

AppDynamics



Microsoft Azure

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The Hybrid Cloud Application Performance Playbook

The keys to quantifiable IT business value

The application is the business

In the digital age, IT provides more business value to the organization than ever. But how do you quantify it? Proving the business value of IT (the BVIT) seems like a no-brainer as a measurement to establish budgets, priorities, and gauge IT performance. But it can be surprisingly elusive, especially if your data is coming from a number of sources.

BVIT is based on so many ephemeral criteria that it's not surprising that only 7% of organizations can quantify it.¹ How do you map and quantify every user transaction? The irony is that IT is at the center of the development, management, monitoring, and optimization of new applications—and applications are how business gets done.

Application performance is the business.

Applications are how customers interact, see the brand, and pay for products. In recent years, design-led companies like Netflix, Uber, Zappos, and others have seriously upped the performance ante. They've pioneered processes, cultures, and technology that allow them to iterate very quickly and respond to business needs from an IT standpoint. These constant updates have led consumers to expect increasingly astounding experiences at the tap of a button.

And if they don't get them, the business consequences are easy to quantify:

- 53% of users abandon an app that takes longer than three seconds to load²
- 86% of users delete apps that perform poorly³
- 66% of consumers claim they would avoid trying a brand known for delivering poor digital experiences⁴

User experience is arguably the most important element of BVIT—and it's all on IT. When systems go down, each individual event has the potential to cost companies hundreds of thousands of dollars in lost revenue,⁵ with some costing millions of dollars and seriously damaging brand reputation.⁶

So don't let anyone tell you that application performance monitoring (APM) isn't a critical business issue. It is. As the planet's fastest growing provider of APM, we at AppDynamics have some ideas on that. In this e-book, we'll share with you some of what we've learned over thousands of deployments about getting clear visibility and mapping of performance throughout the business.

¹"CIOs Must Demonstrate the Business Value of IT to Broaden IT's Role in the Business," Sanil Solanki, Cesar Lozada, Srinath Sampath, James Anderson, Gartner Research, Nov. 15, 2018.

²"Find Out How You Stack Up to New Industry Benchmarks for Mobile Page Speed," Daniel An, Think with Google, Feb. 2018.

³"The App Attention Span," AppDynamics, 2014.

⁴"The App Attention Index 2019: The Era of the Digital Reflex," AppDynamics, Oct. 2019.

⁵"The Rise of AIOps: How Data, Machine Learning, and AI Will Transform Performance Monitoring," Sonja Jacob, AppDynamics, Dec. 17, 2018.

⁶"Lululemon's Website Is Crashing as Furious Customers Try to Shop Black Friday Sales," Kate Taylor, Business Insider, Nov. 22, 2018.

Gain a platform for better visibility: Six steps to a well-monitored migration

If you're migrating to Microsoft Azure, include these steps to ensure an on-time move that delivers on objectives and is viewed as a success throughout your organization.

Step 1: Understand architecture dependencies

Gain visibility and insights into both traditional workloads and also cloud-native hosting, container, microservices, and serverless platforms on Azure to rapidly troubleshoot bottlenecks and optimize the performance of Azure applications.

Step 2: Increase infrastructure visibility

Establish baselines for application workloads and throughput before migration to assist in the initial sizing, including application and workload infrastructure consumption (CPU%, RAM, network, storage); peaks knowledge for dynamic elasticity and right-size planning; and resource utilization.

Step 3: Establish application key performance indicators (KPIs)

Demonstrate to migration and business stakeholders that applications are performing equally or better in the Azure cloud, and prove that user experience has not been negatively impacted.

Step 4: Understand the end-user experience

Preview the end-user experience to establish how business transactions are performing and use the Transaction Score dashboard from AppDynamics to pinpoint and remediate slow-performing business transactions.

Step 5: Prove business value

This is where the BVIT rubber hits the road. Use APM to compare pre- and post-move baselines from a technical and business perspective to support ongoing optimization and improve BVIT.

