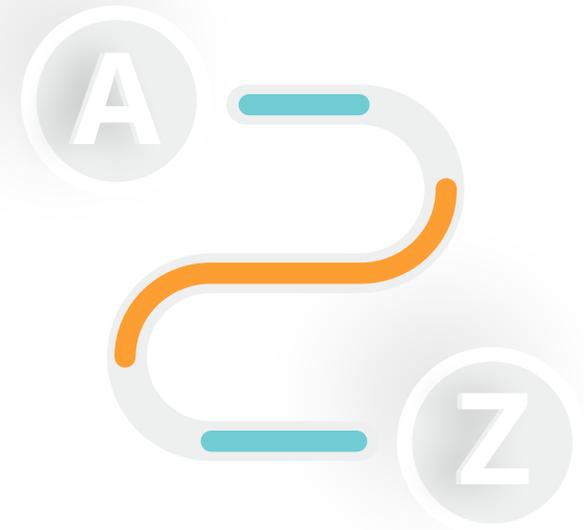


90%

of IT leaders said that observability is critical to the success of their business.



2 Observability extends across the entire software lifecycle



Until now, traditional monitoring tools have mostly been used to troubleshoot and resolve errors in production environments. However, IT leaders, developers, and engineers are realizing that they can apply the same benefits of observability that they achieve when running (or operating) their software as they plan, build, and deploy it. In fact, when used across the entire software lifecycle, observability helps to reduce the challenges when operating those production environments. It enables developers to collaborate on code inside the IDE to improve operational efficiency, and gives them rich analysis tools to quickly uncover the root cause and resolve issues to improve uptime and reliability.

Data from the 2021 [Observability Forecast](#) showed that global IT Decision-Makers (ITDMs) believe in the promise of modern observability. In fact, 91% see observability as critical to every stage of the software lifecycle. They place especially high importance for planning and—as you might expect given the roots of application performance monitoring (APM)—for operations. These IT leaders see a breadth of observability benefits, ranging from improved development speed, quality, and agility, to cost effectiveness, improved user experiences, and better engineer morale.



How to seize the trend

As you enter 2022, enable more of your engineers to use observability across the entire software lifecycle to plan, build, deploy, and run the great software that delivers great digital experiences. Your engineering teams will be able to do their best work based on data, not opinions. You can also better position them to achieve business objectives, from driving digital transformation to optimizing cloud usage, accelerating speed to market—and delivering great customer experiences that fuel innovation and growth.

3 Unified data-driven strategies overtake siloed, multi-tool approaches



The coming year and beyond will see data-driven observability gain further momentum. With end-to-end visibility, engineers and developers will have the deep insights they need to make informed business decisions based on data, not opinions, so they can do their jobs better, faster, more easily and efficiently.

This modern take on observability is in contrast to traditional monitoring methods and tools which employ multiple monitoring experiences, forcing users to toggle between a variety of stand-alone applications on top of purpose-built databases. This creates silos of data that inhibit true end-to-end, enterprise-wide data discovery and observability. The result is frustration and extra, time-wasting toil, that keeps engineers from doing the work they love: building and delivering amazing software.

