Design Document

Captain CyBeard: Neil Before Us

Ryan Breitenfeldt | Noah Farris
Trevor Surface | Kyle Thomas

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Washington State University Tri-Cities
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Revision History

Revision	Date	Author(s)	Description
0.2	03.04.2020	KT	Filled in sections other than data dictionary
0.1	02.25.2020	KT	Document Creation

1 Introduction

This document will go over the design and architecture for the *Downloader* application that was laid out in `Requirements Specification`[2]. The design document will help the client (Cypherpath) and the software development team (Captain CyBeard) understand the architecture and functionality of the application.

Subsequent sections will go over the general architecture of the application in unified modeling language (UML) followed by a data dictionary. Afterwards the user interface and examples of information repositories needed by the application will be presented.

2 Architecture

The application will consist of ***NUMBER OF CLASSES*** in a model, view, controller architecture. The following UML diagrams will show the classes and their relationships with each other, along with their attributes and methods.

3 Data Dictionary

The Data Dictionary sections will describe what each class does, along with a more detailed view of its associations, attributes and methods that the class has.

4 User Interface

The User interface section will over the actions that a user will be able to take, explaining all menus, buttons, pull down menus, selections, etc. This section will also describe actions that system administrators will need to take to start and stop the application.

4.1 User Interaction

The user will interact with the application through the web interface. They will have several screens (views) to navigate through. Those will include the main screen to select the platform to download from (AWS, Dropbox, Google Drive, etc) and then will be presented with a view to enter their credentials. Once their credentials are entered they will be presented with the final view which contains their directory structure and contents and they will be able to multi-select which of those contents they would like to download.

For more information, readers can refer to the `Prototype Screenshots for the Downloader Application`[3] which will cover the work flow for the user and screenshots of the preliminary screens.

4.1.1 Platform Selection Screen

The first page of the application that the user will come across is a page to select which platform they will be viewing and downloading files from. This page will contain a *pull down* menu containing each of the cloud platforms that the application supports. Once the user has selected the one they want, they will press the *submit* button which will bring them to the next page.

4.1.2 Authentication Screen

After the user has selected their platform from the *platform selection screen*, the application will determine what kind of authorization information it needs from the user and prompt the user to enter this information. This will include a user name, and either a password, access token or both. Once the user enters their credentials for their cloud account they will press the *ok* button to allow the application to authenticate to the cloud platform and read their files. They will be redirected to the final screen at this point.

4.1.3 File Selection Screen

On the final screen of the application, after the user has selected and authenticated to a cloud platform they will be presented with the files and directory structure that they have on that platform. The user will be able to navigate their directory structure from this screen as well as multi-select which files and directories they would like to download.

Once the user is ready to download their files and directories they will click on the *download* button which will initiate the downloading of their files to where the user's web browser directs downloads to. Once the download is complete the user can exit the browser window, select the *start over* button to go back to the *Platform Selection Screen* or select a different set of files to download.

4.2 Administrator Interaction

The system administrator will interact with the application by using the built-in Django commands on the server that the application will run on. They will mainly only be starting and stopping the web application through this interface. Django does have a built-in web administration page but this application will not need to take advantage of this functionality.

4.2.1 Start Application

To start the application the system administrator will use the Django created *manage.py* file to invoke the application on its default port of *8000*.

```
$ python manage.py runserver
```

If the administrator would like to expose the webserver beyond *localhost* and let other devices connect or use a different port then they will pass an argument with the sources and new port. For example, to let any source connect to the server from port *8080* the administrator would type:

```
$ python manage.py runserver 0:8080
```

The "0" before the *colon* is shorthand for *0.0.0.0* which will allow any source to connect.

4.2.2 Stop Application

Since the web server will be a foreground process in the terminal, the web administrator will press *ctrl + c* to kill the process or any of the other ten thousand ways to terminate a process on a *nix system.

5 Information Repositories

The application uses several different information repositories. There will be one for each platform supported as outlined in the `Requirements Specification` [2]. For example, AWS storage will be an information repository as well as Dropbox. The user's local hard drive will also be an information repository during development and then once the client takes delivery their internal storage will become the information repository.

5.1 Cloud Platform Repository

The Cloud Repositories are the storage on the cloud for each platform that the user has files stored on. These files can be any type but will typically be an operating system ISO for the client's use case. These repositories can contain any arbitrary number of files and folders stored within this repository, the users will be able to navigate these through the application and select which ones to download. This information repository will be read only for the application and the user, they will not be deleting or adding contents to the cloud platform.

5.2 Local Storage or Internal Infrastructure

The second type of information repository that the application will contain is the location that the application will download the user selected files from. This will be the user's local storage during the development cycle and in production the client's internal infrastructure will be the repository for these files. This information repository will not be read from, it will only be written too. If the user would like to alter these files then they will need to use another application since the *Downloader* application does not include the user's hard drive in it's scope.

References

[1] Ryan Breitenfeldt, Noah Farris, Trevor Surface, Kyle Thomas. *Project Plan.* [*Project Plan for Downloader Application*] 2019.

[2] Ryan Breitenfeldt, Noah Farris, Trevor Surface, Kyle Thomas. *Requirements Specification.* [*Requirements Specification for Downloader Application*] 2019.

[3] Ryan Breitenfeldt, Noah Farris, Trevor Surface, Kyle Thomas. *Prototype.* [*Prototype Screenshots for Downloader Application*] 2019.

[4] Cypherpath.com. (2019). Cypherpath, Inc. [online] Available at: https://www.cypherpath.com/ [Accessed 21 Oct. 2019].

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