**CS551: Advanced Software Engineering**

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| --- | --- | --- | --- | --- |
|  | Amazon AWS | Google AppEngine | Microsoft Azure | IBM Smart Business Dev |
| Focus | Iaas | Paas | Paas | Iaas+Paas |
| Infrastructure & Virtualization Architecture | OS level running on Xen hypervisor | Application container | Hyper-V | Hypervisors |
| Platforms | Linux, Oracle ,Mason,  Servlets,Perl,C++,Windows,  Jboss | Windows, Mac OS X, Linux, PHP | Windows server 2008, Windows server 2003, Ubuntu,Mac,Linux | Windows Server, Linux, Red Hat |
| Persistent Storage | Amazon Elastic Block Store (Amazon EBS)  Amazon Simple Storage Service (Amazon S3) | Gdisk bulk storage | Standard Application storage | Bulk Storage |
| Monitoring | Yes(not free) |  |  |  |
| Load Balancing | Elastic load balancing with extra charges  ($0.025 per Elastic Load Balancer-hour) |  |  |  |
| Message Queues | Simple Queue Service (SQS)  Simple Message Service(SMS) | Push Queues  Task Queues | available |  |
| Development tools | [Amazon EC2 AMI Tools](http://aws.amazon.com/developertools/368)  [Elastic Load Balancing API Tools](http://aws.amazon.com/developertools/2536)  [Amazon CloudWatch Command Line Tool](http://aws.amazon.com/developertools/2534)  [Amazon EC2 API Tools](http://aws.amazon.com/developertools/351)  [AWS CloudFormation Command Line Tools](http://aws.amazon.com/developertools/2555753788650372) | AppStats,  Datastore SQLite Stub,  Local Unit Testing, Zipserve | Microsoft .Net services, Microsoft SQL server services, Microsoft dynamics CRM services | IBM Rational tools,  Java plugin for Eclipse |
| Integration with other tools | Yes | Yes | Yes | yes |
| Web APIs | Yes | No | Yes | Yes |
| Programming Framework | Java,JavaScript,PHP,Python,  Ruby,Windows & .net | Python,Java | .Net,Java,Node.js,PHP,  Python,Ruby |  |
| Pricing Machine CPU |  |  |  |  |
| Pricing Storage |  |  |  |  |
| Pricing I/O |  |  |  |  |
| Pricing Bandwith |  |  |  |  |