Platform As A Service (PaaS)

Platform as a Service (PaaS) is the forgotten brethren of the cloud computing brotherhood. PaaS is where a third-party provider builds all the hardware, software and middleware and allows its consumers to just focus on building their applications or service. Unlike Software As A Service and Infrastructure As A Service, PaaS is mainly used to compliment a companies existing IT infrastructure, rather than replace it. With many PaaS products being geared toward software development, many of them comes with compute and storage infrastructure, as well as text editing, version management, compiling and testing services that help developers create new software more quickly and efficiently. [A PaaS product can also enable development teams to collaborate and work together, regardless of their physical location.](http://searchcloudcomputing.techtarget.com/definition/Platform-as-a-Service-PaaS)

According to a Microsoft Azure blog post on PaaS, organizations typically use PaaS for these scenarios:

**Development Framework**

PaaS provides a framework that developers can build upon to develop or customize cloud-based applications. PaaS lets developers create applications using built-in software components. Cloud features such as scalability, high-availability, and multi-tenant capability are included, reducing the amount of coding that developers must do.

**Analytics or Business Intelligence**

Tools provided as a service with PaaS allow organizations to analyze and mine their data, finding insights and patterns and predicting outcomes to improve forecasting, product design decisions, investment returns, and other business decisions.

Advantages of PaaS

**Cut Coding Time**

PaaS development tools can cut the time it takes to code new apps with pre-coded application components built into the platform, such as workflow, directory services, security features, search, and so on.

**Develop for Multiple Platform**

The ability to use application developmental options from multiple platforms, such as computers, mobile devices, and browsers making cross-platform apps quicker and easier to develop.

**Use Sophisticated Tools Affordably**

A pay-as-you-go model makes it possible for individuals or organizations to use sophisticated development software and business intelligence and analytics tools that they could not afford to purchase outright.

**Geographically Distributed Development Teams**

Development teams can work together on projects even when team members are in remote locations.

**Efficiently Manage the Application Lifecycle**

PaaS provides all of the capabilities that a company needs to support the complete web application lifecycle: building, testing, deploying, managing, and updating within the same integrated environment.

Unlike, IaaS and SaaS, PaaS is rarely the cornerstone of a company products and services. Most the times it is apart of a SaaS platform such as with Sharepoint and Sites in the Office 365 and G-Suite respectively. It can also be apart of a IaaS platform like App Service and App Engine in Azure and the Google Cloud Platform respectively.

PaaS players

WordPress

WordPress is one of the most used PaaS platform that is used to bring a company’s website to the internet. Althrough it started out as pure SaaS used to host writers’ blogs, it has evolved to become an all-in-one web platform that allows anything from a full-on Amazon e-commerce competitor to be built on it using Woocommerce through Amazon Web Service, Azure or Google Cloud Platform; to simple blogs just a simple page with the blog posts. It now powers 25% of all websites on the internet including Wired.com, Time.com, BBCAmerica.com, Sony.com and TechCrunch.com. With WordPress, you can simple chose your theme, start uploading your content and be on your way; it was first built as a Content Management System (CMS). However, given its open nature, everything on the platform can be changed in accordance to the desire of a developer and her clients.

**Azure App Service**

Azure App Service is a PaaS platform that makes it easy for a developer to build, test and deploy their web or mobile apps without the need to worry about the underlying infrastructure. It is operating system independent and can be used with tools and languages such as NET, Node.js, PHP, Python, Java, and Ruby. It also has the integration of Visual Studio that allows for the creation and deployment of these web and mobile applications; Visual Studio support local debugging of application code.

Application service types include:

Starter Web Apps

ASP.NET Starter Web App

HTML5 Empty Web App

PHP Empty Web App

Node JS Empty Web App

Kentico Cloud Sample Website - ASP.NET MVC

Media Services

Microsoft

Blogs + CMSs

Joomla

Orchard CMS

MonoX

Drupal on Linux Web App with MySQL

Sitecore® Experience Cloud

WordPress

Ecommerce

nopCommerce

Virto Commerce

Kentico CMS

Media services

Media Services

VoipNow 5.2.5

SiouxApp Business Suite 15.10 on Ubuntu 14.04

aiMobile Mobile Acceleration -BYOL

aiMobile Mobile Acceleration-HOURLY

aiVideo - video streaming solution (BYOL)

Add-ons Services

Bing Maps API for Enterprise

LiveArena® Broadcast™

The Identity Hub

SendGrid Email Delivery

Azure Search

Storage account - blob, file, table, queue

**App Engine**

Google’s App Engine is the PaaS platform that was one of the first to be commercially available. In fact, it was released before Google Compute Engine. Build modern web and mobile applications on an open cloud platform, it allows a user to bring their own language runtimes, frameworks, and third-party libraries. Google App Engine is a fully managed platform that completely abstracts away infrastructure, so a user can focus only on code. Go from zero to planet-scale and see why some of today’s most successful companies power their applications on App Engine.

App Engine Features

Custom runtimes allow a consumer to bring any library and framework to App Engine by supplying a Docker container

A fully managed environment allows the focus to be on code while App Engine manages infrastructure concerns

Google Stackdriver gives powerful application diagnostics to debug and monitor the health and performance of an app

Easily host different versions of an app, easily create development, test, staging, and production environments

Route incoming requests to different app versions, A/B test and do incremental feature rollouts

Help safeguard applications by defining access rules with App Engine firewall and leverage managed SSL/TLS certificates by default on custom domains at no additional cost

Languages offered by App Engine include:

Go

PHP

Java

Python

Node.js

.NET

Ruby

**Elastic Beanstalk**

Amazon Web Services Elastic Beanstalk allows for the quick deployment and management of applications in the AWS Cloud without worrying about the infrastructure that runs those applications. It reduces management complexity without restricting choice or control. A consumer simply uploads their application, and Elastic Beanstalk automatically handles the details of capacity provisioning, load balancing, scaling, and application health monitoring. It uses highly reliable and scalable services that are available in the AWS Free Usage Tier.

