

Managing PaaS applications with AppDynamics

What is PaaS?

Platform as a Service (PaaS) is one of three prominent cloud service delivery models, in addition to Infrastructure as a Service (IaaS), and Software as a Service (SaaS). It is a category of cloud computing services that provides a platform allowing customers to develop, run, and manage Web applications without the complexity of building and maintaining the infrastructure typically associated with developing and launching an application. A few examples of PaaS include Microsoft Azure, Pivotal Cloud Foundry, and Red Hat OpenShift.

How does PaaS help enterprises?

PaaS providers offer software development or deployment platforms including programming languages, common libraries, services, toolsets, and underlying infrastructure for teams to develop and deliver applications quickly. Enterprises that consume PaaS services do not need to worry about underlying infrastructure, while taking advantage of standard frameworks, processes, and tools offered by the provider for continuous delivery of applications to their end users. This expedites time-to-market for enterprises. With PaaS, enterprises can scale as they grow or address their increased seasonal workload without investing upfront in infrastructure.

Although PaaS offers numerous benefits, it poses risks of vendor lock-in. Enterprises can minimize the lock-in risk by looking for PaaS solutions that support multiple languages, leverage open-source technology, and avoid mandating proprietary APIs.

Application management challenges in PaaS

As public, private, and hybrid cloud environments are becoming more mainstream, enterprises are taking advantage of PaaS to quickly develop and deploy applications in the cloud. Although PaaS makes it easy and expedites cloud application deployment, it adds to the complexity of the application environment, and enterprises lose visibility and control over the underlying infrastructure.

As we know, tolerance for application downtime is decreasing, the cost of service slowdowns and interruptions is increasing, and the resources dedicated to managing the entire complex, heterogeneous application environment are flat for enterprises at best, if not shrinking. The complexity of running applications in diverse and distributed environments makes it difficult for enterprises to have complete control over their applications and deliver exceptional end-user experience.

AppDynamics support for applications in the PaaS cloud

AppDynamics provides complete visibility into cloud applications developed and deployed in the PaaS cloud. Although enterprises can instrument and manage applications deployed in PaaS using AppDynamics exactly as they have been on-premises, AppDynamics has partnered with key PaaS providers to make our solution available as a service in the PaaS environment for easy procurement, instrumentation, and monitoring of applications (i.e. Microsoft Azure, Pivotal Cloud Foundry, Redhat OpenShift).

“Users and vendors of enterprise IT software solutions that are not yet engaged with PaaS must begin building expertise in PaaS or face tough challenges from competitors in the coming years.”

Yefim Natis, Vice President, Gartner



KEY FEATURES

- Auto-discover and visualize the dependencies between application components deployed on-premises and in the PaaS cloud.
- Extensions for monitoring Windows Azure, Redhat Openshift, Pivotal cloud foundry PaaS cloud metrics
- Core AppDynamics (e.g. dynamic baselining, health rules, policies, actions, runbook automation etc.) features available for for PaaS metrics
- Cloud connector extension for Azure and other PaaS environment to enable automatic scaling of cloud applications.

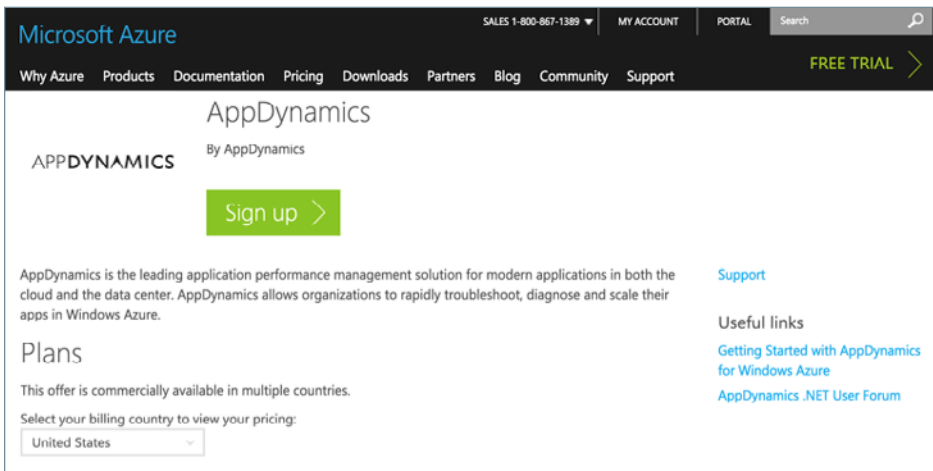


Figure: AppDynamics available as “monitoring” server in Microsoft Azure Marketplace

Following are the top use cases where customers are using AppDynamics to manage applications deployed in various PaaS cloud environments.

Monitoring applications deployed in PaaS environments: AppDynamics allows enterprises to manage cloud applications by providing:

- A single interface for end-to-end transaction tracing across distributed architectures: on-premises, cloud, and hybrid.
- Superior anomaly detection, set against automatic dynamic baselines and SLAs, tailored for environment characteristics.

Monitoring PaaS infrastructure: AppDynamics provides visibility into:

- Cloud infrastructure monitoring via extensions. For example, the Cloud Foundry monitoring extension captures metrics exposed by Pivotal CF JMX server.
- Application Infrastructure. For example, an OpenShift cartridge enables AppDynamics monitoring on JBoss AS, JBoss EAP, and JBoss EWS applications. It installs Java AppServer Agent and reports metrics to the configured AppDynamics controller.

Migrating applications from on-premises to the cloud: AppDynamics provides critical planning insights by automatically:

- Discovering all the business transactions in your application environment
- Mapping and visualizing how business transactions are executed through your distributed architecture components
- Baselining the key performance indicators to facilitate comparison pre- and post-move

Auto-scaling your cloud applications: AppDynamics supports auto-scaling of cloud applications by:

- Setting up workflows, health rules, and policies for auto-scaling based on a combination of application metrics and infrastructure metrics.
- Enabling elastic scaling driven by application performance, preventing over-provisioned infrastructure that is underutilized.

KEY BENEFITS

- Automatically discover applications deployed in PaaS and show application flow map.
- Monitor the performance of applications deployed in cloud and correlate with the supporting cloud metrics.
- Scale the cloud environment elastically as workloads grow with help of AppDynamics runbook automation

“Using AppDynamics, we monitor the existing application and understand how best it is performing before moving to the cloud, and then re-architect it and take advantage of capabilities like auto-scaling and standard processes of the OpenShift Platform as a Service.”

*Chris Morgan, Technical Director,
Red Hat OpenShift*



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