Step 6: Support people and process improvements

To avoid siloed monitoring from multiple technologies and architectures (hybrid, cloud native, and others), use AppDynamics to help reorientate teams around an application-centric approach for:

- Seamless collaboration among IT development, operations, and business teams during an application incident, with real-time insights.
- Real-time application data to plan release and change processes.
- Increased understanding of application usage patterns and user journeys to better plan release and change cycles.
- Real-time insights to support Scrum and other agile software development methodologies.

This final step ensures you have a single unified platform that supports workload monitoring between public and private cloud, breaking down monitoring silos between environments. Regardless of where your applications run, ensure you use a single unified monitoring solution like AppDynamics that supports APIs for automation.

Application Performance Monitoring (APM): Where BVIT comes to life

Your path to reliable, high-performing, low-latency applications depends on your monitoring approach. It's critical to get it right.

Many organizations leverage and juggle numerous siloed monitoring tools, each supporting just a fraction of their overall architecture. This makes it difficult to pinpoint root causes and correlate issues to the user's experience. An APM solution provides cross-tier, end-to-end discovery and visibility to establish direct correlation between technical issues and business performance. At last, see how application performance impacts end users and the business—no matter what cloud or hybrid cloud they use.

Cross-tier visibility plays a vital role in monitoring modern, highly-distributed microservice and serverless architectures. Understanding and monitoring how various microservice and serverless functions interact and impact the overall user experience is critical. The end-to-end transparency provided by cross-tier visibility and the correlation with associated historical performance and health data dramatically simplify the monitoring of these inherently complex ecosystems.

So, what do you get from APM?



Proactively discover and map every user journey in web, mobile, and IoT-based applications or in business processes, via business transactions.

Monitoring for hybrid applications

It's essential that you understand how established technologies and next-generation architectures are functioning across a hybrid landscape. For those running SAP, AppDynamics highlights which applications and services depend on SAP and how everything is connected across on-premises, cloud, and/or hybrid environments.

If your organization does run SAP or other business-critical, revenue-producing applications, the siloing of information, processes, tooling, and personnel can make things especially challenging. SAP applications and data are complex and proprietary, making it more difficult to diagnose issues. AppDynamics provides the industry's only ABAP code-level visibility to monitor the performance of SAP and quickly understand the root causes of any bottlenecks.

