

# APM 2.0: AppDynamics Takes On the Application Performance Management Market

## Abstract

AppDynamics, a venture-backed company based in San Francisco, California, recently announced APM 2.0, a new entry in the Application Performance Management (APM) market. The new product is distinguished by its ease of deployment, its high levels of built-in operational intelligence and automation, and its ability to manage distributed applications with service-oriented architectures across physical, virtual, and cloud environments.

This ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) Impact Brief discusses the company and its new product in more detail, and explores the differentiators that distinguish APM 2.0 from similar offerings in its class.

## AppDynamics Launches APM 2.0

On February 22, 2010, AppDynamics launched as a new company and concurrently announced the release of its new product, APM 2.0. AppDynamics is calling the transaction-centric application monitoring solution the “next generation of performance monitoring,” and already boasts several high-profile customers.

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One strong point in AppDynamics’ favor is that many of the company’s key executives are industry veterans who have been instrumental in developing earlier generations of APM solutions. This expertise has driven the development of a product that overcomes the deficiencies of many existing solutions, primarily by building high levels of operational intelligence into the new product.

APM 2.0 is specifically designed to automate the processes of tracking and managing transactions across diverse tiers, platforms, and networks. Spanning both Java and .NET environments, as well as physical, virtual, and cloud tiers, APM 2.0 is designed to address the realities of today’s complex and heterogeneous transactions. Companies are integrating “everything to everything” across an increasingly varied technology mesh, and many of these component-based transactions are business critical. However, complexity breeds risk, particularly in the areas of performance and availability. From this perspective, APM 2.0 can help mitigate risk and ensure performance by detecting anomalies early and delivering policy-based capabilities for automated response.

In introducing APM 2.0, AppDynamics also claims to have solved the “performance barrier” that every APM vendor encounters. The amount of data which can potentially be harvested from cross-tier execution environments is vast. However, collection and analysis of massive volumes of performance metrics can adversely impact production applications. For this reason, the potential power of many real-time APM solutions must be throttled back to avoid contention for production computing resources and network bandwidth. In contrast, AppDynamics claims that APM 2.0 can operate in an “always on” monitoring mode with overhead in the neighborhood of 2%.

## Background: Who is AppDynamics?

AppDynamics is a newer player in the APM space. Founded in 2008 and headquartered in San Francisco California U.S.A., AppDynamics is privately owned and venture funded.

This is one of multiple companies in today's enterprise management space (New Relic is another one that comes to mind) with DNA rooted in the industry experience of personnel who were instrumental in developing competing enterprise management solutions for other vendors. EMA believes that this is significant because APM 2.0 and similar new products are second and even third generation products for some of these team members, many of whom have a decade or more of experience in the enterprise management market. This adds a level of expertise about both technology and business problems which positions these new companies to bring relevant products to market very quickly.

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AppDynamics already has some high profile customers in place, most notably in the gaming, video distribution, and travel industries. A key differentiator in the selection of AppDynamics is the ability to scale with low overhead relative to competing solutions. A video distribution customer, for example, evaluated multiple solutions and found that most did not make the short list because of their performance toll on production environments.

## Secret Sauce: Visibility into Production Applications, Low Overhead

APM 2.0 was specifically designed to take on the APM heavyweights by solving this and other common problems (see Figure 1). One is administration overhead. EMA research reveals a general perception that many traditional management solutions are expensive to purchase and deploy, and require significant technical resources to support. Products which rely heavily on manual configurations, for example, must then be continuously modified as application environments grow and change.

SEE IT	FIND IT	FIX IT	USE IT
			
Built for Distributed Applications	Transaction Flow Monitoring	Deep-on-Demand Diagnostics	Deploys in Minutes
Auto-Discovers Application Map	Business Transaction Centric	Dynamically scale application	No manual instrumentation
Dynamic Flow Mapping	Always-On, Low Overhead	Built for cloud and virtual environments	No consultants required
			Easy to Use

Figure 1: AppDynamics APM 2.0 Value Proposition Summary

Another challenge is that many competing solutions have limited platform visibility, and little or no visibility to underlying infrastructure. Some, for example, cannot track transactions across on-premise and cloud environments, through dynamically changing virtualized resources, or across both Java and .NET.

In response to these challenges, AppDynamics has incorporated high levels of self-configuration and self-learning into the product. One key capability is auto-discovery of application topology for distributed applications. Once agents are deployed, maps are drawn automatically, incorporating information from automated discovery of databases, message queues, message consumers, and execution information from the JVM. Dynamic flow mapping updates maps automatically when the underlying infrastructure supporting an application changes. Research has shown that accurate application maps offer payback based on multiple efficiencies, including reduced administration costs (and time), better accuracy, faster root cause analysis, and less downtime.

