

# Accelerating the Application Lifecycle with Microservices, Docker Containers and End-To-End Visibility of the User Experience



## AT A GLANCE

Microservices and containers are set to transform how organizations develop and deliver new customer offerings and applications. To realize their full potential, IT departments will also have to transform their approach to performance monitoring. We look at how one human capital management company has been able to achieve end-to-end visibility of the application stack and the user experience.



# 94%

of executives face increased pressure to release apps more quickly<sup>2</sup>

### Microservices: Why CA APM Matters

- Reduces complexity
- Identifies the impact of change
- Safeguards user experience
- Provides accountability from development to production

## Seizing the App Advantage

Faster. Cheaper. Better. To gain a competitive edge, organizations need to bring new services and applications to market quickly without compromising quality or increasing costs. Adopting modern software development and delivery techniques will be essential to achieving these goals. Goodbye monolithic applications. Hello microservices.

More than 30 percent of organizations are already delivering software via microservices, and 75 percent see them as being very important or critical to the future of their business.<sup>1</sup>

Microservices break down complex applications into manageable chunks that can be released, updated, orchestrated and integrated more easily and quickly. With consumers and employees demanding increasingly feature-rich applications, achieving such agility is a top priority for both business stakeholders and software developers.

## Greater Complexity Demands Greater Visibility

Greater agility, however, can come at a price. Although microservices help to simplify the software lifecycle, they also complicate ongoing application performance management.

Every microservice needs to be monitored to ensure a seamless user experience—regardless of whether they are in an on-premises datacenter or an off-premises public cloud.

Given the complexity and individuality of every microservice and every application, it's important that monitoring parameters and performance data can be customized to match different environments.

Tracking application transactions as they pass through different microservices is already a massive challenge. And it's only going to get harder as organizations add not only more microservices—but containers to the mix.

Containers, such as Docker, are particularly well-suited to running both microservices and Node.js applications because they enable organizations to isolate specific services or processes, such as verifying credit card details.

“Elephants are easy to monitor; they can be tagged and tracked in their herds. But hummingbirds dart all over the place. Microservices are the hummingbirds of the IT infrastructure, and we need a completely new way to track them.”

**Robert Gauthier**  
Senior Principal Consultant,  
CA Technologies

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## Monitoring Microservices on a Massive Scale

Deploying microservices and containers not only simplifies the release of new applications but modernizes legacy applications, as one human capital management company has discovered.

The company executes millions of financial transactions every month, and is increasingly relying on technology to differentiate its services. As the CTO explains, “Every company is becoming a technology company. In this competitive landscape, we don’t just need to be fast at coding new applications, we need to be fast at shipping them too.”

Microservices and containers will be key to accelerating the company’s time to market for new customer offerings. By 2017, it expects to have around 5,000 in containers in production. Each of these containers and their contents will need to be monitored, which is where CA Application Performance Management (CA APM) comes in.

With CA APM, the company can track how an application responds as it calls on different microservices and containers to complete various processes and transactions.

Using CA APM Differential Analysis, the company can also identify performance issues and trends across the application stack, and prioritize its response. This visibility and—big data—approach to performance monitoring breaks down traditional operational silos, enabling the company to manage the overall user experience instead of just individual IT components.

In the application economy, the ability to understand and optimize the user experience is essential—especially as performance expectations get higher and the tolerance for problems gets lower. Despite such high stakes, more than half of IT organizations admit they lack the application performance management tools capable of tracing transactions across the different execution elements that make up a single, component-based application.

Organizations that fail to plug this performance management gap won’t just have a visibility issue; they’ll have a profitability issue too. Today’s users won’t wait for an application problem to be fixed or a new feature to be added; they’ll simply find an alternative. Adopting modern software development and delivery techniques will only provide a competitive advantage if applications meet users’ expectations today and tomorrow.

<sup>1</sup> Julie Craig, “Microservices: Reducing Complexity and Delivering an Optimal Customer Experience in an Omnichannel World”, January 2016

<sup>2</sup> Vanson Bourne, “How to Survive and Thrive in the Application Economy” global study, September 2014

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