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|  | | Amazon AWS | Google App Engine | Microsoft Azure | IBM Smart Business Dev. |
| Focus | | Public sector, government agencies, educational institutions | Rapid develop, deploy and iterate application without system administration. | Public cloud | Hybrid cloud and private cloud |
| Infrastructure and virtualization architecture | | Flexibility to launch application regardless of use case or industry | Uses search engine infrastructure with redundancy, global network and products like spanner, Flume | Deploy a full range of open and community driven OS and software solutions. | Flexibility to have public private or hybrid clouds depending on business needs. |
| Platforms | | IAAS | PAAS | IAAS, PAAS | IAAS |
| Persistent Storage | | Amazon Elastic Block store (EBS) allows user to create storage volumes attachment to Amazon EC2 instances. | MySQL using cloud SQL, object storage using cloud storage. | Standard Application storage.  Uses Azure SQL database in virtual machines, free to run NoSQL tools such as Mongo DB and Casandra. | Provisioned separately from any particular instance, and can be attached to running under the same account in the same data center. |
| Monitoring | | Amazon cloud watch is the monitoring service. | Google cloud uses the monitoring API in the developer’s console. | Their two levels of load balancing   1. DNS level which uses round robin and traffic manager methods   Network level –done with Azure load balancer. | IBM smart cloud monitoring tool monitors the health and performance of a private cloud infrastructure. |
| Load Balancing | | Uses ELB (Elastic Load Balancing) that automatically distributes incoming traffic across multiple instances. | Use to make further scale out capabilities in Google compute engine. | There are two levels of load balances. First DNS level uses round robin and traffic manager methods and Second Network level uses Azure load balancer. | Elastic load balancing is a shared service that provides routing and load balancing to multiple deployed web applications. |
| Message Queues | | SQS: Simple Queue Service, which is a fast, reliable service. SQS makes it simple and cost-effective.  SMS: Simple Message Service. | Push Queues. (these are written in Java)  Task Queues and pull Queues | Azure Data Queues. Service Bus Queues | Web sphere and Soft Layer Message Queues |
| Development Tools | | Primary SDKs, IDE Toolkits and command line tools. | Eclipse, IntellIJ, Maven, Git, Jenkins, PyCharm | Azure SDKs, Azure PowerShell and command-line tools for management and deployment. | IBM Domino Designer, Connector for SAP solutions, Expeditor, Workflow, Enterprise Integrator for Domino |
| Integration with other services | | All services are designed to work together like the pieces on chessboard., Dynamo DB is integrated with other AWS | A number of API’s available like maps, contacts , calendar etc. | Large number of .NET services including line services. Microsoft Azures Biz Talk Services. | Sandbox, Open clove ,CRM |
| Web APIs | | Yes | Yes | Yes | Yes |
| Programming Framework | | .NET  Java  PHP  Python  Ruby | Python | .NET  Java  Node  PHP  Python  Ruby | Java  Node  Ruby |
| Pricing | Machine CPU | $0.14 / hour | $0.10 / hour | $0.12 / hour | $0.10 / hour |
| Storage | $0.25 / GB / month | $0.15 / GB / month | $0.15 / GB / month | $0.15 / GB / month |
| I/O | $0.01 / 1000 requests | $0.12 / GB / month | $0.01 / 1000 requests | $0.01 / 1000 requests |
| Bandwidth | $0.10 / GB | $0.10 / GB | $0.10 / GB | $0.10 / GB |

Bharat Viswanadham