**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>

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|  | | **Amazon**  **AWS** | **Google**  **AppEngine** | **Microsoft**  **Azure** | **IBM**  **Smart Business Dev.** |
| Focus | | Iaas | Paas | Paas and Iaas | Iaas |
| Infrastructure & Virtualization Architecture | | OS Level running | Application Container | Windows Azure Hypervisor | Hypervisors, Virtual Servers |
| Platforms | | Windows server 2003 and Linux server | Linux, Windows Server 2008 | Windows Server 2008 R2, OpenSUSE 12.1, CentOS 6.2, Ubuntu 12.04 | Windows and Redhat |
| Persistent Storage | | 160 GB (150 GB ephemeral storage) | 500MB | 1 TB | 60 GB Virtual disk |
| Monitoring | | Yes | No | Yes | Yes |
| Load Balancing | | Round-Robin | Auto | KEMP load master | Websphere Application Server Edge |
| Message Queues | | Amazon SQS | Yes | Windows Azure service bus | Yes |
| Development Tools | | Amazon EC2 AMI tools, Elastic Load Balancing API tools, Amazon CloudWatch Command Line tool, Auto Scaling Command line tool | AppStats, Datastore SQLite Stub, Zipserve | Windows Azure SDK, Microsoft .NET Services SDK | WebSphere sMash, IBM Mashup center, Lotus Forms Turbo |
| Integration with other services | | Yes | Yes | Yes | Yes |
| Web APIs | | Yes | No | Yes | Yes |
| Programming  Framework | | Java, Python, Ruby, PHP, .NET | Python, Java | Java, .Net, PHP, Ruby, Python | Java, Python, Ruby, C# |
| Pricing | Machine | 0 USD per GB | 0.10 USD per GB | 0.10 USD per GB | 0.10 USD per GB |
| Storage | 0.15 USD per GB per month | 0.18 USD per GB per month | 0.15 USD per GB per month | 0.19 USD per GB per month |
| I/O | 0.10 USD per GB | 0.08 USD per GB | 0.07 USD per GB | 0.12 USD per GB |
| Bandwidth | 0.27 USD per GB | 0.12 USD per GB | 0.22 USD per GB | 0.30 USD per GB |