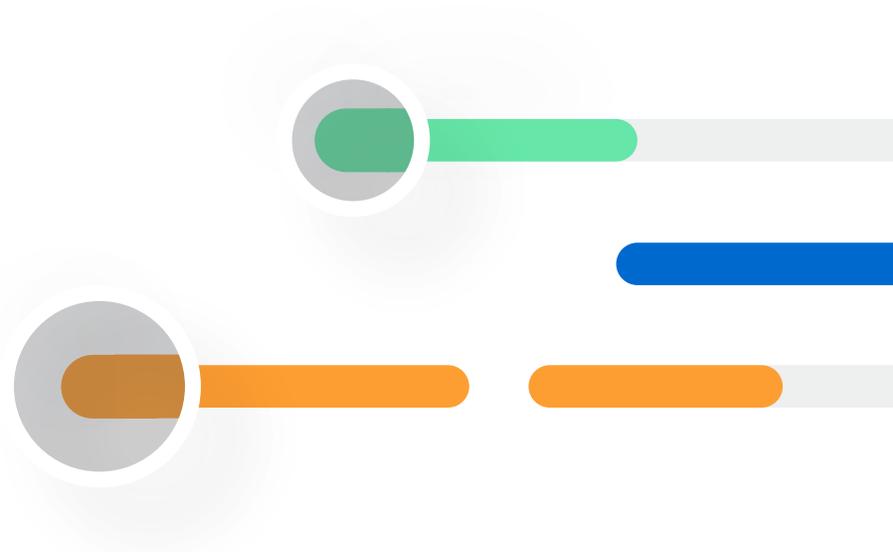
How to seize the trend

It's time to recognize that traditional monitoring tools fall short for monitoring siloed and complex microservice-based data. Empower your engineers with modern observability for a more comprehensive, data-driven approach. They'll see all of their data when they need it, quickly capture insights to make critical business decisions, and then take action.



4 Data democratization ushers in observability for all

The explosion of big data reshaped the needs of engineers and developers, along with what they expect from their tools. Yet with the expanding number of people needing data across the organization, enterprises are facing an entirely new set of challenges to get the right data in the right hands. For example, the only way for engineers and developers to optimize an application's behavior or troubleshoot a "needle-in-the-haystack" unknown failure is to instrument and collect all the data about the environment at full fidelity and without sampling. But until recently, that's been near impossible because it's been too cumbersome and/or too expensive to instrument the full estate.



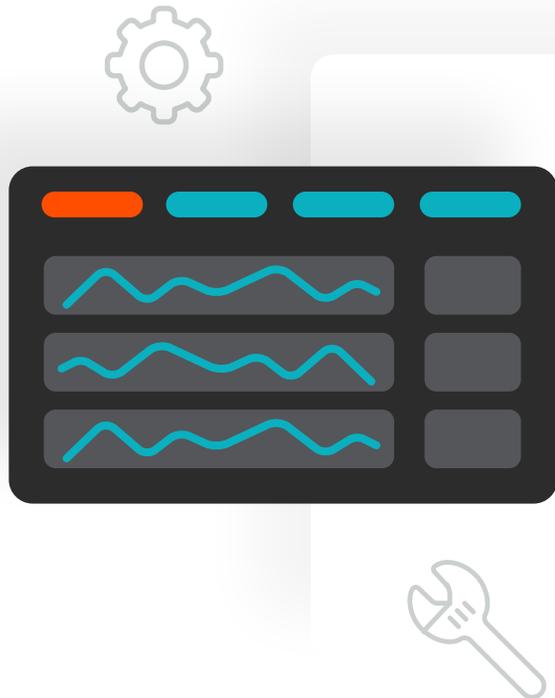
How to seize the trend

With changes in the observability landscape and new pricing approaches, IT leaders are now positioned to implement a strategy that gives everyone in their organization the benefits of observability. With the economics in your favor you can finally get all of the right data into all of the right hands so they can make better, data-driven decisions to do their jobs faster, and better.



