

5.3 GOOGLE APP ENGINE

- ❑ Google has the world's largest **search engine** facilities.
- ❑ has extensive experience in **massive data processing** .
- ❑ **Data items** are stored in **text, images, and video** and **are replicated to tolerate faults or failures.**
- ❑ **GAE** offers a **PaaS** platform supporting **various cloud and web applications.**



- In **2008**, Google announced the **GAE web application platform** .
- This platform specializes in supporting **scalable (elastic) web applications**.
- GAE enables **users to run their applications** on a **large number of data centers** .



5.3.1 GAE ARCHITECTURE

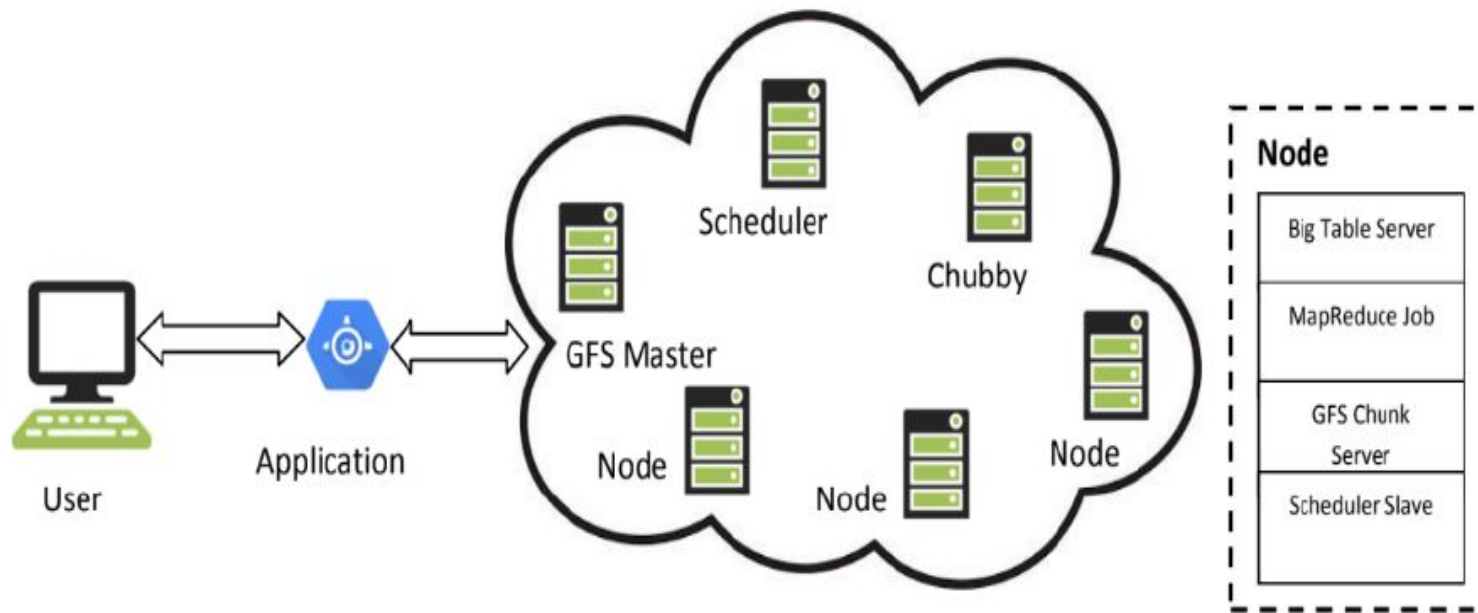


Figure 5.4 Google cloud platform



Building Blocks Of GAE

1. GFS

- Google File System
- is used for storing large amounts of data.

2. MapReduce

- is for use in application program development.

3. Chubby

- is used for distributed application lock services.

4. BigTable

- It offers a storage service for accessing structured data.

With these building blocks, Google has **built many cloud applications**. Users can interact with **Google applications** via the **web interface** provided by each application.



- **Third-party application providers** can use GAE
 - to **build cloud applications** for providing services.

- The **applications all run in data centers** under tight **management** by **Google engineers**.

- Inside **each data center**,
 - there are **thousands of servers** forming **different clusters** .

- Google is one of the **larger cloud application providers**:
 - although it is **fundamental service program** is private and outside people cannot use the Google infrastructure to build their own service.



Frontend in GAE

- The frontend is an **application framework** which is similar to other **web application frameworks** such as **ASP, J2EE and JSP**.
- GAE supports **Python and Java programming** environments.
- The frontend can be used as the
 - **dynamic web serving infrastructure**
 - **provide the full support of common technologies.**

