

# Design Document: Manager Layer – User Info Manager

Hang Yuan ([hyuan211@gmail.com](mailto:hyuan211@gmail.com))

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## 0 Version Changes

*Since 0.1*

This version removed all designs for client side due to changes to system structure.

## 1 Goals

This module will manage the information of each user in remote server system (Note: based on our design, there are no User Info Manager on client side). This design document will introduce all functions needed for user info manager.

*This design doc is only designed for server side.*

## 2 Design

The design for User Info Manager module includes two parts: (1) system design; (2) file type and format.

### 2.1 System Design

The module will manipulate the *user.data* on remote server to manage all the users' basic information by reading, updating, creating or deleting user information or user account.

#### 2.1.1 Basic functions

Basic functions will have:

```
CreateUser (const UserInfo &userInfo)
CloseUser  (UserInfo &userInfo)
ReadUser   (UserInfo &userInfo)
UpdateUser (const UserInfo &userInfo)
Login      (const UserInfo &userInfo)
Logout     (const UserInfo &userInfo)
```

Function Name	Aim
CreateUser	Add the new user info into the specified <i>user.data</i> file
CloseUser	Delete relevant user information from the <i>user.data</i> file
ReadUser	Read and return all information of this user from its system file
UpdateUser	Update relevant proportion of user information. If the user info doesn't exist, create it first
Login	Verify account and password with the given information

Logout	Update logout time
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### 2.1.2 UserInfo structure

Based on the requirement of organizing data at server's database, two data structures are needed.

```
Struct UserInfoHeader {
    Unsigned totalUserNumber;
};

Struct UserInfo {
    char username[15];        // Example: user
    char domainName[15];     // Example: example.com
    char password[16];       // Example: 1a2b3c4d
    time_t lastLoginTime;
    time_t lastLogoutTime;
};
```

## 2.2 File Type and Format

### 2.2.1 File types

Because the user info data will be accessed multiple times, the user info files adopts *.data* as the file type.

### 2.2.2 File format

Users will be organized by its domain names in different folders. And each folder will have a user.data file to store all the user info data.

All files will contain a file header to indicate the total number of users in the file. User info data entries will follow the header one by one.