



THE NEXT-GENERATION CLOUD APPLICATION PLATFORM



ENGINE YARD SOLUTION BRIEF

HIGHLIGHTS AT A GLANCE

A flexible and modular cloud application platform that decouples user access, application environment, and platform automation and orchestration engine from one another

Infrastructure abstraction supports multiple infrastructures to eliminate resource lock-in, manage risk, and optimize costs

Multimodal capabilities enable application deployment on private, public, or hybrid clouds

Supports a wide range of languages, operating systems, and databases, plus the flexibility to bring your own components

A modern and intuitive user interface supports the complete application lifecycle, from planning and deploying to monitoring and management

Plan environments with blueprints, using predefined containers based on Engine Yard best practices, then modify and save for future use

Clusters enable rapid environment deployment and provisioning, and greater control

Continuous integration and delivery provides fast access to new updates, ensuring stack consistency, quality, and optimization

An intelligent API enables user interface tasks to be automated

Many organizations are turning to cloud computing to streamline deployment and reduce the cost of operations, with Forrester forecasting the global market to grow six-fold by 2020. Creating innovative cloud-based applications and services requires comprehensive infrastructure — from servers, operating systems, and middleware to development, debugging, and testing tools. Acquiring, integrating, and testing all required components is a time-consuming and error-prone process that can delay application development and impact time to service delivery. As a result, startups, SMBs, and enterprises are turning to the cloud to gain access to the infrastructure and application platforms needed to support the complete application lifecycle.

The Confines of Traditional Cloud Models

Typically organizations must choose between a pure Infrastructure as a Service (IaaS) or statically configured PaaS environment for their cloud development and deployment needs. While both models provide benefits, they also have drawbacks. Traditional IaaS providers only handle the physical aspects of data center infrastructure, causing developers and IT staff to spend time acquiring, integrating, and testing software components and tackle application support problems on their own. In contrast, most PaaS environments provide access to black-box infrastructure resources and pre-selected language and platform component stacks with limited or no control, forcing developers and administrators to ensure applications conform on their own.

Breaking Free with Engine Yard

Engine Yard’s next-generation platform breaks free of the boundaries of typical PaaS deployments. This flexible, modular cloud application platform simplifies the development and deployment process by decoupling user access, running applications, and platform orchestration and automation from one another. With the ability to automate, orchestrate, and manage development tasks — at both the deployment and infrastructure level — the next-generation Engine Yard platform gives organizations of any size complete control over their environment. This unprecedented control, along with choice in infrastructure and deployment options, enables developers and IT staff to focus on engineering innovation rather than common, repetitive, and non-revenue-generating tasks.

The Engine Yard platform is a continually running service. New features, including the next-generation capabilities described here, are rolled into the platform on a regular basis to enable new and existing customers to take advantage of a steady stream of innovation.