In addition, the solution continuously and dynamically “learns” the characteristics of the execution environment over time. Dynamic rolling baselines are automatically calculated and adjusted on an ongoing basis. This eliminates the need to enter and update thresholds, while providing a foundation for predictive diagnostics.

Another area of innovation lies in the product’s efficient use of computing resources. By taking “diagnostic snapshots” of computing environments precisely and only when a pattern of poor performance has been detected, APM 2.0 delivers valuable performance information with minimal impact to production systems. The product can be operated in an “always on” mode, positioning it to deliver useful performance information throughout the application lifecycle. Deep-dive diagnostics are available on an on-demand basis, and can be set via policy to automatically start when Service Level Agreements (SLAs) are breached.

In addition to performance monitoring, APM 2.0 also does performance management. Policy-driven dynamic scaling adds virtual machines on premise or in the cloud when SLAs are breached. These capabilities are facilitated by AppDynamics’ partnerships and integrations with third-party solutions, including third-party management products and the Rackspace, OpSource, and Amazon EC2 clouds.

## Key Differentiators

- Deep and wide and simple:
  - Deep on-demand diagnostics
  - “Always On” transaction snapshots collect automatically
  - Fast deployment
    - Transaction visibility in minutes without consultants or manual coding
- Self learning:
  - Calculates rolling baselines based on ongoing observation of production environment
  - “Understands” differences between outliers, anomalies, and true problems
- Physical, virtual, and cloud:
  - Seamless provisioning, monitoring, and management across deployment platforms
- Policy-driven:
  - Central policy management provides “set and forget” capability
- Automated discovery of application topology, databases, message queues, messaging connections, JVM
- Dynamic Flow Mapping™ (Patent Pending):
  - Automatic discovery, tracking of business transactions
  - Call stack analysis for each method invocation

- Transaction diagnostics:
  - Drill-down into transaction performance and time spent at each tier
  - Diagnostics for each class/method or Java request
  - “Sees” both sides of Java calls
- Low Overhead
- Dynamic Scaling:
  - During utilization spikes, can burst to a pool of virtual machines or public cloud
  - Can interoperate with and collect metrics from other enterprise management systems

## EMA Perspective

Today’s business transactions are both complex and business critical. In these environments, the same flexibility that delivers business value can also put performance at risk. The risks are compounded by multiple factors. They include the high rates of change characteristic of agile development methodologies and Service Oriented Architecture (SOA) deployments, widespread (and often poorly managed) virtualization deployments, dynamically growing and shrinking infrastructure, and integrations into the cloud. All add to the challenge of tracking and managing transactions across platforms, tiers, and companies.

AppDynamics is a newcomer to the APM space but promises to deliver a powerful punch in terms of capabilities. The combination of self-learning, “no touch” transaction monitoring, automated application mapping, and policy-driven problem detection/response addresses many of today’s biggest application-related challenges at multiple levels. Particularly when combined with easy deployment, APM 2.0 will likely be an attractive package to companies seeking a better way to reduce the overall cost of managing business applications.

AppDynamics is still venture funded, and APM 2.0 is new to market. While some companies see these as risk factors, it is important to bear in mind the fact that some of today’s most innovative management solutions are coming out of small companies seeking to make their mark with a “better” way to manage IT-delivered services. Some high profile customers, most notably Priceline, Electronic Arts, and Yap, have already selected AppDynamics over a host of competitors, based on depth and breadth of application visibility combined with low overhead.

EMA sees AppDynamics as a promising new company and APM 2.0 as a promising new product. Companies seeking a no-touch, easy to deploy APM solution that nevertheless delivers significant value are encouraged to include AppDynamics in their evaluation process.

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### About EMA

Founded in 1996, Enterprise Management Associates (EMA) is a leading industry analyst firm that specializes in going “beyond the surface” to provide deep insight across the full spectrum of IT management technologies. EMA analysts leverage a unique combination of practical experience, insight into industry best practices, and in-depth knowledge of current and planned vendor solutions to help its clients achieve their goals. Learn more about EMA research, analysis, and consulting services for enterprise IT professionals and IT vendors at [www.enterprisemanagement.com](http://www.enterprisemanagement.com) or follow EMA on Twitter ([http://twitter.com/ema\\_research](http://twitter.com/ema_research)).

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