Abstract
In June of 2015, AppDynamics released AppDynamics 4.1, adding new functionality supporting multiple popular technologies to its Unified Monitoring platform. With its tagline, “One solution, one unified data store, one install,” AppDynamics makes it clear that this release focuses on expanding the product’s key value proposition: its single unified architecture.

This ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) impact brief describes the new features in the context of Unified Monitoring. It highlights AppDynamics’ cross-functional monitoring capabilities which provide high-value, application-focused functions for multiple roles supporting a broad mix of application and infrastructure platforms.

AppDynamics 4.1
On June 23, 2015, AppDynamics released AppDynamics 4.1, the centerpiece of its “Summer 15” Unified Monitoring release. Per AppDynamics, “Unified Monitoring” is an “application-centric approach to Application Performance Monitoring/Management (APM) in which underlying hardware and software infrastructure dependencies are modeled and viewed in context to the applications they support.” Achieving this application-centric perspective requires a centralized data model/data store serving as a base for collaborative, cross-functional application support.

AppDynamics’ unified platform (see Figure 1) combines comprehensive application infrastructure support with business transaction monitoring and role-based dashboards. Customers have only one product to install, yet they receive the benefits of both infrastructure monitoring and transaction-based visibility to the end-user experience. Perhaps most importantly, the two capabilities are seamlessly intertwined at the deepest level of the product—within the data model—providing real-time visibility to the entire instrumented application ecosystem.

This combination of capabilities is ideally suited to the activities of the cross-functional teams that support today’s high-scale, component-based, and revenue-driving business transactions.

Figure 1: AppDynamics Unified Monitoring platform and Transaction Execution Topology
Background and Context

AppDynamics has been a runaway success story as part of a new breed of APM solutions specifically designed to address the massively distributed, componentized applications running in modern data centers. Servers, databases, and middleware, load balancers, code, and networks, all interact to form the fabric underlying modern applications. In attempting to support these complex systems, IT professionals worldwide are finding that it’s no longer enough to automate infrastructure monitoring. Diagnosing application- and transaction-related problems also requires visibility to application execution, an elusive goal when approached from the traditional bottom-up, infrastructure-focused perspective.

The primary problem with such an approach is that adverse application-related issues often arise in the gaps between hardware and software elements, between network and middleware, and between web server and user. The beauty of the AppDynamics solution is that it sees what’s happening in the application, as well as what’s happening with infrastructure, closing the visibility gap between the two.

By applying patented heuristics and algorithms, the solution “connects the dots” across the underlying ecosystem and delivers a common application-centric context.

AppDynamics Market and Product Overview

AppDynamics recently commissioned an independent third-party survey to uncover the most significant application management challenges and most pressing tooling requirements of more than 300 IT professionals worldwide. As Figure 2 shows, the most important feature “must-have” selected was “Integrated monitoring platform consolidating application and infrastructure monitoring in one solution” (essentially, “Unified Monitoring”). The second most important capability was “Cloud readiness.”

Unified Monitoring is, indeed, a top priority for taking application monitoring/management into the 21st century. It’s also interesting to note that cloud-readiness has been built into AppDynamics from day one. The product can be run on premises, in the cloud, or from the cloud.

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**Figure 2:** “Integrated monitoring platform” (Unified Monitoring) most wanted APM feature

*From survey conducted by Enterprise Management Associates with 300 IT professionals worldwide, June 2015*

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1 Conducted by Enterprise Management Associates (EMA) in May 2015
The basis of AppDynamics’ value proposition is the fact that it provides three types of situational awareness:

- **Consolidated visibility** – A high-level, consolidated view that Application Support, Level 1, or Help Desk personnel can consult to get a high-level perspective on what’s working and what isn’t. Issues can be viewed, prioritized, and analyzed within the application context. If escalation to Level 2 support is necessary, a snapshot of the issue can be forwarded to the appropriate person on the application or infrastructure support team.

- **Role-based deep dive** – AppDynamics’ role-based views provide Level 2 support personnel with a “deep-dive” perspective of their own areas of responsibility in context to the application supported. This view also delivers drill-down capabilities facilitating root cause analysis. As examples, it provides focused insights into the database, SQL statements, SQL “wait states,” etc.

- **Collaborative problem solving** – A “virtual war room” enables multiple technology specialists to collaborate in a virtual space. Each can see the technology they support, again in context to the application. They can also chat in real time, troubleshoot the problem cross-functionally, solve the problem, and then save what they’ve learned as reusable “tribal knowledge.”

These comprehensive capabilities offer something for nearly everyone involved in application support—in a unified, tightly integrated package. By combining these features with ease of installation and fast time to value, AppDynamics has ensured that its product will deliver value for years to come. AppDynamics also ensures continued value by continuously enhancing and adding features, such as those introduced in this release.

