GOOGLE APP ENGINE

And

Microsoft AZURE

(PAAS EXAMPLE)

GOOGLE APP ENGINE

- ***Google App Engine*** (often referred to as GAE or simply App Engine) is a web framework and cloud computing platform for developing and hosting web applications in Google-managed data centers.
- Applications are sandboxed and run across multiple servers.
- App Engine offers automatic scaling for web applications as the number of requests increases for an application
- App Engine automatically allocates more resources for the web application to handle the additional demand.

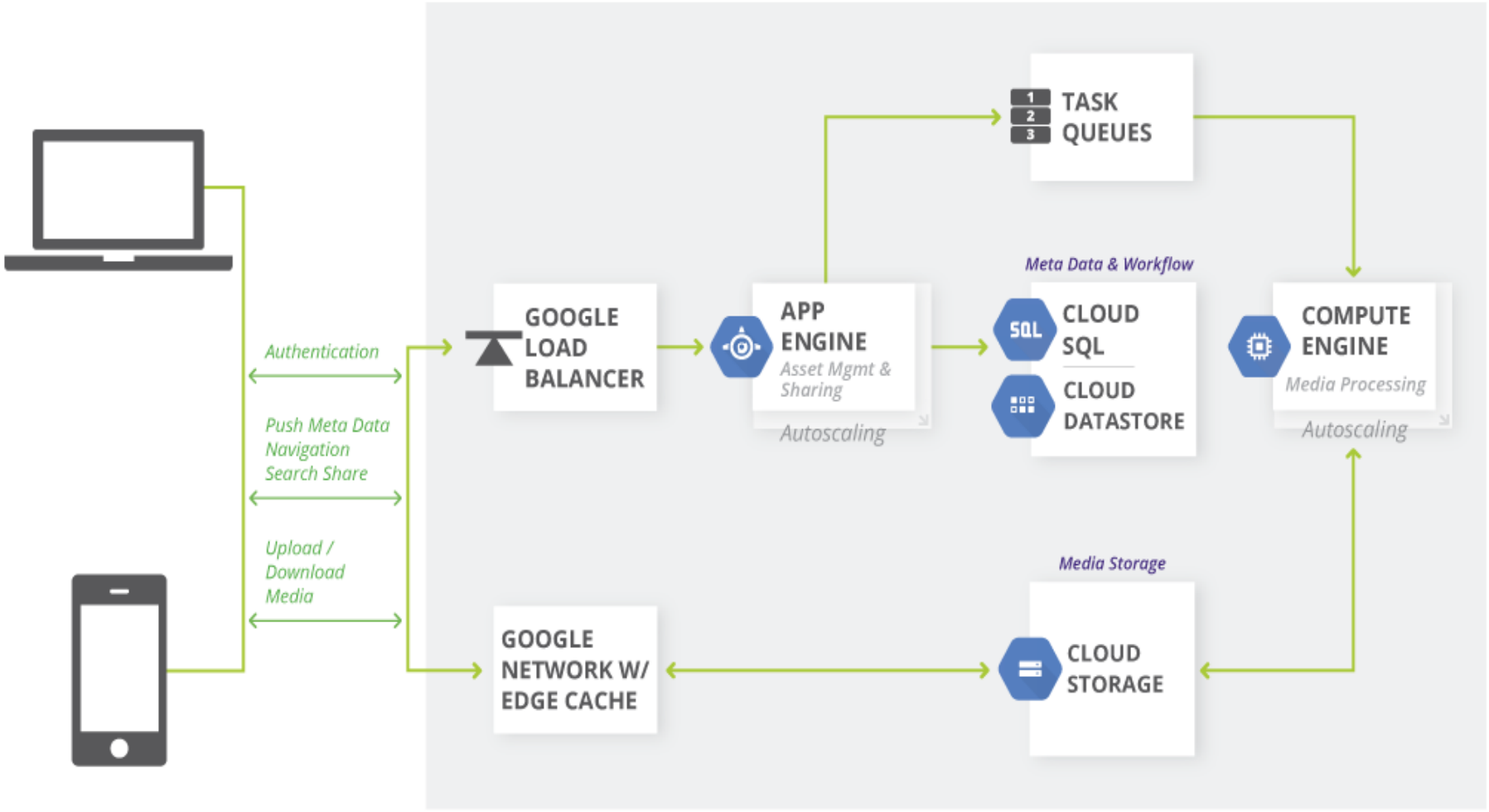
Developer(s)	Google
Initial release	April 7, 2008; 10 years ago
Stable release	1.9.63 / 27 February 2018
Written in	Python, Java, Go, PHP, Node.JS
Operating system	linux (glibc), Windows
Platform	little-endian 32bits
Type	Web framework, cloud computing platform
License	Proprietary, LGPL

Data Store in Google App Engine

Google Cloud Datastore is a **NoSQL** document database built for automatic scaling, high performance, and ease of application development. Cloud Datastore features include:

- Atomic transactions.
- High availability of reads and writes.
- Massive scalability with high performance.
- Encryption at rest.
- Fully managed with no planned downtime.

GAE Architecture



Features

- **Popular languages** Build your application in Node.js, Java, Ruby, C#, Go, Python, or PHP—or bring your own language runtime.

- **Open and flexible** Custom runtimes allow you to bring any library and framework to App Engine by supplying a Docker container.

- **Fully managed** A fully managed environment lets you focus on code while App Engine manages infrastructure concerns.

