Deign Document: Manager Layer – User Info Manager

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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 Functions differ depending on sides

Basic functions will be:

```
CreateUser (const ServerUserInfo &userInfo)
CloseUser  (const string &userAccount)
ReadUser   (const string &userAccount, ServerUserInfo &userInfo)
UpdateUser (const ServerUserInfo &userInfo)
Login      (const ServerUserInfo &userInfo)
Login      (const string &userAccount)
```

Function Name	Aim
`CreateUser`	Add the new user info into the specified *user.data* file
`CloseUser`	Delete relevant user information from the *user.data* 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

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;
    bool changeStatus;      // True: changed, False: no change
};
```

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.