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Choosing an Application Performance Management Solution

Simplify the process to find the right APM technology and vendor for your organization.

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Executive Summary

Applications are rewriting the world in which we live, driving our economy. They're how partners and suppliers interact; how employees connect; how consumers share, learn and purchase goods and services; and how we differentiate ourselves from competitors. Every business is becoming an applications business, every industry is becoming an applications industry—and this digital transformation is only accelerating.

With this increased reliance on applications, it's more important than ever for enterprises to monitor and manage the end-user application experience across all environments: physical, virtual, mobile, cloud and mainframe. Application Performance Management (APM) is a key solution for enterprise organizations that rely on these digital experiences to impress users and build brand loyalty.

When choosing an APM solution, organizations face a multitude of choices. With all these companies competing for your business, it can be very difficult to understand the options and choose the vendor that is best suited to meet your individual needs. This whitepaper introduces some key APM concepts and provides a bit of guidance around what to consider when deciding which solution is right for you.

Section 1

What to Look for in an APM Solution

End-User Experience

When evaluating the technical capabilities of an APM provider, it's helpful to first consider your goals. Virtually all software is created to provide or support a quality experience for the end user. People are using applications in new ways and have higher expectations than ever before. In the application economy, you have more opportunities to impress, as well as more pressure to provide an optimal experience. The quality of a customer's experience is increasingly defined by the quality of the digital experience delivered to them.

Regardless of how an end user accesses your application, it's critical that you understand their experience. Whether logging in from a web browser, a mobile device or a wearable device, users expect your application to perform—and in many cases, they'll go somewhere else if their expectations are not met. A stellar user experience gives your organization a competitive advantage, which is why complete visibility into that experience is a crucial aspect of an APM solution.

As important as it is to recognize the performance of each individual transaction, understanding user behavior can be just as critical. Consider how the APM solution you select will help you decipher users' actions. Are they giving up while trying to navigate a confusing shopping cart? Does a new promotion increase utilization of certain transaction flows? You must go beyond simple end-user experience to understand how people use your applications. Capabilities such as mobile session tracking and usage heat maps can go a long way in reaching this advanced understanding.

Transaction Performance

The user's experience depends on the performance of each transaction. As transactions wind their way through your complex application architecture, you need to understand the paths they take as well as the performance of each underlying application component. From a mobile device in Singapore, through microservices running on Docker® containers in a data center in North Carolina to a backend mainframe server or a service hosted in the cloud, it's critical to understand every transaction from start to finish. When problems occur, you should be able to quickly triage them and dive deep into the technology to diagnose and resolve the issue before it affects your end users.

You also need to balance your ability to monitor these transactions with the ability to monitor high-traffic production environments. Collect too much data and you risk bogging down your APM solution, the network, or, even worse, the application itself. Collect too little data and the problem may go unresolved, ending in a devastating production issue. Finding the appropriate balance in collecting the right information for the right person at the right time can be the difference between a successful APM deployment and disaster.

Application Diagnostics and Visualization

APM solutions monitor a wide array of technologies—make sure that the one you choose covers the technologies that are important to your organization. Not only should a solution monitor all critical technologies but it should do so in a way that is meaningful to each role, team and organization.

Modern frameworks, such as microservices, Docker® containers, APIs, API gateways and cloud deployments push application complexity beyond the confines of traditional application servers, bubbling that complexity up to the application architecture layer. While this is good for scalability and redundancy, it also increases the amount of services and application performance data that operators need to interpret. Traditional application topology maps provide a wealth of data but don't target that data for each role. For example, a level-1 support analyst with limited training and technical acumen who is responsible for multiple applications will have different needs compared to those of an application developer who has an in-depth understanding of a much more focused area. Given a developer's perspective, a level-1 analyst may misinterpret the data and be forced to send out all-hands emails, wasting valuable time. Or, worse, they may fail to recognize an issue and fail to act until end users are affected. An effective APM solution should help simplify complex environments and visualize data in a way that makes sense for each role and each team in an organization.

Modern architectures also introduce other forms of complexity, such as the issue of noise. Traditionally, APM solutions have done little to address the fact that many alerts are false positives. An analyst can quickly become overwhelmed and include too many experts in resolving a non-issue. This distracts those experts from their real priorities, limiting their effectiveness. In many instances, the sheer volume of alerts causes "alert fatigue" and many are largely ignored. This can result in a dangerous scenario where true application and end-user issues are camouflaged in a sea of insignificant red and yellow alerts. A capable APM solution should provide a way to reduce the noise in the system and let you focus only on real problems.

Once you understand your complex application environment, and what alerts actually mean, it's time to consider yet another important factor in the success of a DevOps organization. Quickly responding to change is paramount when such a large part of typical Mean Time To Resolution (MTTR) is simply finding what has changed. Modern APM solutions should help your organization understand not only what has changed but the impact those changes have on applications and users.

The Right Fit

When weighing your APM solution options, consider each vendor's technology as well as that vendor's ability to meet the needs of your organization. Choosing a trusted advisor and a partner as you implement your solution will ensure the best possible outcome. Quality APM vendors provide the highest levels of support and services to help customers successfully implement, maintain and utilize their solutions to achieve optimal ROI. Do your homework and make sure the solutions you're considering are battle-tested and proven in large, complex production environments; meet your technical expectations and have a track record of being widely adopted throughout the organizations they support. In addition, you should carefully consider the long-term stability of the organization you choose—you need a partner you can trust to help you meet your goals now and in the future.

Section 2

Conclusions

When selecting an APM solution, it's not enough to simply check the boxes on a technical requirements list. The offering should:

- Provide clear visibility into your end-user experience
- Monitor and manage a vast array of technologies
- Handle the problems presented by modern application architectures, such as managing complexity, understanding change and reducing noise
- Be ready to deploy into your production environment
- Have a track record of wide adoption and return on investment across the enterprise

Finally, as applications grow too fast for any one central team to handle, an APM solution should support democratization of data and be useful for the various roles and teams throughout your organization.

Section 3

About the Author

Josh Napier has more than 11 years of experience the IT industry, spanning the disciplines of software development, presales engineering and product marketing. His focus areas have included Java application development, and application performance management. He is currently responsible for marketing APM solutions from CA Technologies.

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