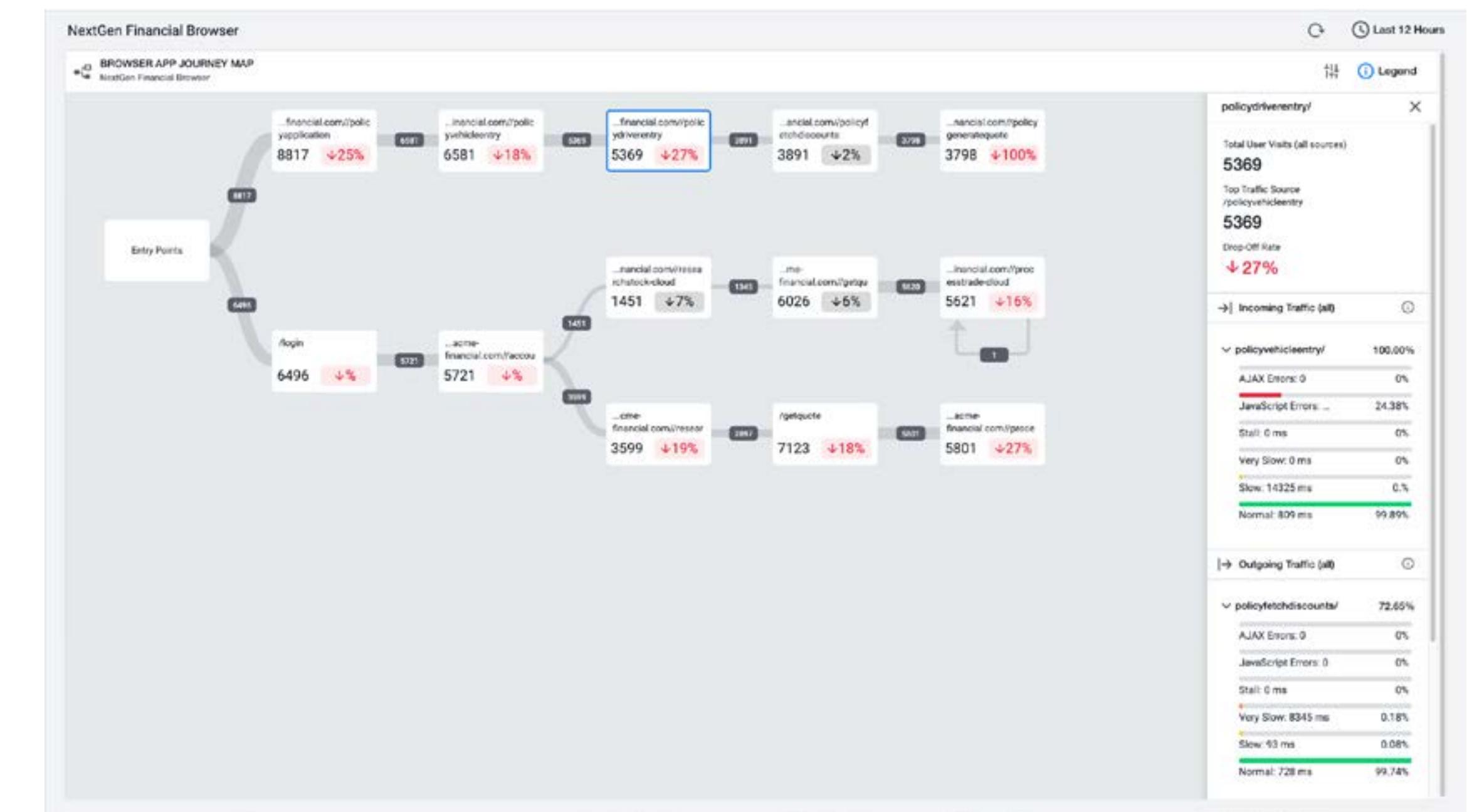
You'll also realize full end-to-end visibility into container and serverless-based components—everything from browser-based applications and end-user devices through traditional infrastructure. Alongside Kubernetes cluster monitoring, you can gain deep diagnostic details, such as full call stacks and granular method-level code details and database queries.



Validation of the end-user experience

AppDynamics tracks each step in the end-to-end user experience—what we refer to as business transactions—that span from user interfaces, such as browsers and mobile apps, through various back ends and databases. When the user experience starts to degrade, all the essential details, such as metrics, crashes, network requests, and page load details are available to solve issues and improve user satisfaction quickly.

We compile data across monitoring platforms into a single source of information. This frees your IT team for other tasks by reducing the time they spend manually searching through event logs or building synthetic monitors.



AppDynamics tracks the end-to-end user experience through the Business Transactions view.

