To get ride of administrators, huge investments on expensive hardware and human resources becomes true. Computing model in which different tasks are assigned using combination of connection, software and services accessed over a network is called “Cloud Computing”.

Simply this is a platform which allows users to run and host their web applications on Google’s infrastructure. These applications are easy to build, easy to maintain and easy to scale whenever traffic and data storage needed.

How does it work?

The application environment

Dynamic web serving, with full support for common web technologies

Persistent storage with queries, sorting and transactions

Automatic scaling and load balancing

APIs for authenticating users and sending email using Google Accounts

A fully featured local development environment that simulates Google App Engine on user’s computer

The sandbox separates the application in its own protected and reliable environment which is independent of the operating system, hardware or the physical location of the web server.

The Python Runtime environment

The Runtime environment uses Python programming language. All methods, except those ones which violates the sandbox restriction, like attempting to open a socket or write into a file, are included in the library. All applications code must be written entirely only in Python language and code with extensions written in C is not supported.

A web application which emulates all of the app Engine services on the local computer is included in the App Engine software development Kit. All of the APIs and the libraries available in App Engine are included in it.

Google app engine offers relatively low resource-provisioning overhead and an inexpensive pricing model for jobs shorter than one hour.

GAE is a simple parallel computing framework that supports development of computationally intensive HPC algorithms and applications.The underlying Google infrastructure transparently schedules and executes the applications and produces detailed profiling information for performance and cost analysis.

GAE supports development of scalable Web applications for smaller companies.

GAE hosts Web applications on Google’s large-scale sever infrastructrue.It has three components: calable services, a runtime environment, and a data store.

Each application instance executes in a **sandbox.**This prevents applications from performing malicious operations and enable GAE to optimize CPU and memory utilization for multiple applications on the same physical machine.Sandboxing also imposes various programmer restrictions:Applications have no access to the underlying hardware and only limited access to network facilities.Java applications can use only a subset of the standard library functionality.

Applications can’t use threads.A request has a maximum of 30 seconds to respond to the client.

Implementing a new application in our framework requires specialization for three abstract interfaces:JobFactory,WorkJob,and Result.

The master application is a Java program that implements JobFactory on the user’s local machine.JobFactory manages the algorithm’s logic and parallelization in several WorkJobs.Workjob is an abstract class implemented as part of each slave application-in particular, the runs() method, which executes the actual computational job.

A GAE environment can have three types of failure: an exceeded quota,offline slave applications, or loss of connectivity.