IT Leaders

5 Tool consolidation improves efficiency and cost

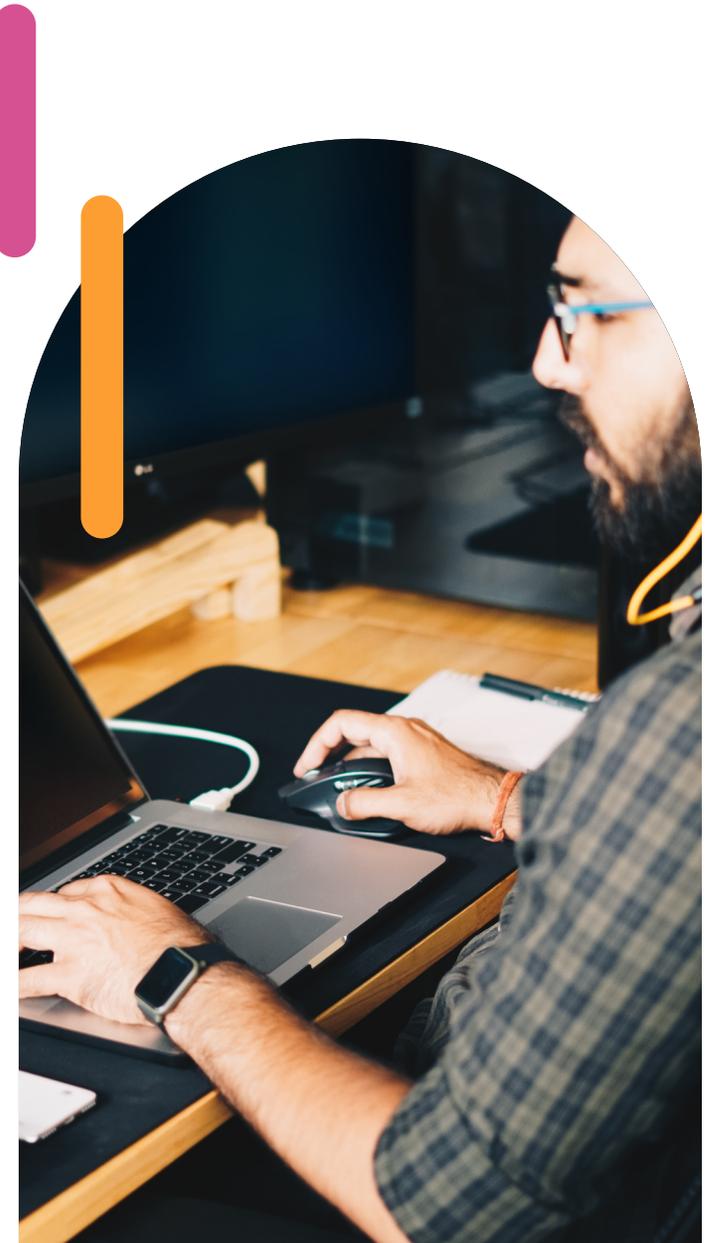


To keep up with IT complexity, engineering teams have had to adopt an overwhelming amount of tools—both proprietary and open source—at a rapid pace. The average organization uses dozens of tools across distributed teams to monitor different parts of their tech stack. Case in point, the [Observability Forecast](#) revealed that 72% of respondents have to toggle between at least two tools, and 13% use ten or more different tools to monitor the health of their systems. Even then, 23% of respondents said that they cannot gain end-to-end observability at all.

Instead of helping teams innovate faster and improve mean time to detect (MTTD) and mean time to resolution (MTTR), tool sprawl has generated an onslaught of new problems. These include requiring engineers to spend an unreasonable amount of time stitching together siloed data and having to switch context between a patchwork of insufficient analysis tools—and even then discovering blind spots.

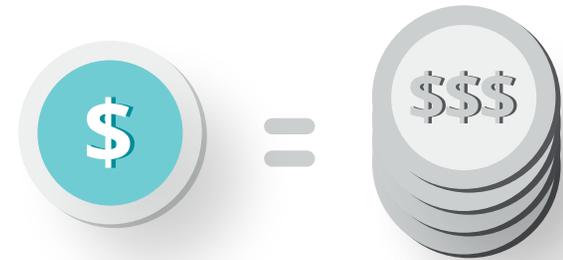
How to seize the trend

Because observability requires data to be ingested, analyzed, and cross-correlated all in one place, the natural next step for engineering leaders is to assess and rethink their existing toolset. Tool consolidation will gain momentum in 2022 as it enables software teams to save time, increase productivity and efficiency, and lower costs. Look at how you can direct your budget to fewer, more effective observability solutions to help your engineers get unified visibility across the tech stack.



