

## Design and Development of Peercloud Network Disk System Software

Lan Zhang <sup>a</sup>, Yingbin Guo <sup>b</sup>, Wenzhe Jiang <sup>c</sup>

Chongqing University of Posts and Telecommunications, Chongqing 400065, China

<sup>a</sup>838105047@qq.com, <sup>b</sup>917673991@qq.com, <sup>c</sup> jwz1998@live.com

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*Abstract: Peercloud network disk software is a simple, convenient, simple and practical private cloud disk. It is a fast P2P that operates through NAT penetration. It can directly obtain the relationship in remote NAT through proxy. data. The software uses a simple and convenient interface, easy to operate to attract users, allowing users to upload and download files in any situation (as long as there is a network), so that users can get convenience.*

*Keywords: Network disk system, penetrating NAT p2p, upload and download.*

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### 1. RESEARCH BACKGROUND

With the rapid development and maturity of information technology, network information has gradually become more complicated in the form of data. With the increasing popularity of the Internet, the interactive transmission of information has reached its peak. Under the premise of information sharing, how to obtain information quickly and accurately has become a key issue of concern. More and more large enterprises (such as Baidu, 360, etc.) know the importance of the network disk and vigorously develop the network disk technology. Therefore, the research on file sharing and retrieval services has become an important research field of Internet technology research.

With the continuous development of computer and network technology, the popularity of modern communication tools, computers play an important role in modern social life. With the increasing size of network information data, combined with the actual needs of modern people, people pay great attention to the development of network disk, and with the popularity of network technology applications, file sharing is increasingly needed by people. File sharing is to store the user's files on the Internet, so that users can "carry" their files, so that users and other friends can operate the files they need without the need for a USB flash drive or other devices: upload, Download, delete files, etc. People can be free from time and space restrictions, file sharing and uploading files are simple, easy to enter, and the interface is simpler and clearer. Under the premise of simple and clean software interface, the software pays attention to the actual effect of software uploading and downloading, so that users can easily understand and operate quickly when they experience this client software. The development of this software is to develop a client software on the PC side under the premise of having the interface of the server, so that the user can successfully use the cloud disk on the PC side, and completely become a software for the client to interact with the server.

## 2. THE AIM AND MENING OF THE RESEARCH

The goal of the software research is to develop the cloud disk software used on the PC side based on the server interface, call the interface of the server, with the purpose of fast transmission and communication of data and the need for large space capacity. In the Internet, the file upload speed reaches a higher level, and the space capacity is large and unlimited, and a large multi-format file can be uploaded;

The significance lies in the vigorous development of the network disk today. The development team pays more and more attention to the diversity of the functions of the network disk, which leads to the complexity of the software, the user experience is poor, and the operation is difficult. The development of this software is to focus on the simplification of the software, the interface is simple, the operation is simple, the uploading and downloading speed and other functions are better, so that users have a good sense of experience, and strive to change the public's operation on the network disk is difficult, difficult to get started Cognition.

## 3. SOFTWARE ARCHITECTURE

### 3.1 System logic architecture

The Peercloud network disk system software adopts the more commonly used C/S structure, which is the client/server mode. Through it, the advantages of the hardware environment at both ends can be fully utilized, and it is the structural system of the software system, and the tasks are reasonably allocated to the client end and the server end, thereby achieving the purpose of reducing the communication overhead of the system. Many application software systems today use a two-tier structure in the form of Client/Server, which conforms to the development direction of the current application software system, allowing users from the inside to the outside to access existing and new application systems, and through the present Some applications use logic to extend new applications.