Elastic Beanstalk supports applications developed in Java, PHP, .NET, Node.js, Python, and Ruby, as well as different container types for each language. A container defines the infrastructure and software stack to be used for a given environment. Elastic Beanstalk provisions one or more AWS resources, such as Amazon EC2 instances when an application is deployed. The software stack that runs on your Amazon EC2 instances depends on the container type. Elastic Beanstalk automatically launches an environment and creates and configures the AWS resources needed to run the code that has been created and uploaded to it. After an environment is launched, you can then manage the environment and deploy new application versions. After an application is created, the information about the application such as metrics, events, and environment status are available through the AWS Management Console, APIs, or Command Line Interfaces, including the unified AWS CLI.

**Force.com Lightning**

Force.com Lightning is a PaaS play from Salesforce allows developers to build multi-tenant applications. Lightning allows anyone to turn business ideas into intelligent apps, without code. Every app is instantly mobile, connected, and secure.

  The Features of Lightning include:

Extend CRM Data

Unlock the power of Salesforce data with custom apps and intelligent workflows. Build predictive sales dashboards, smart service workflows, and more.

Automate Business Process

Lightning Platform makes it easy to transform complex processes into apps. It drives productivity for every part of a business with Process Builder's point-and-click workflow and process tools.

Integrate Data

A company can build apps that are automatically connected to all of their Salesforce data, bringing in external data, from ERP and databases with the ease of reference-based point and click integration.

Make Mobile Applications.

With Lightning Platform, every app is instantly mobile; no need for different development tools.

Another PaaS platform from Salesforce.com is Heroku. Heroku helps consumers build engaging customer experiences applications and extend the power of CRM. A user can begin using Heroku to deploy their applications for free.

Languages include:

Ruby

PHP

Node.js

Python

Java

Go

Clojure

Scala

**AppFog**

AppFog is a PaaS which claims to be a simpler option that offers support for Java, Python, Node, PHP, Ruby, MySQL, MongoDB and PostgreSQL.

AppFog, like others, runs in numerous different regions so that data centres and infrastructures are dotted around. The user can access and pay for only what is needed and used.

Again, like its competitors it offers multiple cloud solutions, it also supports different code management systems such as Git, SVN and Mercurial.

One of the benefits is that AppFog allows for the delegation of management privileges, so you can pass on the work to someone else.

**3. Software AG – LongJump**

Another of the early [PaaS](http://www.cbronline.com/blogs/cbr-rolling-blog/busting-some-myths-around-platform-as-a-service) members, it has slowly added a number of tools and features for a developer-centric approach.

LongJump, which was bought by Software AG in 2013, in an aim to push for small and medium sized enterprises to develop applications without the need for more IT.

LongJump is based upon open-source components like the MySQL database and Tomcat, it also offers customers a hosted version through Rackspace servers.

**5. IBM – Bluemix**

IBM has an open source PaaS which is based on Cloud Foundry. The idea behind it is that the user will have greater security and control.

Users’ can choose from third-party and community services to extend the functionality of apps. A useful benefit is that any existing infrastructure that you have can be migrated to Bluemix.

The languages that are available include PHP, Python, Ruby Sinatra, Ruby on Rails and it can also be extended to support other languages through buildpacks.

**6. RedHat – OpenShift**

[RedHat](http://www.cbronline.com/news/throw-your-red-hat-into-the-mobile-first-economy-ring-4534318) offers a few different options for developers which consist of either hosted, private or open source PaaS projects.

The benefit of this is that at whatever level you are, RedHat has an option for you.

For OpenShift Origin, the languages that are supported are Java EE6, Ruby, PHP, Python, Perl, MongoDB, MySQL, and PostgreSQL. OpenShift Online and OpenShift Enterprise also offer the same languages.

One of the key benefits is the automated workflows which helps developers to scale automatically in order to handle peak workloads.

**7. VMware – Pivotal CF**

This service benefits from the use of Cloud Foundry technology and will run on Hybrid solutions as well as private and public cloud solutions.

Languages that are supported include Java, Ruby and Node.js, additionally it not support Go, Python and PHP.

The service is powered by VMware vCloud Air and vSphere and it is attractive to developers who want an open platform which is more flexible on the language that they want to use.

**10. Engine Yard**

Engine Yard has a long client list and that typically means that it is a trusted name with a proven PaaS record.

One of the reasons why Engine Yard is being successful is because the company tailors its solution to the user. This makes the solution far more tailored than some of the other options.

The company states that: "We curate, optimize and maintain pre-integrated, pre-tested technology stacks for PHP, Ruby and Node.js applications, web and application servers, hosted and local databases, built-in monitoring and process management, an Engine Yard optimized Linux distribution, in-memory caches and more."

Engine Yard particularly support [AWS](http://www.cbronline.com/news/it/it-services/microsoft-to-offer-azure-credits-to-compete-with-ibm-aws-4508449) and Azure for distribution, which covers a large portion of the market.

One of the benefits is that Engine Yard runs self contained environments, so your resources will not be impacted by another application.

<http://searchcloudcomputing.techtarget.com/definition/Platform-as-a-Service-PaaS>

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