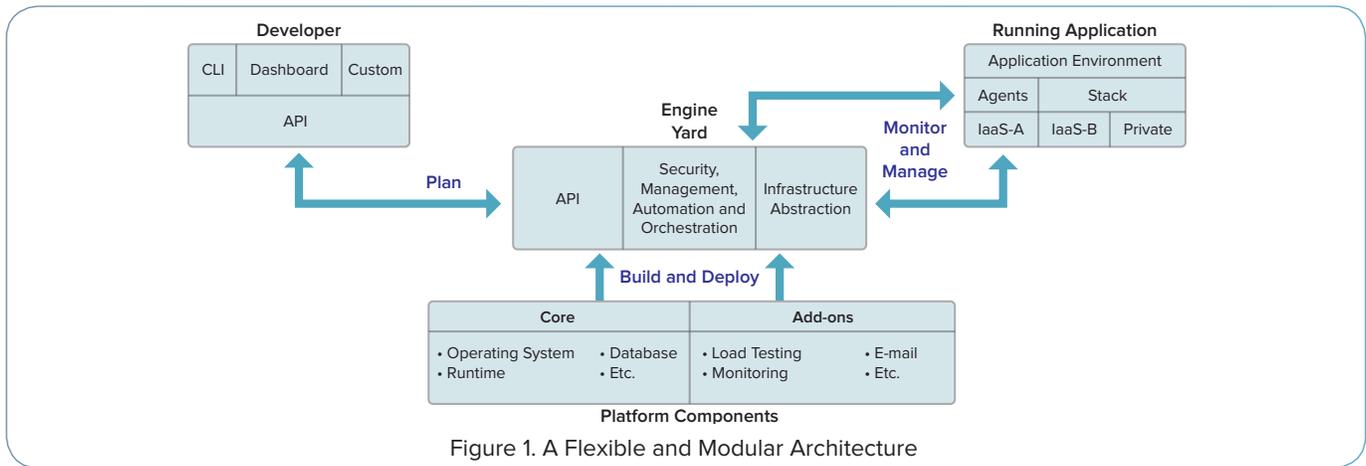


Figure 1. A Flexible and Modular Architecture

Modular Architecture

Engine Yard's next-generation platform is designed for developers in startups and enterprises to retain complete access to and control of applications and underlying platforms. What enables this true modularity? Developer access to modular components and a choice of services and infrastructures is decoupled from the platform's automation and orchestration engine and the application environment.

- The technology stack is not monolithic. All components that comprise a stack are decoupled from one another, minimizing inter-component incompatibilities, with updates applied to specific components instead of the entire stack.
- Each environment consists of a collection of clusters rather than a collection of instances. Updates are targeted at designated clusters, such as an application, database, or utility cluster.
- An infrastructure abstraction layer decouples provisioning from the automation and orchestration engine.
- The instance is decoupled from the automation and orchestration engine and is managed by the Engine Yard management and monitoring agents.

Designed for Flexibility and Control

Simplify DevOps: With on-premise systems or IaaS environments, technical staff must select, install, configure, monitor, and analyze every aspect of infrastructure to ensure optimal operation. From installing operating system and security patches and creating high availability frameworks, to performance monitoring and troubleshooting, IT staff—system administrators, database administrators, QA engineers, and DevOps personnel—must invest significant time to ensure the entire ensemble is tested and production ready.

In the Engine Yard PaaS, an automation and orchestration engine provides fine-grained monitoring for greater visibility and fault tolerance. Essential infrastructure services, such as load balancing, persistent storage, data backup and restoration, snapshots, cloning, and system diagnostics foster resilience and protect valuable data to ensure business continuity in the event disaster strikes.

Architected for reliability. The Engine Yard platform is architected for reliability and intentionally isolated from customer environments. This isolation enables an infinite amount of configuration changes while providing developers with SSH access to their instances, without introducing operational risk to infrastructure. As a result, applications are not dependent on the Engine Yard platform to stay up and running—applications run directly on the infrastructure on which they were provisioned.

Programmatic access. The Engine Yard API will enable tasks that would be available via the user interface to be automated, from provisioning instances to managing organizations. For example, users can respond to time-of-day workload changes by adding instances programmatically via the API.

Choice of Infrastructure, Types of Clouds, and Curated Components

Select the right provider. Understanding the diverse development and deployment requirements of small and large-scale companies alike, the next-generation technology will support multiple infrastructures. A sophisticated cloud abstraction layer makes it easy to provision cloud resources across a range of providers, enabling developers and IT staff to choose the IaaS provider that best suits their environment or application requirements.

Comparison shop for resources. Whether looking for infrastructure for a line of business, product development, or an independent project, developers and IT staff can evaluate features and costs when selecting the infrastructure that suits their application needs and budget constraints.

Take advantage of multimodal deployment. The next-generation platform enables developers to deploy applications with ease. It can even be deployed in on-premise or private cloud environments.

