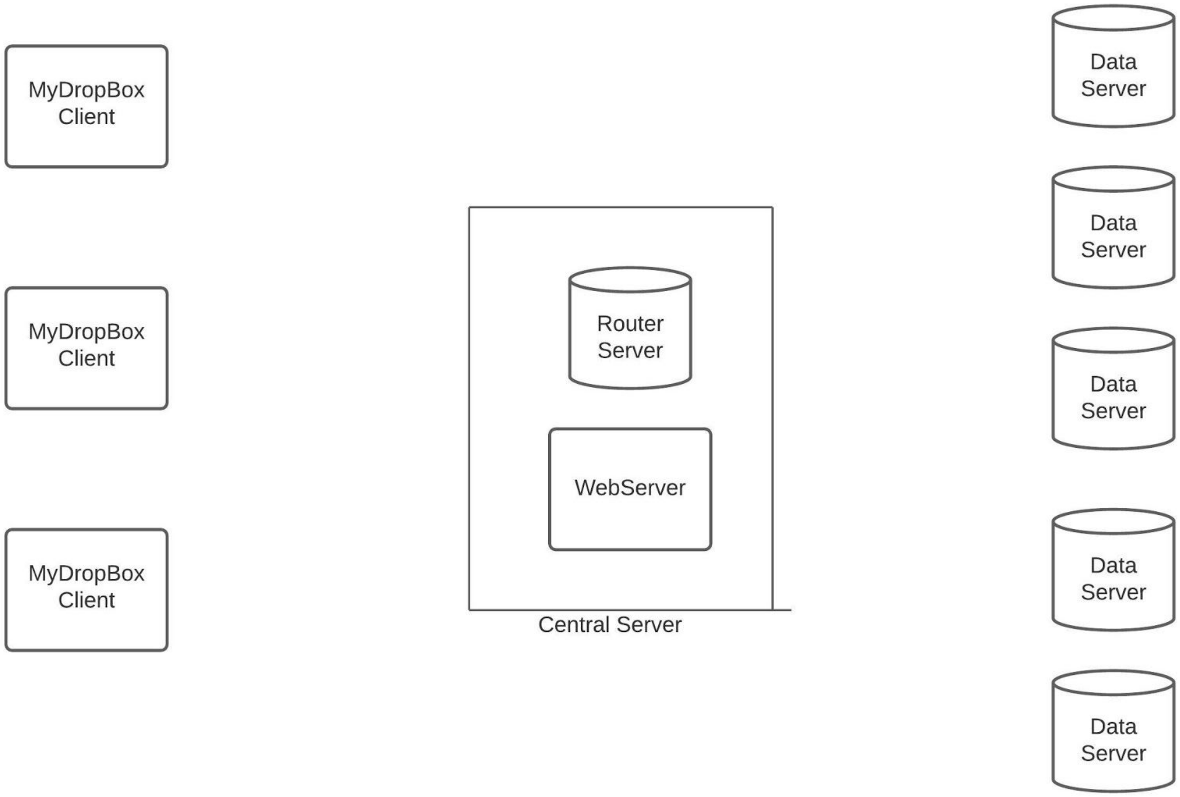
MyDropbox Project

Overview

MyDropbox is a simplified version of the original dropbox project written in go.The user can create an account on the website,download the application and upload files in the cloud.Each user has 5Gb of storage

System Architecture



MyDropBoxClient:The software that runs on the client's computer
RouterServer:Handles the routing of the requests to the dataServers
WebServer:Hosts the website
RouteServer and WebServer run on the same machine
DataServer:Server where we store the files of the clients.Each dataServer has its own database

Database schema

Central Server uses a mysql database with these tables:
DataServers:

Field	Type	Null	Key
ServerId	int	NO	PRI

MaxCapacity	int	NO	
IpAddr	varchar(255)	NO	
ListeningPort	varchar(20)	NO	
Available	tinyint(1)	NO	

<u>Users:</u>

Field	Type	Null	Key
Username	varchar(255)	NO	Pri
Email	varchar(255)	NO	
Password	varchar(255)	NO	
DataServerId	int	NO	MUL

