



**Cloud architecture overview:**

User access web server and then it will call read api to read data. Read api will check cache first then check the database read replica. Database has information of the report location in the object store then read api can obtain report from object store. Read api also gathers previous days report and send them in the queue. The email service can pick up work from queue to send emails asynchronously. The objects are also served in a CDN for faster access.

Admin will access a separate web server that calls write API. It will write the data in the master database and the object store.

**For reliability and resiliency:**

Basically, we can use active-active failover mode. The web server, api server, and other services are replicated in different regions. The data base is replicated in multiple SQL read replicas and they are distributed in different regions as well. Object store uses S3 bucket, and it offers 99.999999999% durability.

**Plan from code to prod:**

Build CICD pipeline and configure different stages.

Code commit -> Build code -> Deploy binary repo to testing server -> Testing -> Deploy to non-prod server -> Deploy to prod server

The team will need to participate in the whole CICD process to ensure the correct functionalities of the application.