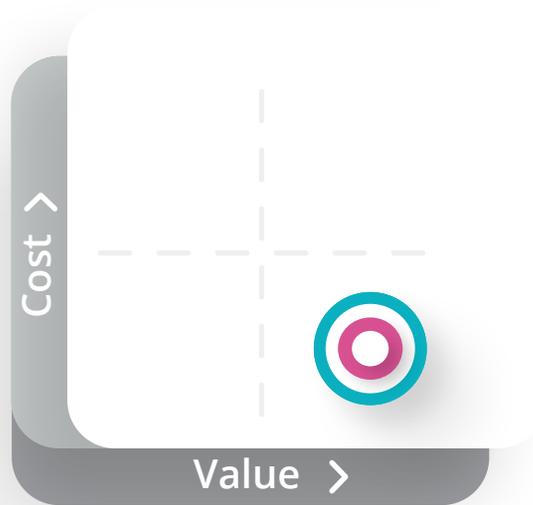
6 Usage-based pricing tips the scales in the customer's favor

The pricing structures of many monitoring tools actually discourage IT leaders and engineers and developers from ingesting all of their data because their pricing is confusing, difficult to predict and scale, and generally just too expensive. As a result, organizations compromise on visibility. In fact, according to the [Observability Forecast](#), 60% of global respondents still monitor telemetry data at the application level only, leaving massive amounts of data unmonitored in their software stack.



60%

of global respondents still monitor telemetry data at the application level only



The move to modern observability and increasing its adoption includes shifting from legacy subscriptions to usage-based consumption and pricing models that align with customer success. With modern consumption-based pricing, organizations get full visibility into all of their telemetry, and only pay for what they use. With digital businesses relying on increasingly complex software systems, IT leaders will start demanding this pricing model from their observability vendors because it's easy to understand, predict, and scale. Plus, usage-based pricing will be given preference as it promises to remove upfront guesswork on usage and the shelfware frustrations and overage penalties that often follow.

How to seize the trend

If you aren't already familiar with available usage-based pricing for software like that from Amazon Web Services, Snowflake, and New Relic, take the opportunity to explore it. Learn how you might be able to achieve even more value while making your observability platform (and your organization's data) available to more engineers and developers across the software lifecycle. It's a great first step to seize all of the first six trends of this Observability Trends report.

7 Observability shifts from "it's complicated" to an "open" relationship



Having a variety of tools to choose from creates challenges in telemetry data collection. Organizations find themselves managing multiple libraries for logging, metrics, and traces, with each vendor having its own APIs, SDKs, agents, and collectors. An open source, community-driven approach to observability will gain steam in 2022 to remove unnecessary complications by tapping into the latest advancements in observability practice.

With continued innovation and investment, observability will work out-of-the-box by default and use open standards to make it even more accessible to all. In fact, Gartner predicts that by 2025, 70% of new cloud-native application monitoring will use open source instrumentation rather than vendor-specific agents for improved interoperability. Open source standards such as OpenTelemetry and OpenMetrics are converging in the industry, preventing vendor lock-in and bringing us a step closer to unified observability.

How to seize the trend

Encourage your engineering teams to tap into open source technologies like OpenTelemetry to advance their observability practice and capabilities.



8 The rising tide of Kubernetes and containers floats observability boats too

With the [Observability Forecast](#) highlighting that 88% of IT decision makers are exploring Kubernetes, with 25% of respondents conducting research, 25% evaluating, 29% in development, and 10% in production, the popularity of Kubernetes continues to explode. This growth also brings challenges and gaps from the necessary cultural shift to technology trends and advancements. As the next wave of microservices and more stateful applications are deployed on Kubernetes and container-based platforms, there is a need for more visibility into operations, as well as tools for self-defense and self-healing against malicious applications (both intentional and inadvertent).





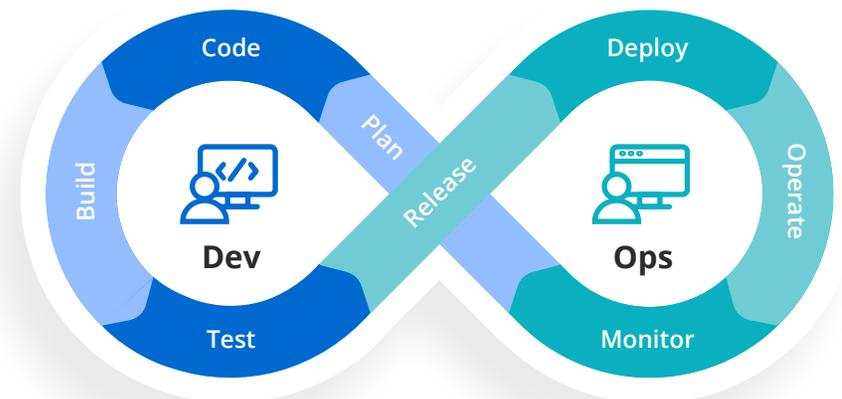
Looking forward, as teams use more microservices and serverless architectures, they will reduce the amount of interaction with the underlying infrastructure. This allows more focus on the application and other business needs, and will lead to an improved developer experience in 2022.