### Key Features and Value Proposition

**AppDynamics Core Features**

- **Autodiscovery and baselining** – AppDynamics automatically discovers the software and hardware infrastructure elements underlying a transaction and auto-baselines to discover and maintain data on “normal” behavior. This provides the basis for problem notification without the traditional manual static baselining required by many competing solutions.

- **Automated topology modeling and change detection** – Very few IT organizations have an accurate real-time view of application ecosystems and dependencies. Even fewer have a good handle on changes to these ecosystems. One of the reasons why AppDynamics has been such a successful product is that it not only maintains such a model, it automatically detects production changes that may impact application performance. IT line staff, in particular, consistently put operational change management—visibility to “what changed” in production—at the top of their “most wanted feature” lists. This capability alone can go a long way in terms of ensuring that application-related issues are actually solved—versus being “swept under the rug.” It can also significantly reduce the amount of time required for troubleshooting and root-cause analysis.

- **Application-centric monitoring** – Via its unified data model, AppDynamics puts the application at the “center of the universe,” with real-time visibility to application execution in context to underlying infrastructure.

- ** Consolidated situational awareness at multiple levels** – High-level snapshot, specialist drill-down, and collaborative “virtual war room” capabilities offer role-based visibility to application execution.

- **Single unified platform** – One product to install, maintain, and pay for. The platform is also easy to implement and consumes minimal overhead (< 2%).

- **Flexible deployment** – Software-as-a-Service (SaaS), on-premises, or hybrid options are available. In addition, customers can install agents in the cloud to monitor Infrastructure as a Service (IaaS) instances that are part of the execution environment.

- **Comprehensive infrastructure support** – The list of supported platforms, languages, databases, and deployments continues to grow. (See [www.appdynamics.com/infrastructure/](http://www.appdynamics.com/infrastructure/) for additional details.)
New in AppDynamics 4.1 available on June 23, 2015

• **Python monitoring** – AppDynamics now includes the same level of support for Python as it already has for Java, .NET, and PHP. Capabilities include transaction dependencies and correlations, along with the ability to correlate execution of Python code with other execution environments.

• **Server Monitoring Pro (beta)** – In this release, AppDynamics is introducing a totally new level of deep application-centric server monitoring, including enhanced host visibility, extended CPU, network, and storage performance metrics, a comprehensive dashboard, and detailed process list information. These capabilities will address Linux in this release and will be extended to Windows in the future.

• **Application-centric Docker monitoring** – The core functionalities of AppDynamics described above are now extended to applications running in Docker containers, as is deep-dive visibility into Docker environments. Capabilities include an out-of-the-box dashboard with key performance metrics.

• **Apache server monitoring** – Native Apache monitoring includes baselining, snapshots, and KPIs. Apache metrics are correlated and reported in context to application performance. In addition, business transactions now show on dashboards as originating at the Apache web server.

• **Enhanced support for asynchronous transactions** – Support includes configuration and reporting on asynchronous transaction latency, a capability necessary for troubleshooting Web 2.0 and similar complex transactions.

• **Synthetic monitoring (beta)** – This is a beta release that correlates synthetic monitoring results with related metrics generated by the application ecosystem. The update features new graphics, widgets, and other enhancements, including monitoring for network communications.

**EMA Perspective**

AppDynamics is a next-generation APM solution with a vision and roadmap rooted in the years of industry experience of its founders and designers. Working to overcome the limitations of traditional APM solutions, AppDynamics created a product that is simple to install and deploy while still yielding an exceptional level of application insight. For this reason, AppDynamics has been very successful in providing leading-edge APM features to high-profile companies, virtually since its inception.

The latest release focuses on one of the product’s key strengths: its single, unified architecture. This enables AppDynamics to deliver high-value capabilities to multiple IT constituencies. Deep-dive insight into solutions with growing install bases, such as Apache and Linux, along with better support for asynchronous transactions and Python are additional hallmarks of this new release.

From the EMA perspective, AppDynamics is one of a handful of companies at the top of the APM pyramid. These latest enhancements illustrate the company’s ongoing commitment to adding features reflecting advancements in leading-edge applications and application architectures (such as Docker).

In this release in particular, AppDynamics addresses two of the most pressing issues voiced by APM professionals. First, a unified monitoring architecture simplifies product installation and maintenance, while centralizing focus on the application. In addition, the ability to automatically discover and maintain the business transaction topology as the application changes eliminates one of the top challenges encountered by virtually every IT organization.

That being said, the product is still evolving. While Linux drives a substantial percentage of today’s production-grade workloads, customers are likely asking for similar deep-dive support for Windows systems as well. Nevertheless, this seems like a nitpick compared to the value proposition this solution can deliver.
EMA views AppDynamics 4.1 as a leading-edge Application Performance Monitoring/Management solution, and one that should be shortlisted by any company seeking an application-centric solution capable of monitoring complex distributed applications.