Clowd

A cloud powered by a crowd

2 million tons

Of electronic device wastes every year. Most of them are thrown away without recycling.

Our project is about a cooperative cloud storage where it shares the user's remaining local storage with others who are in need.

Every year, a lot of manufacturers announce and release their new products and devices. Due to its relatively short refresh term, generally 1 year, people frequently buy new ones and throw out their existing devices leaving them doing nothing. But still they're functional and capable of storing something inside their intact hardwares. It is too wasteful to just throw away those outdated machines. What if you can reuse them as a personal cloud storage or even share them with other people and get a reward for it?

Infuse Life Through the Wireless Network

This project aims to gather any PCs which are currently not in use and make them reusable by sharing its storage with other people around the world.

Security

File Splitting
By splitting files into a number of pieces, even if clowders may dig into the file system and see the stored files, they wouldn't understand what those files are meaning.

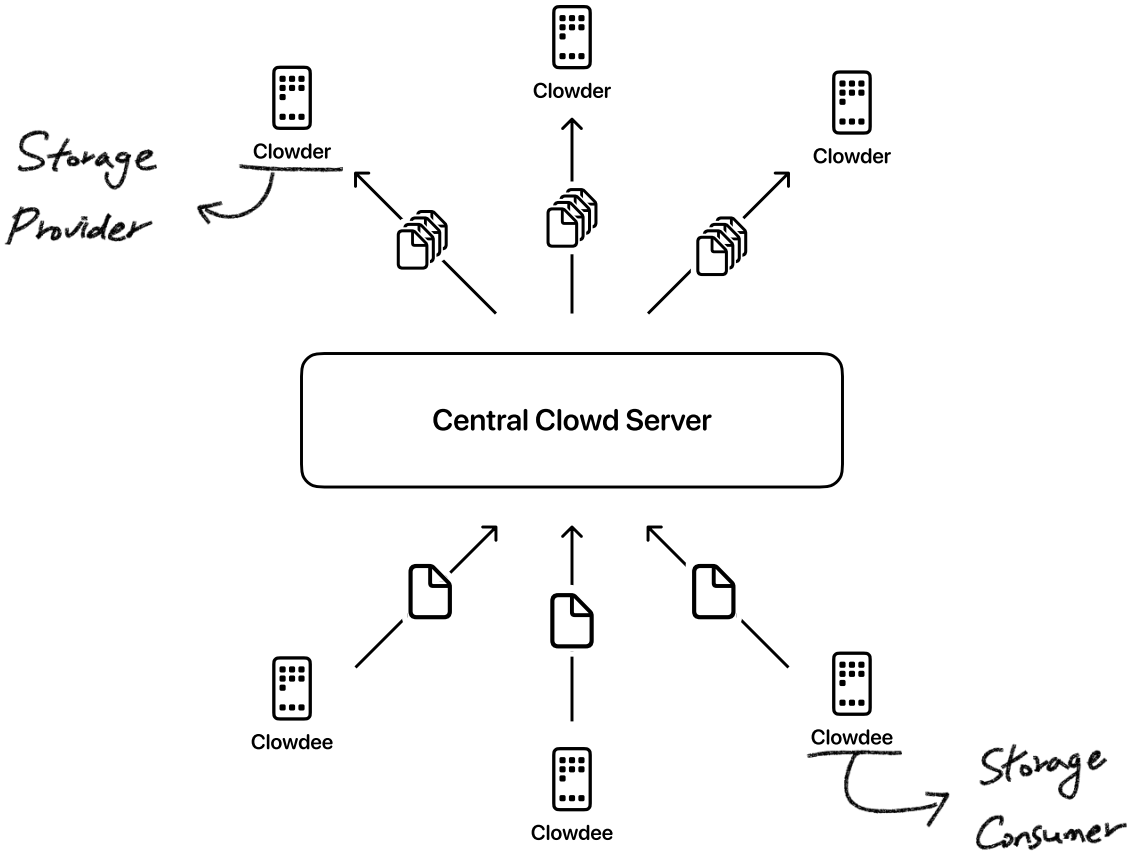
Encryption
We'll also encrypt the files to prevent the little possibility of file's security issue. For example, if a specific partition of a file contains a password, Clowder may abuse it. We can prevent this situation through the encryption.

Stability

Reed Solomon
Since we rely on users' storage system over which we don't have full control, there always might be a chance to lose data in any situation. By utilizing this amazing algorithm, we can mitigate those issues.

Reed-Solomon error correction
Are a group of error-correcting codes that were introduced by Irving S. Reed and Gustave Solomon in 1960. They have many applications, the most prominent of which include consumer technologies such as CDs, DVDs, Blu-ray discs, QR codes, data transmission technologies such as DSL and WiMAX, broadcast systems such as satellite communications, DVB and ATSC, and storage systems such as RAID 6.

- Wikipedia



Technologies

Go
Central Clowd server needs to be fast enough to handle tons of machines. To achieve this, we are going to exploit the power of the Go programming language. It is reliable, stable, and very performant at parallelism which is best suitable for our project requirements.

Node.js
Alongside this magnificently powerful processing, Node.js' higher flexibility and a lot of NPM modules allow us to develop tedious API works much easier.

React Native
Mobile application for Clowders will be built upon the web technologies using React and React Native (Expo).

Electron
This framework also empowers the web technologies to be a desktop application in which the system APIs are available.

You can see that we're sharing the same programming language, JavaScript, in three different sections of project. It delivers faster development experience through reusable knowledges and codes.