

Oracle in the Clouds (Is This Heaven or Iowa)??

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What is cloud computing?

Cloud computing is the provision of dynamically scalable and often virtualised resources as a service over the Internet on a utility basis. Users need not have knowledge of, expertise in, or control over the technology infrastructure in the "cloud" that supports them. Cloud computing services often provide common business applications online that are accessed from a web browser, while the software and data are stored on the servers.

(Wikipedia)



What is cloud computing?

- The term cloud is used as a metaphor for the Internet, based on how the Internet is depicted in computer network diagrams and is an abstraction of the underlying infrastructure it conceals.
- A technical definition is "a computing capability that provides an abstraction between the computing resource and its underlying technical architecture (e.g., servers, storage, networks), enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction." This definition states that clouds have five essential characteristics: on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service.

(Wikipedia)



What is cloud computing?

Key components:

- Commodity hardware
- Virtualization
- Elastic workload management
- Shared services



What is cloud computing?

Key attributes:

- Accessible via a Web browser or Web services API
- Zero Capital Expenditure (paying for service not capital equipment)
- You pay for what you use

Different varieties of cloud computing

Software Services – Typically Software as a Service (SAAS), examples: Gmail, Salesforce.com, Backpack from 37 Signals, etc.

Infrastructure Services – Hardware in the cloud, servers, basic software, etc.



What is being said about cloud computing?

Cloud computing is a new IT outsourcing model that doesn't yet meet the criteria of enterprise IT and isn't supported by most of the key corporate vendors. It's wildly popular with startups, exactly fits the way small businesses like to buy things, and has the potential to completely upend IT as we know it. And there's a high likelihood developers inside your company are experimenting with it right now. Forrester spoke with more than 30 companies in this market to determine its worthiness for enterprise consideration and found that it provides a very low-cost, no-commitment way for enterprises to quickly get new services and capabilities to market that entirely circumvents the IT department. Infrastructure and operations professionals can try to ignore it as it is just in its infancy, but doing so may be a mistake as cloud computing is looking like a classic disruptive technology.

Forrester Research – James Staten – “Is Cloud Computing ready for the Enterprise?”



What are the advantages of “cloud” computing?

Cost – Paid incrementally as a service not a capital expense based on usage. Additional “hidden” savings in data center costs, taxes, depreciation, etc.

Reliability/Capacity/Scalability – Easily expandable/shrinkable and typically configured for high availability

Maintenance – Hardware and software related issues are handled by the cloud provider



What are the advantages of “cloud” computing?

- Device/Location Independence - Applications available from anywhere with network connectivity
- Focus – Allows IT resources to focus on business innovation rather than coordinating infrastructure updates, server acquisitions and provisioning, network provisioning, high availability architectures.
- Security



What are the advantages of “cloud” computing?

Footprint/Requirements – All that is required is a computer with a web browser to access the applications this may reduce the cost of supplying hardware to users and also eliminates the management hassle of client software, etc.



What are the disadvantages/risks in “cloud” computing?

Control – the applications placed in the cloud are run on infrastructure of the provider...if the provider has a failure your application may be impacted. Recent failures at Google have highlighted this issue.

Security – Security must be carefully considered in the cloud environment and the fact that data is stored on the providers infrastructure may present auditing issues and/or data security concerns.



What are the disadvantages/risks in “cloud” computing?

Dependent on Internet connection – If your users cannot access the Internet due to a local network outage they won't be able to use cloud services.

Politics/Regulatory – Regulatory requirements may impact configuration and where servers associated with the application are hosted. Most providers today allow “availability zones” to give better “locational” awareness to the applications.

Flexibility – Dependent on the services and configuration provided you may be forced to deal with only certain versions of software used, etc.



What does the future hold for computing in the clouds?

Providers will continue to provide cloud based computing services but perhaps the larger impact will be in how private companies build their own “clouds” using the lessons learned from cloud computing providers and projects. Virtualization is already a huge initiative in most organizations.



Who provides cloud computing services?

Amazon

Google

Salesforce.com

Hewlett Packard (HP)

Microsoft



Licensing implications for Oracle specific “cloud” deployments

“**New Cloud Licensing.** Oracle customers can now use their existing Oracle licenses or acquire new licenses to deploy Oracle software in the Amazon Elastic Compute Cloud (EC2) environment. Additionally, Oracle will also provide Support for Oracle products deployed in the EC2 environment.”

<http://www.oracle.com/technology/tech/cloud/pdf/oracle-in-the-cloud-datasheet.pdf>



What do I need to deploy Oracle in the Amazon “Cloud”

Browser – Firefox

Browser Plugin – Elasticfox

[http://developer.amazonwebservices.com/
connect/entry.jspa?externalID=609](http://developer.amazonwebservices.com/connect/entry.jspa?externalID=609)



What do I need to deploy Oracle in the Amazon “Cloud”

PuTTY and PuTTYgen – For secure communications using authentication keys
www.chiark.greenend.org.uk/~sgtatham/putty/download.html

NOTE: Other SSH capable tools can also be used but most examples focus on freely available software like PuTTY

A secure FTP client for file transfers – CuteFTP, WinSCP, etc.



What do I need to deploy Oracle in the Amazon “Cloud”

Amazon EC2 Account -
<http://aws.amazon.com>



How do I deploy Oracle using Amazon AWS?

Create the Oracle Database Instance

- Start up Elasticfox from the Firefox Tools Menu
- Set your credentials and create a key pair
- From the Images tab enter oracle in the search and choose ami-cecb2fa7

How do I deploy Oracle using Amazon AWS?

Right click and choose “Launch Instance of this AMI”

Instance tab will come up and new instance will show “pending” until basic setup is complete (typically takes 5-10 minutes)

Once complete right click on the new instance and choose “Copy Public DNS Name to Clipboard” to use for a PuTTY session.



How do I deploy Oracle using Amazon AWS?

Start PuTTY using the host copied from the instance and importing the key pair created previously.

Login as root

Answer questions (defaults fine) to create database and do all basic startup

NOTE: Db creation will take another 5-15 minutes



How do I deploy Oracle using Amazon AWS?

Make changes in Security group to allow http/https access to port 8080 and 1158 for Apex and the DB Control

NOTE: If you wish to use TOAD or other client tools you'll need to open up the TNS port (1521 by default) and create the appropriate TNSNAMES entry.

How do I deploy Oracle using Amazon AWS?

Test connectivity with DB Console...

<https://<Instance Public DNS name>:1158/em/console>

Test access to oracle account via PuTTY

Test access to APEX...

http://<Instance Public DNS name>:8080/apex/apex_admin



So is this heaven or Iowa?

- There are a lot of advantages and the simplicity of getting up and running is impressive.
- Dependent on the size and needs this type of solution could be an excellent value.
- There could be significant headaches with tuning/tweaking, configuring, troubleshooting...hard to tell without a lot of experience.



So is this heaven or Iowa?

- Recent “cloud” outages point out the potential impact...just like the Titanic even the most “unbreakable” setup can be impacted still.
- Key success factor is the establishment of a SLA with the provider for critical applications.

References/Resources

Oracle's Cloud Computing Center...

<http://www.oracle.com/technology/tech/cloud/index.html>

Amazon Web Services

<http://aws.amazon.com/>

Oracle Magazine – David Peake – Building Applications in the Cloud

<http://www.oracle.com/technology/oramag/oracle/09-sep/o59browser.html>

Cloud Application Architectures – George Reese



Resources

This presentation will be available at:

VOUG Website: www.voug.org

B2B Website: www.b2bsol.com (under
Resources)

Email: gmays@b2bsol.com