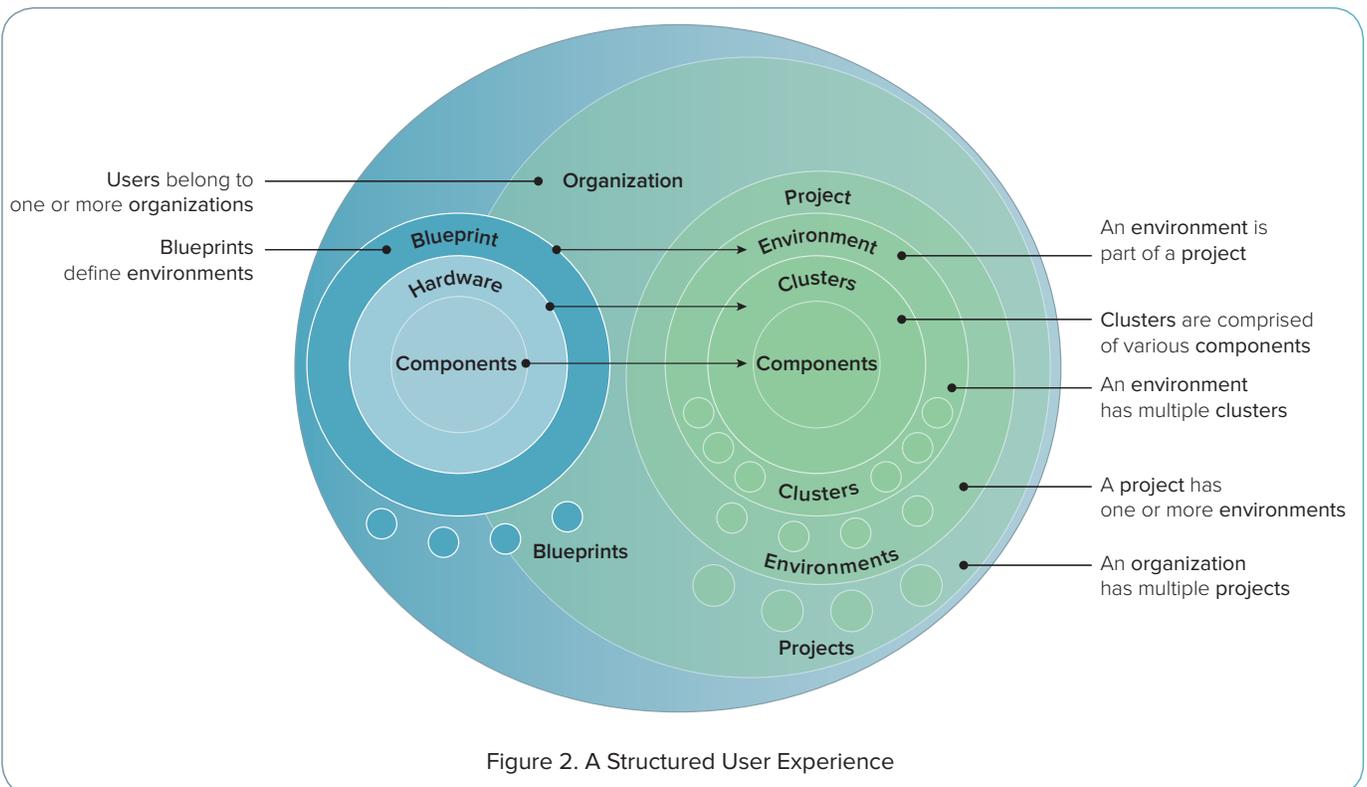
Use Engine Yard curated components or bring your own. Because no two web applications provide the same functionality or depend on the same types of components and services, Engine Yard gives customers the freedom to select items at every layer of the technology stack and put them to work together—without needing to spend time on configuration, integration, and testing. Everything needed to develop and deploy applications—frameworks, language interpreters and language virtual machines, application servers, web servers, load balancers, caching mechanisms, and databases—is available via the Engine Yard platform. Plus, runtime components such as libraries, frameworks, and services are in place to facilitate application builds. In the event different components or services are needed or desired, customers can bring their own and integrate them with the components and services provided by the platform—which Engine Yard then includes in the application assembly.

Complete Application Lifecycle Support

Through a new and modern user interface built with Angular.js, the next-generation platform supports the complete web application development lifecycle, from planning and deployment to monitoring and management.

Plan projects easily with blueprints: Developers can start with a base Engine Yard blueprint with pre-filled, configured components and services to get a new environment up and running rapidly. After the environment is deployed, configured, and validated to function in the intended way, developers can create a blueprint of this trusted platform. Blueprints are structured plans for an environment and define server sizes and roles. This gold standard, which identifies all components and specifies their configuration, can be used to instantiate a duplicate project environment. Developers can even select parts of blueprints to serve as the basis for other projects, or create their own custom blueprints.