How to seize the trend

It's no secret that most Kubernetes monitoring solutions, including amazing tools like Prometheus, are designed primarily for operations teams, which made sense in the early days. However, that's not the case anymore. When your team is looking for an actionable observability platform, make sure they request tools that are purpose-built for developers to identify performance bottlenecks faster with code-level insights. This will help your engineering teams to seamlessly drill down into both application-level and infrastructure-level behavior, so they can correlate the impact that application changes are having on the infrastructure and vice versa.

9 Increasing adoption of a DevOps mindset for observability

By adopting a DevOps mindset and embracing agile rather than waterfall development, engineering teams will be able to shift from a culture of blame and finger-pointing to one of empathy and ongoing improvement. This will position engineers and developers to release better software, faster, and meet the growing expectations of their organizations. Just as digital companies have updated the way they plan, build, deploy, and operate software, they will now look to modernize their approach to monitoring that software with observability tools that benefit not only the DevOps team, but the entire organization.



How to seize the trend

With increasing pressure mounting on engineering teams across industries, observability is key to delivering a positive user experience in the face of ever-expanding software applications. Adopting a DevOps culture will enable your teams to cut through the noise and focus on the performance issues that have the biggest impact on your business, customers, and employees.



10 Observability cultivates collaboration among engineering teams



Observability is quickly becoming the industry gold standard to help software engineering teams and developers through the inevitable times when something goes wrong in the continuous integration/continuous deployment (CI/CD) pipeline. The reasons are clear: When the CI/CD pipeline is observable, engineering teams have more confidence in their code, and they can move faster to implement fixes when needed.

And when observability platforms enable collaboration on code directly within the developer environment (IDE), asking questions for better understanding, highlighting potential errors, and partnering on code becomes second nature—as does delivering even better outcomes as a matter of engineering practice.

Looking forward, modern observability will enable and cultivate a culture of collaboration across software engineering and development disciplines by allowing teams to better collaborate. The result will be stronger teams, procedures, and alert systems that improve the way engineers handle monitoring and incident detection throughout the software lifecycle.

How to seize the trend

As you build your observability team in today's distributed workplace, make sure all your SREs and developers have access to your observability tools. This will enable all your engineers around the world to have access to real-time data for decision making, and make cross-functional collaboration more efficient and easier.



11 Observability continues to improve service and reliability



As organizations work in a world that increasingly relies more on digital services—due to COVID-19 or otherwise—the data from these applications can give us greater detail into real-world performance. For example, an increase in web traffic or application demand will usually be linked to higher levels of transactions and business. This increase can be seen and tracked across application components, but it can also be seen in revenue too. That’s why observability data has a greater purpose beyond just showing us how well our app components are performing over time. Instead, moving forward this data will be used to improve both the ability to handle risks and show where business results are affected.



How to seize the trend

It's far more common today for your engineering teams to tackle service and reliability issues on a regular basis. When planning for next year's IT infrastructure, think about observability from a reliability perspective. This will ensure that your applications are better able to handle issues like a cloud outage or service failure.



To reap the benefits of modern observability, you can expect organizations to double down on the following 11 Observability Trends for 2022 and beyond:

1. Observability becomes mission critical
2. Observability extends across the entire software lifecycle
3. Unified data-driven strategies overtake siloed, multi-tool approaches
4. Data democratization ushers in observability for all
5. Tool consolidation improves efficiency and cost
6. Usage-based pricing tips the scales in the customer's favor
7. Observability shifts from "it's complicated" to an "open" relationship
8. The rising tide of Kubernetes and containers floats observability boats too
9. Increasing adoption of a DevOps mindset for observability
10. Observability cultivates collaboration among engineering teams
11. Observability continues to improve service and reliability

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