**MODULES:**

The system consists of five entities, namely

1. **Cloud Servers**
2. **Attribute Authority**
3. **End-users,**
4. **Data Consumers**

**Cloud Servers** Cloud Servers are employed to store, share and process big data in the system. The cloud servers are managed by cloud service providers, who are not in the same trust domain as end-users. Thus, cloud servers cannot be trusted by end-users to enforce the access policy and make access decisions. We also assume that the cloud server cannot collude with any End-users or Data Consumers.

**Attribute Authority** The attribute authority manages all the attributes in the system and assigns attributes chosen from the attribute space to end-users. It is also a key generation center, where the public parameters are generated. It also grants different access privileges to end-users by issuing secret

keys according to their attributes. The attribute authority is assumed to be fully trusted in the system.

**End-user End-users** are the data owners/producers who outsource their data into the cloud. They also would like to control the access of their data by encrypting the data with CP-ABE. End-users are assumed to be honest in the system.

**Data Consumers** Data consumers request the data from cloud servers. Only when their attributes can satisfy the access policies of the data, data consumers can decrypt the data. However, data consumers may try to collude together to access some data that are not accessible individually.