Optimized operations: How to keep an eye on everything

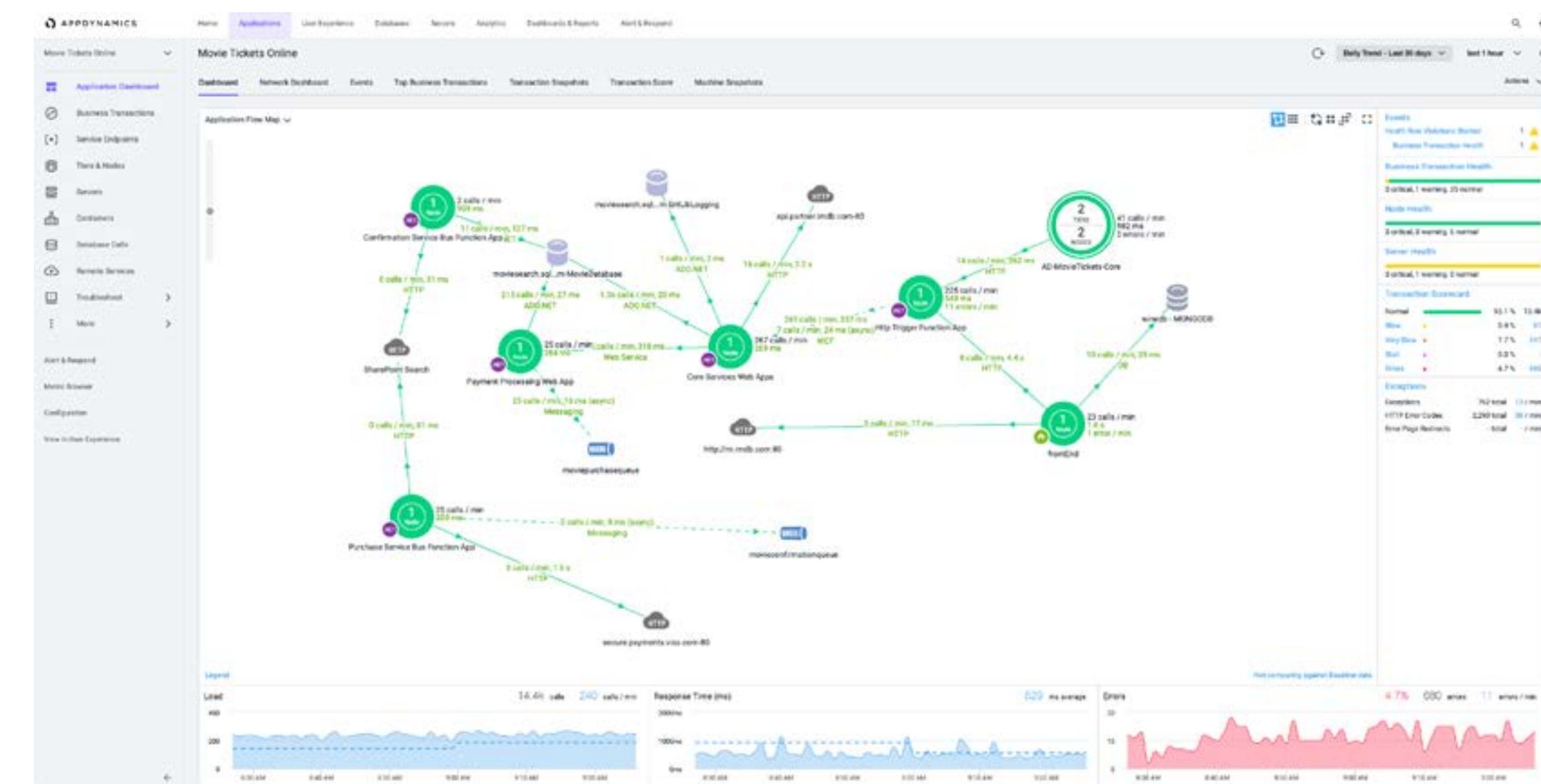
The keys to managing and optimizing the performance of your applications are application mapping, dynamic baselining, and code-level diagnostics. AppDynamics provides them all. This enables you to optimize customer experiences with end-to-end visibility and management of even the most complex and distributed applications. With that insight, you can understand and optimize your applications.

AppDynamics automatically visualizes your applications—producing flow maps that reveal interdependencies—while tracing key business transactions based on production application behavior. It dynamically baselines performance and automatically discovers what's "normal," so you get alerts only when thresholds are exceeded. Its flexible alert system can also be integrated with third-party solutions like ServiceNow, PagerDuty, Slack, Jira, and Microsoft Teams.

With AppDynamics, you can effectively isolate and resolve production application performance issues by monitoring every line of code while only activating deep diagnostic capabilities when performance wavers. This helps lower overhead so you can watch everything in production without missing issues or wasting time.

Right out of the box, AppDynamics can support any compute platform with its agents, including Azure Virtual Machines, Azure App Services, Azure Kubernetes Services, Azure Container Instances, Azure Functions, and Azure Cloud Services. Every Azure metric is supported by our platform. That means that virtually every service on Azure is supported through AppDynamics Integration with Azure Monitor Metrics. And, if it's a dependency in an application, it'll show up on your flow map.

That's how you transform complexity into extreme manageability with an intuitive UI that makes it easy to deploy and configure—whether in public, private, or hybrid cloud environments. And as your company's needs grow, it's easy to scale with streamlined maintenance and role-based access control and governance.

