apprenda

5 Ways Private PaaS is Revolutionizing Enterprise Web Hosting

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Software has become essential to the success of the enterprise. Custom applications – both internal and external-facing – are now a gateway to achieving the strategic objectives of all enterprises by helping to create new revenue streams, increasing customer satisfaction and driving employee efficiency. Enterprise web hosting has therefore become a strategic asset that can be the difference between growing business and drowning prosperity since any service interruption to vital custom applications inevitably results in lost revenue, increased expense and possibly damage to brand reputation.

While enterprise web hosting is a relatively mature practice, new technology and processes have emerged that redefine the discipline. Here are the five ways private Platform-as-a-Service (PaaS) drives enterprise success:

1. Speed and Agility
Fueling business scalability with hybrid cloud

Currently, most enterprise organizations are moving forward with private cloud plans and are implementing hybrid cloud now or in the coming months. The different environments are not only spread across geographies, but also amongst external and internal hosting methods. Organizations, in yet another level of abstraction, divide each of the different resources by use cases - such as dev/test, staging and production.

Private PaaS can help enterprises to combine resources across all clouds into a single, logical resource pool and apply flexible and powerful application deployment policies. These policies can be used to automatically map applications to infrastructure based on multiple factors, including use case, security, compliance, business unit and geography.

Many think the most important aspect of hybrid cloud is that it allows enterprises to very easily add public resources during times of high demand or service outage. Private PaaS enables that on-demand provisioning, in addition to going beyond that use case and supporting the flexibility to efficiently orchestrate across internal and external clouds. For example, dev/test can be hosted on the public external cloud, whereas the application can move and be hosted internally when it goes into production.

HOW APPRENDA SUPPORTS SPEED AND AGILITY

Apprenda enables enterprises to pool servers across multiple clouds and use policy to determine where applications land and consume resources. This functionality is invaluable for dealing with the increased workload associated with seasonal fluctuations, product launches and even disaster recovery, while respecting security and compliance policies.

Fast

App deployed
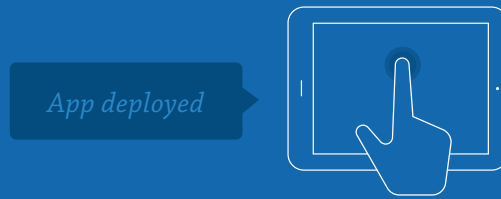
2. Business Continuity

Ensuring that Recovery Time Objectives (RTO) are met or exceeded through load balancing and high availability

Private PaaS ensures that web applications automatically inherit availability and guaranteed quality of service. Applications hosted on light-weight containers are liberated from the infrastructure and able to rehydrate on other servers, virtual machines, or public cloud when hardware fails. Load balancing across multiple instances on the platform fabric ensures that application experience is never diminished. Private PaaS' responsiveness to degradation of services from application telemetry monitoring gives users the performance and SLA they demand.

HOW APPRENDA SUPPORTS BUSINESS CONTINUITY

Applications running on the Apprenda PaaS fabric become highly available and able to handle scaled load with no additional coding. Apprenda's use of HTTP load balancing and custom SOAP/REST message routing ensure optimized load distribution, while the Apprenda container guarantees availability.

Easy High Availability

App

Server 1 *FAILED*
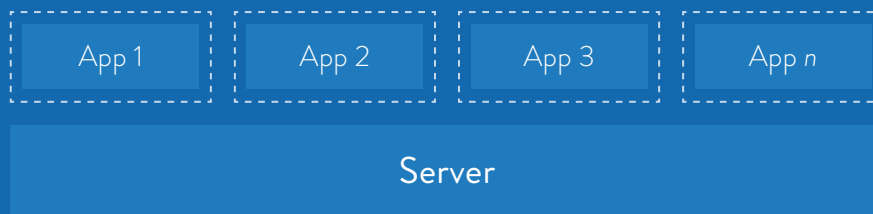
Server 2

3. Cost Reduction
Reducing CAPEX and increasing data center utilization through defined resource policies

Rather than relying on virtual machines as a container for providing application isolation, private PaaS uses a custom container model that runs inside OS instances to isolate applications from one another – reducing virtualization sprawl. This fine-grained isolation is used to sub-divide each OS instance into multiple segments, increasing utilization and reducing hardware and licensing costs. Resource policies are the defining unit that allow platform operators to define how large these segments are from a CPU, memory and storage perspective, and are published to developers as the set of options they may choose from when allocating resources to their applications. In addition to the significant cost savings, these resource policies also allow applications to go into production faster and ensure that the enterprise web hosting team is a source of developer satisfaction.

HOW APPRENDA SUPPORTS COST REDUCTION

Apprenda provides platform operators in the IT department with ultimate control over resource utilization, while giving developers the authority to make sanctioned, application-level resource assignment decisions. These policies result in lowered IT costs and increased utilization.

