**Use Case Specifications**

Use Case ID: DFS0001  
Use Case Name: User Identification and Authentication

Relevant Requirements:

3.1.1.1 Users should be allowed to log in using their issued id and pin, both of which are alphanumeric strings between 6 and 20 characters in length.

Primary Actor: User

Pre-conditions: User wants to login.

Post-conditions: Server grant access to files and file list.

Basic Flow or Main Scenario:

User attempts login with credentials:

1. User provides credentials to system
2. System validates credentials with user list
3. System returns result of login validation.
4. System logs result

User with invalid credentials:

1. Failure count is incremented
2. System prompts user that either the userid or password is incorrect
3. When failure count reaches 6 userid is locked out

User with valid credentials:

1. System returns JWT token.
2. System informs client if admin
3. System initializes client

Extensions or Alternate Flows: System access controls

Exceptions:

Related Use Cases: All

Use Case ID: DFS0002  
Use Case Name: List all available files

Relevant Requirements: User can list available files

Primary Actor: User

Pre-conditions: Valid User Identification and Authentication

Post-conditions: A list of available files

Basic Flow or Main Scenario:

User requests list of available files:

1. User requests list of files
2. System returns list of available files
3. System asks if user would like to get a file

Extensions or Alternate Flows: None.

Exceptions:

Related Use Cases: DFS0001, DFS0003

Use Case ID: DFS0003  
Use Case Name: Get an available file

Relevant Requirements:

3.1.1.3 Users able to fetch file.

Primary Actor: User

Pre-conditions:

Valid User Identification and Authentication,

A file a user would like to retrieve

A directory to place files

Post-conditions: A file placed in the correct folder

Basic Flow or Main Scenario:

User requests an available file:

1. User gives system an index from file list.
2. Server locates location of file.
3. Server retrieves file from remote system.
4. Server places file in designated folder.
5. Client decrypts file.

Extensions or Alternate Flows: None.

Exceptions:

Related Use Cases: DFS0001, DFS0003

Use Case ID: DFS0004  
Use Case Name: Client initialization

Relevant Requirements:

System will store files in a hidden folder

System will retrieve files to a given folder

Primary Actor: User

Pre-conditions:

Valid User Identification and Authentication,

Post-conditions:

Client system has directories initialized

Server knows what files are available on system

Basic Flow or Main Scenario:

Client is initialized:

1. Storage folder is initialized
2. Retrieval folder is initialized
3. If JWT is older than 1 hour system will reauthenticate

Storage folder is initialized:

1. Client verifies storage folder exists
   1. If folder does not exist client creates it.
2. Client marks files as accessible in the server
3. Client sets permissions on storage folder

Retrieval folder is initialized:

1. Client verifies retrieve folder exists
   1. If folder does not exist client creates it.
2. Client sets permissions on storage folder

Extensions or Alternate Flows: None.

Exceptions:

Related Use Cases: DFS0001

Use Case ID: DFS0005  
Use Case Name: Menu user interface

Relevant Requirements: User can interact with system to list, upload and retrieve files

Primary Actor: User

Pre-conditions:

Valid User Identification and Authentication,

Session is initialized

Post-conditions: A selection has been made

Basic Flow or Main Scenario:

Main menu:

1. Client determines if user is admin
2. Client displays either user menu or admin menu
3. Client sends selection to server
4. Server sends response to client

Extensions or Alternate Flows: None.

Exceptions:

Related Use Cases: All

Use Case ID: DFS0005  
Use Case Name: Server Logs

Relevant Requirements:

3.1.1.5 Server able to log every action and saved log for at least 30 days.

Primary Actor: Server

Pre-conditions: Read in log file.

Post-conditions: Read out log file

Basic Flow or Main Scenario:

Read in log file:

1. Server opens logfile.
2. Server imports events newer than 30 days to memory.
3. Server writes all events in memory to log

Record event:

1. Server receives request for action.
2. Server add event object to memory.
3. Server writes event to end of log.

Extensions or Alternate Flows: None.

Exceptions:

Related Use Cases: All

Use Case ID: DFS0006  
Use Case Name: Upload File

Relevant Requirements:

3.1.1.4 Able to process upload and distribute file to multiple nodes.

Primary Actor: User

Pre-conditions: A file of any type to upload.

Post-conditions: Server logs saved file metadata and distributes file to 2 nodes.

Basic Flow or Main Scenario:

File upload request

1. User informs client they wish to upload file
2. Client informs server they wish to upload file
3. Server validates user has permission to upload file.

File is uploaded to local storage:

1. Client prompts user to browse to file.
2. User selects file.
3. Client copies file to storage location.
4. Client encrypts file.

File metadata is transferred to server:

1. Client gathers file metadata.
2. Client sends metadata to server.
3. Server logs metadata in memory.
4. Server find available second node.
5. Server requests file from client.
6. Client sends file to server.
7. Server places file in storage location on second node.
8. Server add second node to file metadata.
9. Server appends file metadata to end of file database.

Extensions or Alternate Flows: None.

Exceptions:

Related Use Cases:

Use Case ID: DFS0007  
Use Case Name: Server Initialization

Relevant Requirements:

3.1.4 Persistent Module Requirement.

Primary Actor: Server

Pre-conditions: Server started.

Post-conditions: Server is ready to respond

Basic Flow or Main Scenario:

Server startup:

1. Server starts logging process.
2. Server logs system time
3. Server reads in database file.
4. Server logs available nodes to system
5. Server checks system time
   1. If greater than 10 minutes system verifies available nodes.

Extensions or Alternate Flows: DFS0005

Exceptions:

Related Use Cases: All