|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | Amazon AWS | Google App Engine | Microsoft Azure | IBM Smart Business Dev. |
| focus | | Public sector, government agencies, educational institutions | Infrastructure | Infrastructure | Platform, Infrastructure |
| Infrastructure and virtualization architecture | | Flexibility to launch application regardless of use case or industry. | Functionalities provided by Google | Deploy a full range of open and community driven OS and software solutions. | It can use consumed or self service. moreover benefits can be enjoyed privately as it’s secure |
| Platforms | | IAAS | PAAS | IAAS, PAAS | IAAS |
| Persistent Storage | | Amazon Elastic Block store (EBS) | Google Cloud storage | Uses Azure SQL database in virtual machines, free to run NoSQL tools such as MongoDB and Casandra. | IBM Web sphere,IBM Blue Mix |
| Monitoring | | Amazon cloud watch is the monitoring service. | Google cloud utilize 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 | | apply ELB (Elastic Load Balancing) that automatically distributes incoming traffic across multiple instances. | Google compute engine. | two levels of load balances.are used.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 | Azure Data Queues, Service Bus Queues | SoftLayer message queue helps us to build higher scalability in to applications with cost effective messaging and notification,Web sphere Message Queue |
| Development Tools | | Primary SDKs, IDE Toolkits and command line tools. | Eclipse, IntellIJ, Maven, Git, | Azure SDKs, Azure Powershell , Visual Studio,.. | 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 | Microsofts BizTalk service | CRM, Ariba, sanebox, teampoint |
| Web APIs | | Yes | Yes | Yes | Yes |
| Programming Framework | | .NET  Java  PHP  Python  Ruby | Python | .NET | 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 operations | $0.01 / 1000 operations | $0.01 / 1000 operations | $0.01 / 1000 operations |
| Bandwidth | $0.10 / GB | $0.10 / GB | $0.10 / GB | $0.10 / GB |

Cloud Computing Platforms Comparison