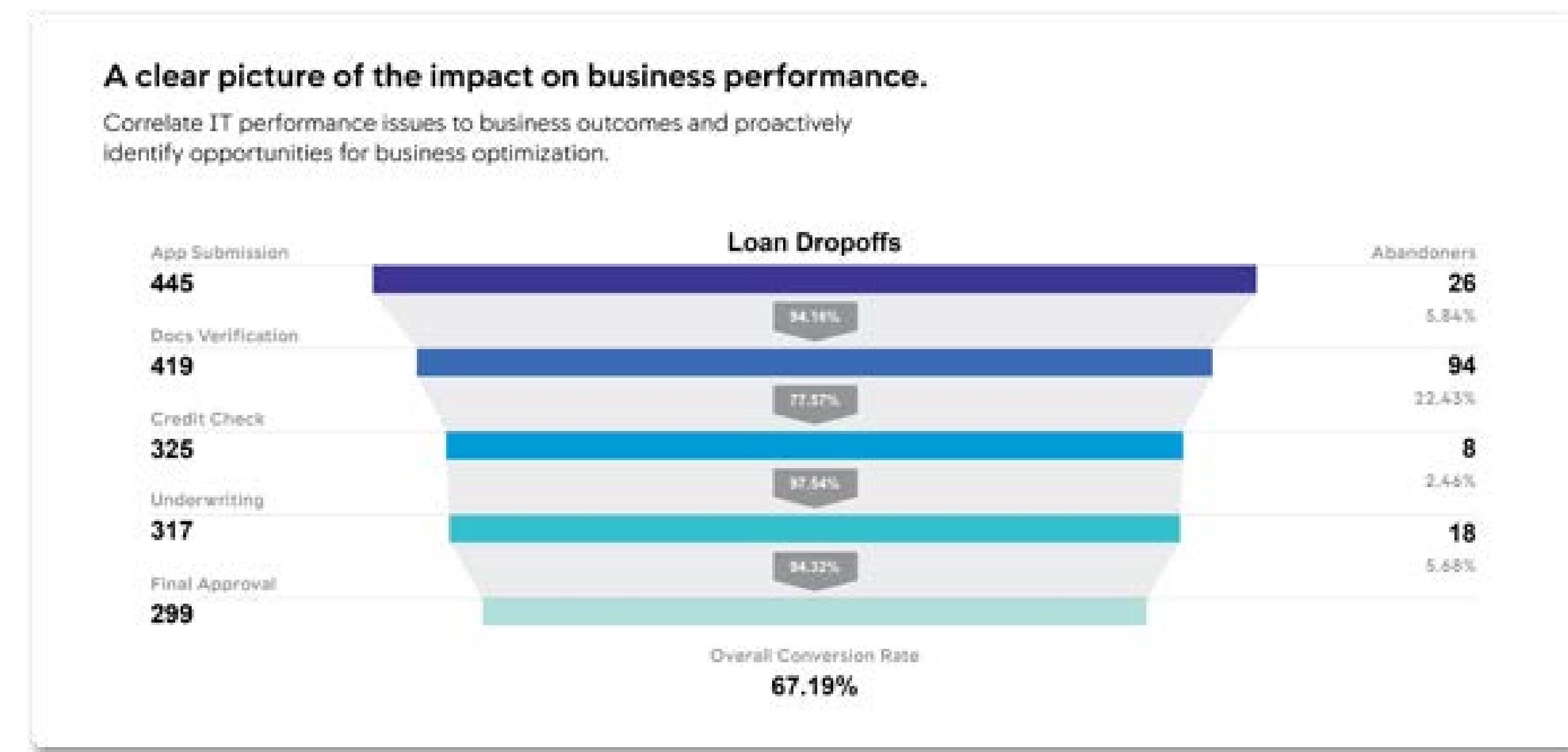


AppDynamics delivers automatic, at-a-glance baselining and anomaly detection.

Better understanding of business value

To verify whether or not your applications are meeting their goals, AppDynamics enables you to define the business value of an application and identify the key metrics for value fulfillment. For example, you can baseline the sales and average order size of your e-commerce site. If these metrics dip below normal, AppDynamics will correlate the drop with potential application performance issues and help you determine what actions you need to take to fix them.

