Oracle Platform as a Service (PaaS) FAQ

1. What is Platform as a Service (PaaS)?

Platform as a Service (PaaS) is a standardized, shared and elastically scalable application development and deployment platform delivered as a service. The platform typically includes database and middleware, as well as development, management, security and integration capabilities, all delivered as a service. Sometimes referred to as "Shared Services", PaaS challenges the notion that every application requires a unique technology stack unto itself and that businesses can't free themselves of rigid deployment scenarios for their packaged and custom applications. PaaS enables organizations to consolidate existing applications on a shared, common architecture, as well as build new applications that leverage the shared services provided by the platform. PaaS lets organizations achieve the fastest time to market with the lowest cost of ownership and management.

2. Why is PaaS important?

PaaS is an evolutionary approach to delivering middleware and database capacity needed to host applications. Many customers today have actually already implemented pieces of a PaaS solution. When fully implemented, PaaS delivers:

- Rapid (near real-time) capacity provisioning against physical servers
- Highly optimized application to server ratios and the ability to turn off spare capacity
- Cross-domain monitoring and proactive alerting
- Coarse or fine grained metering facilities to establish usage parameters for PaaS tenants

3. What are the overall benefits of PaaS?

One major benefit of PaaS is cost reduction. Organizations using PaaS techniques have reported operational savings of up to 50% compared to having individual project teams manage their own silo’ed technology stacks. The cost savings most commonly come from standardized and consolidated resources (e.g. servers) as well as elimination of redundant work across teams.

Another key benefit of PaaS is agility. PaaS customers are able to more rapidly deploy environments for development, testing and production. In some cases, the provisioning, configuration, and integration of a platform can take up the majority of an application production schedule. PaaS lets applications get into the hands of testers and end-users nearly as fast as they can be developed. Also, when application workloads fluctuate, PaaS scales out and in to better match supply with demand.
4. **What type of enterprises can most benefit from PaaS?**

Most organizations will see the cost reduction and increase in agility once they start implementing PaaS solutions. Organizations that will benefit the most often have one or more of the following characteristics:

- Application Time to Market is a key pressure for development teams. The ability to quickly move an application from concept to production should take as little time as possible.
- Considerable over-provisioned infrastructure. Data center consolidation efforts can be the catalyst to begin to adopt PaaS techniques.
- Difficulty aligning application utilization with stakeholders. Across a large application portfolio, PaaS will provide better metrics support for usage and chargeback.
- High operational costs. The net reduction of administrators for a set of applications has a measurable impact on the bottom line. PaaS is an attractive option when it is no longer cheaper to throw bodies at the problem.
- High degree of custom craftsmanship per application environment. When the loss of a single administrator has catastrophic consequences for application maintenance, it may be time to consider PaaS. PaaS encourages repeatable, formalized processes for administration using centralized management tools.

5. **What are Oracle’s PaaS offerings?**

Oracle offers a complete stack of software and hardware infrastructure products for customers and partners to build PaaS solutions. *Oracle Database* supports shared services deployment models. Companies can pool database resources and offer customers database-as-a-service in the form of a database cloud. Oracle Fusion Middleware offers the *Oracle Middleware Cloud Platform*, which includes a few key pieces: *Cloud Application Foundation, Cloud Integration, and Cloud Application Development*. Both *Oracle Database* and *Oracle Middleware Cloud Platform* are secured and managed by *Oracle Cloud Identity and Security*, and *Oracle Cloud Management* sets of products.
6. What is the role of Engineered Systems for PaaS?

Although PaaS is made up of software components such as database and middleware, that software obviously needs to run on hardware servers, storage and networking. Oracle’s unique Engineered Systems products – Oracle Exadata Database Machine and Oracle Exalogic Elastic Cloud – are pre-integrated and optimized combinations of hardware and software that deliver extreme performance, efficiency, security, manageability at a lower TCO. Exadata and Exalogic offer breakthrough performance which also makes them very efficient for database and middle tier consolidation of hundreds of applications. Both machines are elastically scalable both vertically and horizontally, and fully fault tolerant. They offer simplified deployment since they are pre-integrated and pre-configured by Oracle, not by the customer in their datacenter. And they offer lower TCO because they can reduce the total hardware and complexity of your environment. For these reasons, Exadata and Exalogic are the ideal foundation for PaaS.

7. What is the role of database for PaaS?

The role of the Oracle Database in a PaaS Cloud is where the significant value and efficiencies of Cloud computing are born. The database is the key consolidation point where pooled resources and agility, two key aspects of the Cloud, are derived.

Whether the database deployment is “Platform” consolidation where multiple databases reside and share the server and storage resources of a cluster or whether it is “Database” consolidation where different database schemas are combined into a single database running on a shared server or storage infrastructure, the database becomes the key consolidation point that drives business value for an organization.

Business value is achieved by:

Reducing IT costs: Fewer database elements (servers, storage, network components) all mean reduced capital expenditures. Fewer elements also means reduced operating expenditures because of the efficiencies gained in managing a consolidated database environment rather than a multitude of silo’d systems each with their own database.

Reducing Complexity: Fewer database elements coupled with standardization of operating systems, servers, database versions, and configurations makes for an easier to manage and more reliable environment.

Increasing IT agility: The heart of the PaaS database platform is an Oracle Real Application Clusters (RAC) environment. With this, database capacity can easily and quickly grow or shrink to accommodate varying workload volumes.

Improving Quality of Service: Previously silo’d Tier 2 and Tier 3 databases with no failover or just cold failover can now gain the industry’s best-in-class availability by being consolidated onto a shared Oracle Real Application Clusters environment. Where it might not have been
financially justified in a silo’d environment, a consolidated database environment extends its enhanced availability and security (due to RAC and the various security Database options it runs) to the non-mission critical databases that are now consolidated to run on that PaaS.

8. **What is the role of application deployment platform for PaaS?**

Most shared services platforms or private clouds are created to deploy custom-built or packaged business applications. Oracle Fusion Middleware’s Cloud Application Foundation is the recommended platform to run all of customers’ Java applications, including Oracle Applications. Oracle Cloud Application Foundation includes key products such as WebLogic Server, Oracle Coherence, and Tuxedo, and for customers who use Exalogic, the Exalogic Elastic Computing Software. Applications that run on these server products can leverage the latest performance and high availability features developed by Oracle.

9. **What are some services that can be deployed on PaaS?**

Once customers have built a PaaS platform to pool database and application deployment resources, there are additional, value-added, shared services that can be shared by multiple applications. These services are often required by multiple lines of businesses, span multiple business applications, and have high performance and availability requirements. Some more examples of these services include: structured and unstructured content services:

- Shared services for storing and managing structured and unstructured content
- Shared centralized integration backbone services to integrate applications. The central integration platform can support several different types of integrations, including integration among applications deployed within an enterprise; integration with partner applications; and integration with applications deployed on external cloud.
- Shared business process design and run time services, where business users can collaborate online to design and optimize business processes that span multiple groups. When complete, these processes would run on a central IT platform

IT departments can deploy these services centrally, on top of PaaS platforms. Once applications are deployed, security and application and systems management become key considerations. Oracle Identity Management Suite can provide identity services, such as access management on across multiple applications on a PaaS platform, identity federation, role management, etc. Oracle Enterprise Manager’s capabilities in resource provisioning, monitoring, management, charge back, and migration preparation can help address these concerns.