- **Powerful application diagnostics** Use Cloud Monitoring and Cloud Logging to monitor the health and performance of your app and Cloud Debugger and Error Reporting to diagnose and fix bugs quickly.

- **Application versioning** Easily host different versions of your app, and easily create development, test, staging, and production environments.

- **Application security** Help safeguard your application by defining access rules with App Engine firewall and leverage managed SSL/TLS certificates by default on your custom domain at no additional cost.

Advantages of App Engine over other Cloud Service Providers

- Automatic Load Balancers.: In case of heavy network traffic load balancers distributes the traffic preventing Denail of Service

- Highly Scalable: Automatic scaling and addition of newer instances according to traffic inflow.

Some underlying issues with App Engine

- Expensive.
- Service not available in all countries.
- Slow for CPU intensive processes.
- No base environment control due to API based system.
- Flaws in Security concept.

Differences with other application hosting

•Compared to other scalable hosting services such as Amazon EC2, App Engine provides more infrastructure to make it easy to write scalable applications.

•But can only run a limited range of applications designed for that infrastructure.

•Developers have read-only access to the file system on App Engine.

• Applications can use only virtual file systems.

Features of Google App Engine

- Cloud SQL
- Comprehensive
- Supports delivery testing and development of software
- Highly scalable
- Cost Saving
- Platform independent
- Easy to maintain
- Backup / Restore
- Scheduled Tasks
- Remote access
- Tasks Queue

Vendor Lock-In and Application Future generations

- A major challenge for the cloud computing industry is the lack of standards and subsequent vendor lock-in.
- Because deploying with one provider means necessarily adopting their specific tools, protocols and operating environments, migrating off their platforms to another provider can prove daunting and expensive in many cases, prohibitively so.
- GAE is no exception to this, as building an application in Google's PaaS involves writing software code customized to the nuances and specifics of the environment.

Contd…

- In short, GAE is an inviting PaaS for developers wishing to build their own cloud software in a robust and scalable environment.
- The platform offers an attractive complementary tier with a significant free usage quota and a competitive pricing model thereafter.
- Software architects using GAE to build and deploy applications can rest assured knowing that their SaaS is powered by the world's largest Internet company.

Microsoft AZURE

Services by Azure

Internet of Things

Power your digital transformation, collect untapped data and find new insights by connecting your devices, assets and sensors

Artificial intelligence

Artificial intelligence productivity for virtually every developer and scenario

Mobile

Reach your customers everywhere, on every device, with a single mobile app build

E-commerce

Give customers what they want with a personalised, scalable and secure shopping experience

Monitoring

Gain visibility into the health, performance and utilisation of your applications, workloads and infrastructure

Business intelligence

Drive better, faster decision making by analysing your data for deeper insights

Big data and analytics

Make the most informed decision possible by analysing all of the data you need in real time

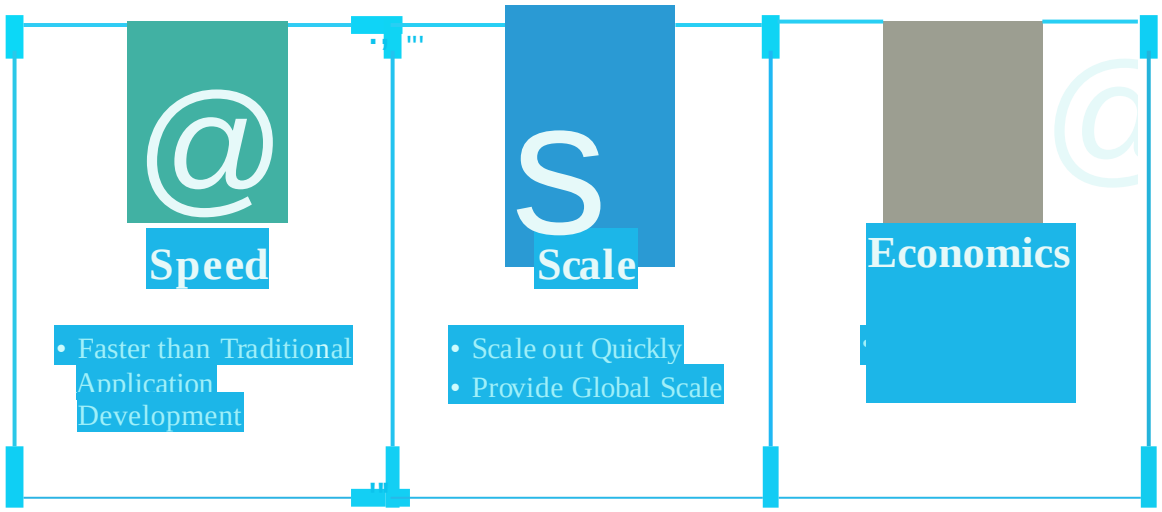
Blockchain

Quickly develop and deploy distributed apps on the blockchain of your choice

Comparison to other providers

- More compliance coverage than any other service provider.
- The only consistent hybrid cloud.
- More region coverage than any other cloud service provider.
- Complete analytics solution with limitless elastic scaling.
- Preconfigured IoT suite for easy to implement IoT solutions.
- Seamless integration with other technologies.
- Provides BaaS (Blockchain as a Service).

Why Use the Azure?



Business benefits

- **Microsoft Azure is Fast Across the Board**
- **Azure can Match your Global Reach**
- **Azure's has Integrated Development Environment**
- **Azure has a Fully Integrated Delivery Pipeline**
- **Disaster Recovery is Solved with Azure**