AppDynamics also leverages serverless APM to give you visibility into the performance of your application's components that run as functions on serverless compute environments. This provides an end-to-end view of applications through business transaction correlation.



Every step of the experience has an effect on the next, and application latency can unnecessarily add to drop-offs, as seen in this example of a lending organization. AppDynamics quantifiably connects business results to IT performance, ensuring that every part of even the most complex, multi-cloud environments is highly visible, optimized, and primed to drive growth.

Take the fast track to value

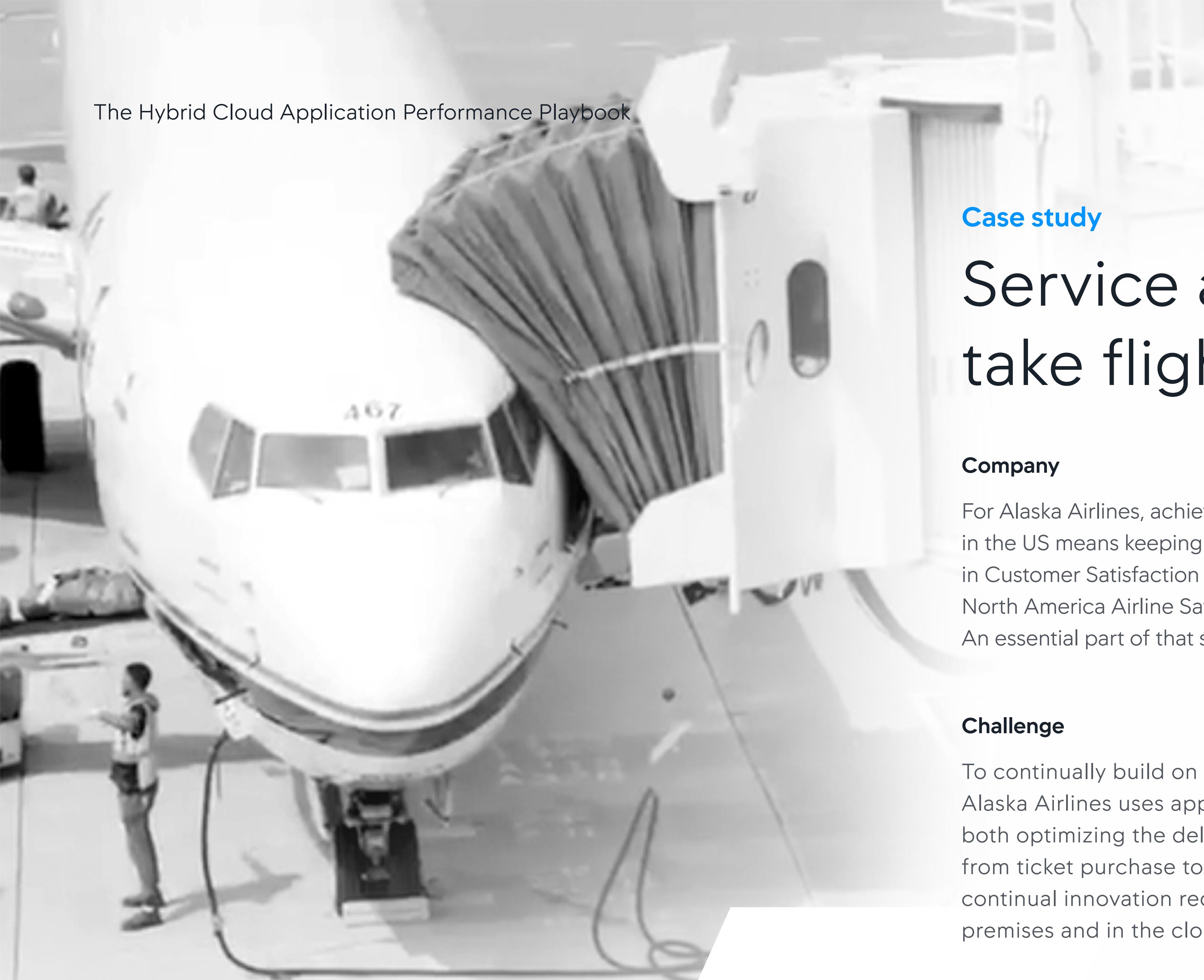
Using a modern SaaS solution gets you up and running in less time. It supports more rapid deployment and simplified management of cloud-based apps. That's important at a time when 70% of CIOs are employing a "cloud-first" IT strategy, and enterprises are increasingly shifting to the cloud to improve scalability and lower costs. This year, two-thirds of IT spending will be for cloud-based offerings, and even now, one in four deployments is delivered via the public cloud.⁷

