**CS551 Advanced Software Engineering**

Feb. 25 (T), 2014

In-Class Exercise

<http://cloud-computing.findthebest.com/compare/5-15-17-24/Amazon-EC2-vs-Google-App-Engine-vs-Microsoft-Windows-Azure-vs-IBM>

Name:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Amazon**  **AWS** | **Google**  **AppEngine** | **Microsoft**  **Azure** | **IBM**  **Smart Business Dev.** |
| Focus | | INFRASTRUCTURE AS A SERVICE. | PLATFORM AS A SERVICE. | PLATFORM AS A SERVICE. | INFRASTRUCTURE AS A SERVICE. |
| Infrastructure & Virtualization Architecture | | OS running on XenApp Reference Architecture. (Defines distinct Roles and worker groups that you can create and scale out independently.) | APPLICATION CONTAINER | OS LEVEL THROUGH FABRIC CONTROLLER. | HYPERVISORS |
| Platforms | | Windows Server from 2003-08, Ubuntu Linux, OpenSUSE Linux, 32 bit Amazon Linux, Oracle Enterprise Linux. | Windows Operating system version 2008 and Linux OS. | Windows Server 2003 and 2008, Ubuntu Linux, Oracle Enterprise Linux, Red Hat Enterprise Linux. | Suse Linux, Red Hat Enterprise Linux, Windows server 2008. |
| Persistent Storage | | 5 GB standard storage for Amazon S3 and 30 GB for Amazon Elastic Block Store. 160 GB 48 TB High Across 24 HDD. | 500MB | 225 GB | 60 GB |
| Monitoring | | YES (free)  Monitoring is done by using Amazon CloudWatch. (It provides Reliable, Scalable and flexible Monitoring Solutions.) | NO | YES | YES |
| Load Balancing | | Yes, (for Elastic Load Balancing new feature added i.e. “Access Logs” which records all requests sent to load Balancer and is used for later analysis.) | Yes | Yes | Yes |
| Message Queues | | It is done by using Amazon Simple Queue Service. (Amazon SQS) | Yes it is possible. | Yes it is possible | Yes it is possible |
| Development Tools | | - Simple command line access to Amazon EC2 and Amazon S3.  - JavaScript scratch pad for Amazon simple DB.  - AWS cloud Formation command line tools.  - Cloud Former template creation tool.  - AWS Elastic Wolf client console tool. | -APP Stats(API call profile tool which records events.)  -Datastore SQLite stub  -Local unit Testing  -Image Manipulation.  -Dos protection Service configuration. | -Microsoft .Net  -Microsoft SQL services  -Share point services. | IBM Rational tools |
| Integration with other services | | YES | YES | YES | YES |
| Web APIs | | YES | NO | YES | YES |
| Programming  Framework | | Java, python, Ruby, PHP. | Java, Python | Microsoft.Net, C#, java, Ruby. | C#, Java, python PHP Ruby. |
| Pricing | Machine | $0.145 per hour | $0.10/hour | $0.18 per hour for 2 crores. | $0.0965 per hour |
| Storage | $0.125 per GB/month | $0.18/GB per month | $0.92 per GB per month | $0.19 per GB per month. |
| I/O | $3.580/ hour | $0.08 per hour | $0.72 per hour | $0.125 per hour |
| Bandwidth | Inbound-0₡ per GB  Outbound-12₡ per GB. | Inbound-free  Outbound-12₡ per GB | Inbound-$0.10 per hour  Outbound-$0.12 per hour | Inbound-$0.15 per hour  Outbound-$0.15 per hour. |