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| --- | --- | --- | --- | --- | --- |
|  | | Amazon AWS | Google AppEngin | Microsoft Azure | IBM Smart Business Dev. |
| focus | | Public sector, government agencies, educational institutions | Rapid develop, deploy and iterate application without system administration, Platform | 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. | Uses Azure SQL database in virtual machines, free to run NoSQL tools such as MongoDB and Casandra. | Provisioned separately from any particular instance, and can be attached to running under the same account in the same data centre. |
| Monitoring | | Amazon cloud watch is the monitoring service. | Google cloud uses the monitoring API in the developer’s console. | Azure management portal makes the monitoring done. It can be set to minimal and verbose for each service role. | 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 | | Amazon simple Queue Service(SQS) which is a fast, reliable service | Contains Push queues, Task queue and pull queue | Both Azure queues and service Bus queues are implementations of this. | SoftLayer message queue helps us to build higher scalability in to applications with cost effective messaging and notification. |
| 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 | | DynamoDB is integrated with other AWS services | Google cloud services and APIs, Memcache | Microsofts BizTalk service | CRM, Ariba, sanebox, openclove, teampoint |
| Web APIs | | Yes | Yes | Yes | Yes |
| Programming Framework | | .NET  Java  PHP  Python  Ruby | Python | .NET  Java  Node  PHP  Python  Ruby | Java  Node.js  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 |

Cloud Computing Platforms Comparison