Light Weight Containers Boost Utilization

| App 1 | App 2 | App 3 | App *n* |

Server

4. Governance, Risk and Compliance
Protecting highly regulated data by defining and enforcing application deployment policies

When enterprises manage large numbers of servers in a single logical resource pool, situations often arise where applications need to be mapped to very specific infrastructure. In many cases, this is due to security or regulatory compliance.

Private PaaS leverages defined application deployment policies to enable fine-grained mapping of applications or application components to infrastructure based upon specific, configurable properties. Instead of creating multiple silos with different rules and configurations based upon business needs, private PaaS enables enterprises to consolidate applications on shared infrastructure, while using sophisticated deployment policies to honor specific business, security or legal requirements.

HOW APPRENDA SUPPORTS GOVERNANCE, RISK AND COMPLIANCE

Apprenda application deployment policies enable enterprises to control how applications are matched to infrastructure within and across clouds. This ensures that highly regulated data (such as that which falls under the governance of PCII or HIPAA) remains securely hosted on appropriate infrastructure and the business remains compliant.

App moves
by policy

PUBLIC CLOUD
DATA CENTER

PRIVATE
DATA CENTER
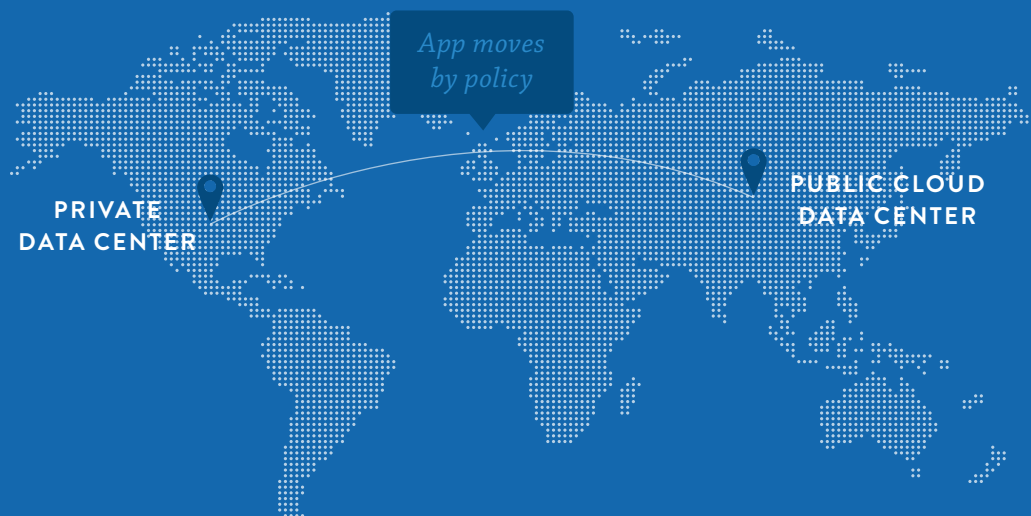
5. Energy Efficiency

Reducing environmental impact through server reduction and multi-tenancy

True enterprise-grade PaaS solutions are able to provide two tiers of multi-tenancy. First is multi-tenancy at the platform/ infrastructure level. By aggregating infrastructure into a single, unified resource pool, it allows deployed applications to share resources in a highly efficient way. This eliminates the need to dedicate entire servers or VMs to a single application, and potentially make significant reductions to the enterprise server footprint.

The second tier of multi-tenancy provides standard, single-tenant web and SOA guest applications – the applications that enterprise IT developers build – with true application-level, single instance multi-tenancy. Single instance multi-tenancy is a software architecture principal where application components such as the database, web services and user interfaces are shared across many customers, rather than each customer having their own copy. This complex architecture (popularized by the world's best SaaS providers) can also be used to increase the efficiency of delivery for a variety of enterprise application use-cases.

HOW APPRENDA SUPPORTS ENERGY EFFICIENCY

Apprenda's zero effort, application-level, single instance multi-tenancy isolates end users by handling data partitioning, request routing and authorization security at the application server layer – even though end users are sharing resources. Furthermore, Apprenda gives providers the ability to define certain aspects of the application's multi-tenant behavior, such as whether data from multiple customers can be mixed in database deployments or separated into dedicated databases. This powerful concept of configurable "drop-in" single instance, multi-tenancy provides a massive improvement to the utilization of data center resources and, more importantly, a significant boost to energy efficiency initiatives.

Server

FIND OUT FOR YOURSELF

This paper has outlined five key ways in which Private PaaS can revolutionize data centers and the enterprise web hosting function. If you are interested in finding out more about Apprenda's Private Platform-as-a-Service, the best way is to experience it for yourself. Apprenda offers three simple ways to do this:

1. Sign up for the monthly Open Demo webinar
2. Request access to Apprenda Express – and explore the free version of the platform
3. Arrange a Proof-of-Concept (PoC) for your organization

All three can be accessed by visiting the Apprenda website.

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Apprenda, Inc.
433 River Street
Troy NY 12180