DataServers use mysql with this table:
<u>Files</u>

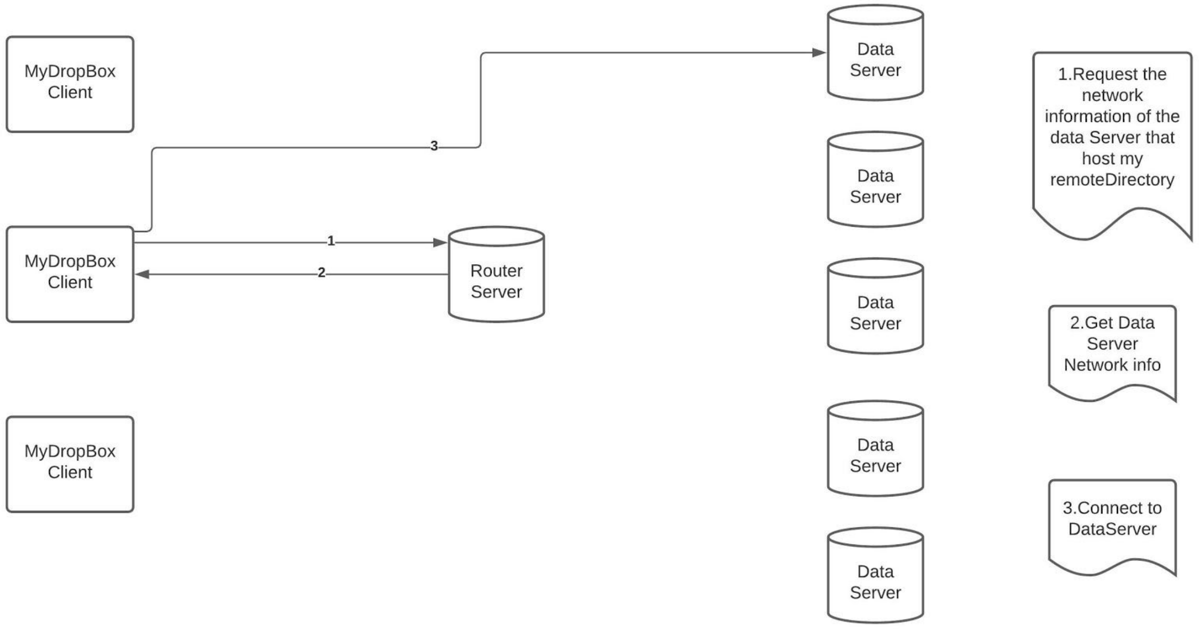
Field	Type	Null	Key
Filepath	varchar(255)	NO	Pri
Owner	varchar(255)	NO	Mul
LastModified	varchar(255)	NO	

How it works

- The user creates an account on the website
- WebServer assigns the user to the first available DataServer(The first DataServer with available space to store the user’s files.)
- The user downloads and installs the application

- A new directory with the name myDropbox is created on the user's computer.
- The files that are in the myDropbox directory are uploaded to the DataServer of the user
- The user can access the files from the website

How the client connects to the correct dataServer



How myDropboxClient works

MyDropboxClient runs in the background as a daemon process.It monitors the myDropbox directory for any new files,updated files or deleted files.In case of a new file or an update to the file,it sends the file to the DataServer to store it in the remoteDirectory and in case of a deleted file it sends a request to the dataServer to delete the file from the remoteDirectory.

How DataServer works

DataServer creates a directory for each user that is assigned there.It waits for requests from myDropbox clients to update their remoteDirectory or from the routeServer to send it a file that a user wants to download

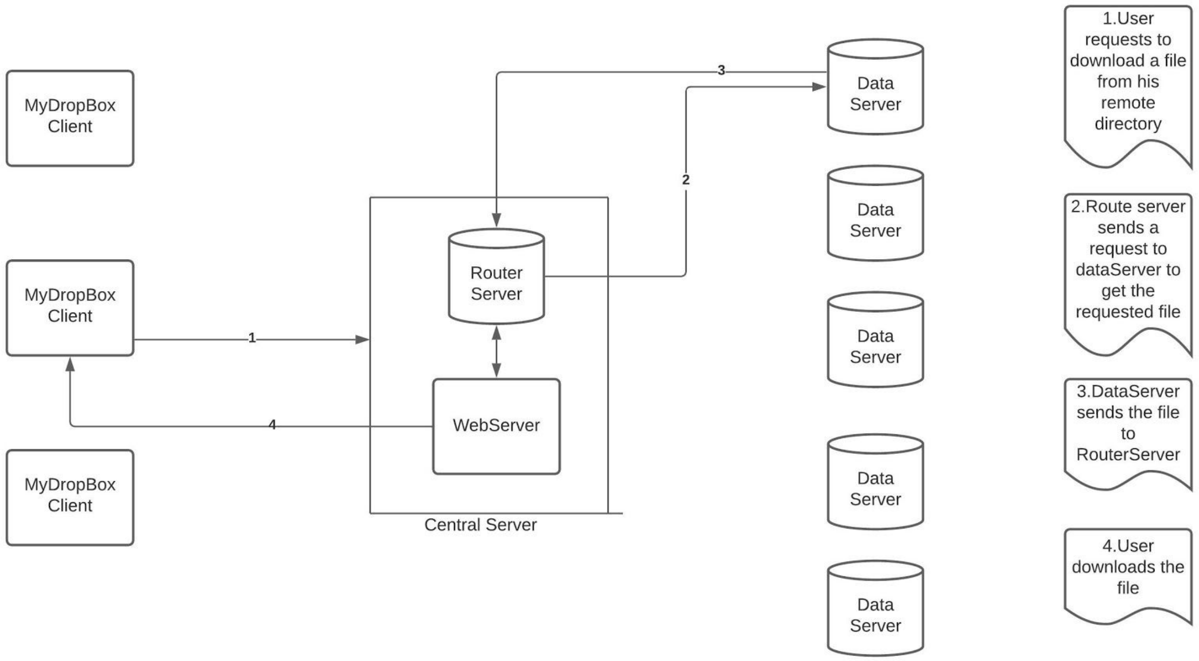
How webServer works

The webServer hosts the website which is written using Flask python framework.When a client logs in and requests to see the files that he has on the cloud the webServer sends a request to the dataServer that hosts the remote directory of the user to send the name of the files that the user has on the cloud.If a client request to download a file then the webServer sends a request to routeServer to get the file from the dataServer and then the webServer sends the file to the client

How routeServer works

RouteServer routes the myDropbox clients to the correct dataServers and requests a file that the user wants to download from the dataServer

How a client downloads a file



1.User requests to download a file from his remote directory

2.Route server sends a request to dataServer to get the requested file

3.DataServer sends the file to RouterServer

4.User downloads the file