Deploy applications faster: In typical development environments, each time a component is updated or replaced, developers and administrators must take time away from important activities to re-integrate their components and code—and there is always the risk that errors are introduced or existing functionality is compromised. While many companies simply opt to work with an outdated stack, doing so means they cannot take advantage of security updates, performance improvements, and enhanced features or use new



technology to the best advantage. Engine Yard technical experts customize, optimize, test, and fully integrate each component and component update to provide enhanced technology stack quality, consistency, and compatibility.

In addition, built-in automation and coordinated interaction with IaaS providers helps accelerate application deployment. For example, developers can deploy applications from existing workflows without extra tools or integrated development environments (IDEs) by simply committing or pushing their code to a Git repository. Developers will be able to deploy to a continuous integration server for application testing and deployment.

Manage environments with clusters: As applications grow in sophistication and move to the cloud, they need to evolve from separate application instances to groups of processes, services, and platforms that work together to deliver a cohesive solution. Engine Yard technology takes this paradigm to a new level with clusters, collections of software stacks that provide the fundamental building blocks for development and deployment environments.

Typically each stack corresponds to a software tier (such as database, application, or utility), with groups of stacks working together in a cluster ensemble to deliver services to applications. In the next generation of PaaS, the Engine Yard environment runs as a collection of clusters rather than a collection of instances. Environment attributes such as operating system versions, middleware, number of servers, and IaaS providers define a cluster's attributes.

Clusters can be added or removed from environments, and components can be configured, added to, or removed from clusters. Since instances are built from cluster-specific images, stack releases can be targeted to clusters and specific clusters can be spread across regions for disaster recovery. This speeds instance scaling with faster provisioning, configuration, and deployment, and offers greater control.

Monitor applications and services: The Engine Yard platform automatically configures the monitoring of components, and developers can modify or extend each configuration. Monitoring and data functionality monitors and provides incident data and alerts on applications, components, and other processes running in a virtual machine, such as CPU, memory, disk. Customers can view hourly, daily, or weekly performance graphs on dozens of resource metrics.

Deep Expertise and Superior Support

Highly regarded by customers and the community, Engine Yard has not only deep technical expertise, and

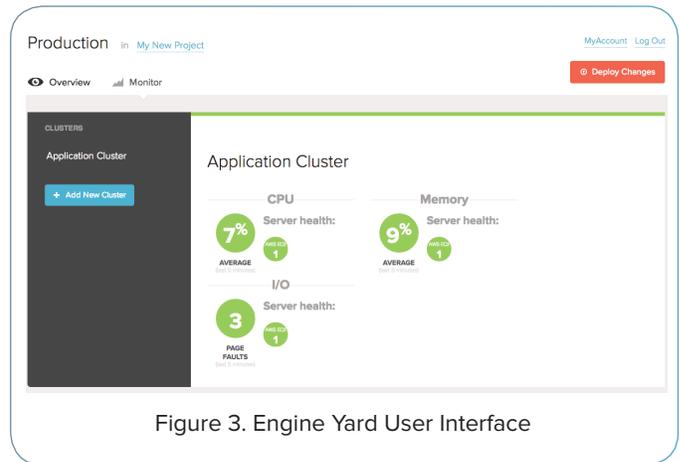


Figure 3. Engine Yard User Interface

powerful infrastructure orchestration, but also world-class professional services and support. The company's next-generation platform delivers a proven architecture, incorporating best practices from current Engine Yard products and expertise gained by helping customers deploy tens of thousands of applications. With a strong commitment and contribution to the Ruby, PHP, and Node.js communities, Engine Yard has spent years curating PaaS components and fine tuning its automation and orchestration engine to deliver superior access, performance, and scalability.

While all subscribers receive unlimited Standard Support with access to an elite support team, Premium Support is available when proactive response to system alerts and 24x7 emergency support is required. For detailed information on Engine Yard support plans, visit <http://www.engineyard.com/support/plans>. From trouble shooting a simple issue to designing a HA plan, our support team is focused on your success.

Innovate More with Engine Yard

The next-generation platform from Engine Yard delivers a complete application cloud that lets developers choose the right balance between automation and control. Organizations of all sizes can take advantage of this open, commercially hardened, and secure platform to plan, monitor, deploy, and manage their applications. With unprecedented flexibility and control, Engine Yard empowers developers to do what they do best—create innovative applications.

Learn More

To learn how Engine Yard's next-generation platform can help you innovate and streamline the web application and service lifecycle, visit: <http://www.engineyard.com>



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