

myDropbox Design v2

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Supporting Multiple User with one bucket

Because there is a limit of 100 bucket per user we must find a way to support multiple user with one bucket

We will use a notion of “prefix” to split each user, the file each user uploaded will be in the following format as a key

“<username>/<filename>”

We use db to prevent duplicate username

We use rds (mysql) to keep the user upload consistent with our system they need to create a unique username for their account so that our prefix system will work by setting the username as primary key

Right now our db is very basic with the user table that have 2 fields

[user_table] -> (username, password)

Managing encoded key

When the user upload a file the key in the object will be encoded as
<username>/<filename>

When they view the file we decoded the key to display the filename only

When the user download the file we also decode the key will their username to
pull the correct file for them

Implement sharing with DynamoDB

There are two fields in the dynamodb table

- Username (HashKey)
- S3key (RangeKey)

The way it work that username -> have permission to this s3 object (because the key is encoded as <owner/filename>

We decide to go with eventual consistency because sharing is not an important features that require strong consistency

Sharing Implementation

When the user put a new file we also add a new item to dynamodb i.e.

(owner, <owner/filename>)

When the user share the item we also add a new item to dynamodb i.e.

(share to, <owner/filename>) here “share to” is the person you give permission to have access to the object