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| --- | --- | --- | --- | --- | --- |
|  | | Amazon AWS | Google App Engine | Microsoft Azure | IBM Smart Business Dev. |
| focus | | Infrastructure | Platform | Infrastructure, Platform | Platform |
| Infrastructure and virtualization architecture | | EC2 upon which you can instantiate 32 or 64 bit Amazon Machine Images or upload your XEN virtual machine images | Specification provided by google | Servers at back end runs in virtual machines on Windows Azure while front end is in .NET. Servers can be customized according to your specifications | Virtual machine instances-multiple sizes for 32 or 64 bit architectures |
| Platforms | | Infrastructure as a Service(IaaS) | Platfrom as a Service(PaaS) | Platfrom as a Service(PaaS) Infrastructure as a Service(IaaS) | Infrastructure as a Service(IaaS) |
| Persistent Storage | | Amazon Elastic block store, Simple storage service | Gdisk - bulk storage, Google Cloud Sql | Azure Cloud Storage | Bulk storage |
| Monitoring | | Amazon Cloud watch | Google Cloud Monitoring | Performance is managed in the Azure management portal | IBM smart cloud monitoring / IBM Tivoli provides cloud availability. |
| Load Balancing | | Elastic load balancing | Google compute engine | Load balancing is done in two levels such as DNS and the Network level | Elastic load balancer is used to provide load balancing |
| Message Queues | | Amazon Simple Queue Service(SQS), Simple Message Service | Two queues are used Push and Pull queues. | Azure Data Queues and Service Bus queues. | Delivered with IBM WebSphere Message Queue and Soft Layer message queue |
| Development Tools | | AWS Toolkit for Eclipse, AWS Toolkit for Visual Studio, AWS Management Console | PyCharm Google Web Toolkit, Netbeans, Eclipse, IntellIJ, Maven, Git Jenkins | SDK’s used are .Net, Java, Node.js, PHP, Python  Command Line Tools used are Windows Powershell, Azure Command line interface. | IBM Bluemix |
| Integration with other services | | S3 ( Simple Storage Service) and EC2 (Elastic Compute Cloud) | Google App Engine can be integrated with google cloud services and API’s | Can integrate with Saas applications and Microsoft BizTalk Server | Open Clove, Sanebox, Ariba, CRM etc |
| Web APIs | | EC2 API, Java API, etc. | Blobstore API, Mail API | .NET web API, ASP .NET API | REST Java API |
| Programming Framework | | Java, .Net, Python, Ruby, PHP | Python, Java, PHP | Node, PHP, Python, Ruby, .NET, Java | Node, Ruby, Java |
| Pricing | Machine CPU | $0.14/hr | $0.10/hr | $0.12/hr | $0.10/hr |
| Storage | $0.30/GB/month | $0.15/GB/month | $0.15/GB/month | $0.15/GB/month |
| I/O | $0.01 / 1000 requests | $0.02 / 1000 requests | $0.01 / 1000 requests | $0.01 / 1000 requests |
| Bandwidth | $0.10/GB | $0.10/GB | $0.10/GB | $0.30/GB |

Cloud Computing Services Comparison

Bhargavi Vepuri (CLASS ID-52)