No matter which cloud provider you use, whether public or private, AppDynamics lets you see clearly how every application component, line of code, and important infrastructure resource is performing. This includes Docker containers, Kubernetes, every microservice, and key cloud-native technologies from Amazon Web Services, Microsoft Azure, Red Hat OpenShift, and Pivotal Cloud Foundry.



Track cloud migration success with business IQ dashboard.

⁷"Train to Accelerate Your Cloud Strategy," sponsored by Amazon Web Services, Cushing Anderson, Oct. 2017.



Case study

Service and innovation take flight: Alaska Airlines

Company

For Alaska Airlines, achieving and maintaining its rank of fifth-largest commercial airline in the US means keeping customers front and center. They have been ranked "Highest in Customer Satisfaction Among Traditional Carriers in North America" in the J.D. Power North America Airline Satisfaction Study for 12 consecutive years (from 2008 to 2019). An essential part of that service is the Alaska Airlines digital experience.

Challenge

To continually build on its impeccable customer service and satisfaction record, Alaska Airlines uses application performance monitoring. This is a critical tool for both optimizing the delivery of their product and ensuring customer delight—from ticket purchase to the day of travel and beyond. Inevitably, however, that continual innovation requires more systems, applications, and platforms—both on-premises and in the cloud—which can increase the risk of slowdowns and outages.

With its shift to a cloud-first strategy, Alaska Airlines was faced with having to build cloud-native apps, re-architect others, and manage different workloads across a hybrid environment.

Solution

Alaska Airlines turned to AppDynamics for application performance management, infrastructure monitoring and visibility, and end-user monitoring. This gave them tools for live monitoring of the airline's applications across the entire infrastructure and technology stack, including guest-service applications such as travel searches, ticket purchasing, and boarding passes, plus applications leveraged by pilots and flight attendants for flight mapping, safety, and customer service. All these functions depend on AppDynamics to ensure the business runs smoothly and the airline continues to deliver exceptional user experiences.

Results

In the first year after deploying AppDynamics, Alaska Airlines reduced the number of Level 1 and 2 outages significantly, and when they did happen, resolution times plummeted. They also achieved the following benefits:

- Sixty-percent reduction in outages and other issues.
- Reduction of mean-time-to-detection (MTTR) from hours to less than 10 minutes.
- Creation of self-service access to see how everything impacts the big picture across the environment.

From 2017 to 2018, through our partnership with AppDynamics, we were able to reduce the number of outages by 60%, and we're continuing to sustain that.

Troy Kaser

Managing Director of E-Commerce
Alaska Airlines

Application performance means business

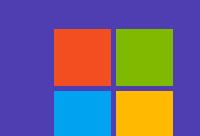
Finally, a partnership you can count on

With ever-rising customer and business demands, application performance is a make-or-break issue. Spend less time fixing performance issues and more time delivering exceptional customer experiences. AppDynamics provides real-time monitoring, business insights, anomaly detection, and full visibility for the entire application landscape to drive both efficiency and BVI. Trusted by more than 2,000 enterprise companies to migrate and monitor their business applications, AppDynamics is the largest and fastest-growing APM technology provider on earth. We've been named a leader in the Gartner Magic Quadrant eight years running for future-proofing increasingly complex and distributed IT environments. Pair that with the leading Microsoft Azure cloud for a secure, Fortune 500-trusted platform with the most comprehensive compliance portfolio of any cloud provider. Not a bad launch pad for IT business success.

Find out how we can help your IT team drive measurable business value.



Cisco AppDynamics



Microsoft Azure