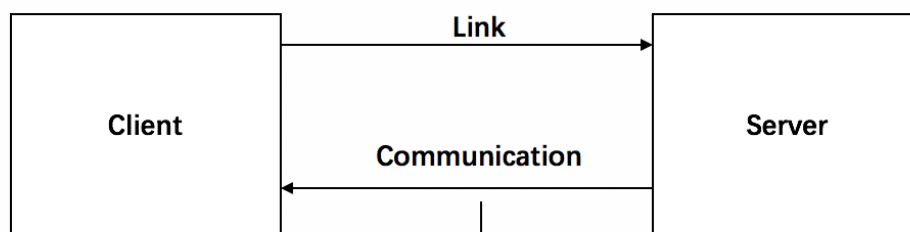


Figure 3-1. System logic architecture

### 3.2 Business function architecture

The Peercloud network disk software system has user login registration and PC synchronization (the system generates a folder and server connection, and after the connection is successful, performs subsequent operations of the network disk), and the user sets and manages three large modules. The user login registration module has two sub-modules: user login and user registration; the module that connects the system to generate the folder and the server includes adding (ie, uploading) files, traversing the files in the server (ie, updating and downloading), deleting files, and modifying files. , modify the folder and other sub-modules; user settings management has Chinese and English conversion, binding sub-accounts, log-out users, select upload and download file types, view basic information 5 sub-modules.

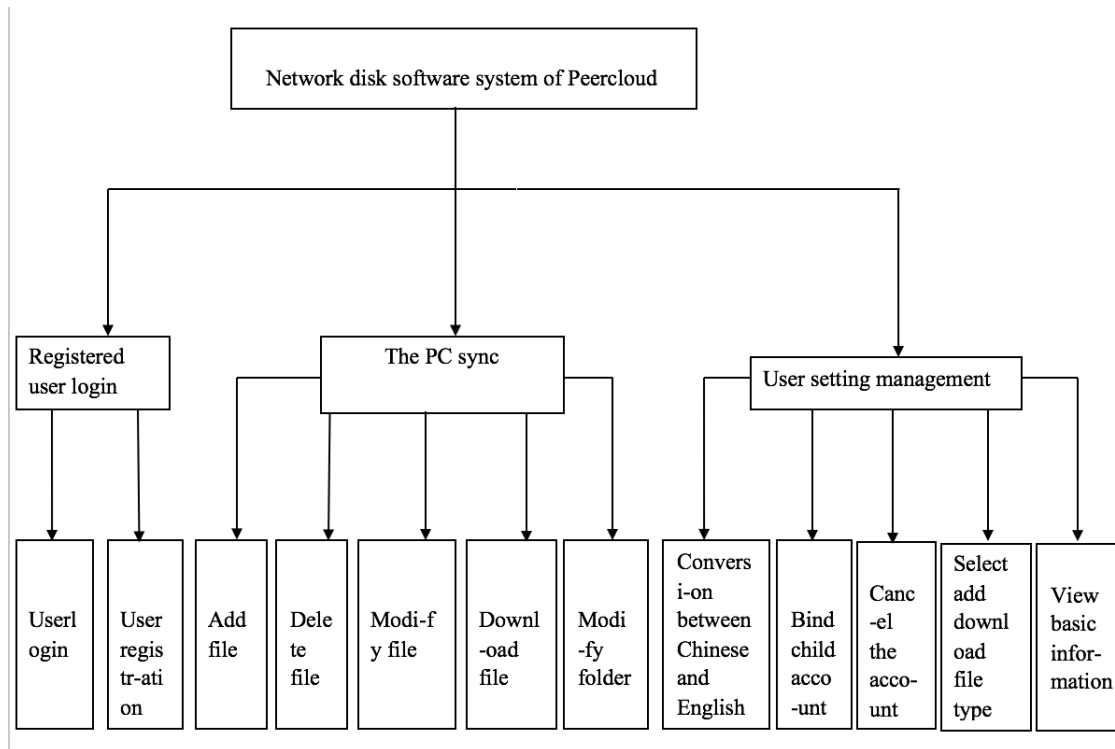


Figure 3-2. Business function architecture

### 3.3 Main principle of the system

In software, we use a relay method to implement p2p through NAT, which is the most reliable way to achieve p2p communication. The relay server makes the p2p communication method similar to the client/server method. For example, now we have two client hosts A and B. A and B have already established an initial connection with the server S with a permanent IP address. They are different. The private networks have their own NAT devices and organize them for direct connections.

It is important to emphasize here that the two clients are not making direct connections, they need to forward messages between them through the server s. As long as the two clients have established a connection with server S, it can work all the time.

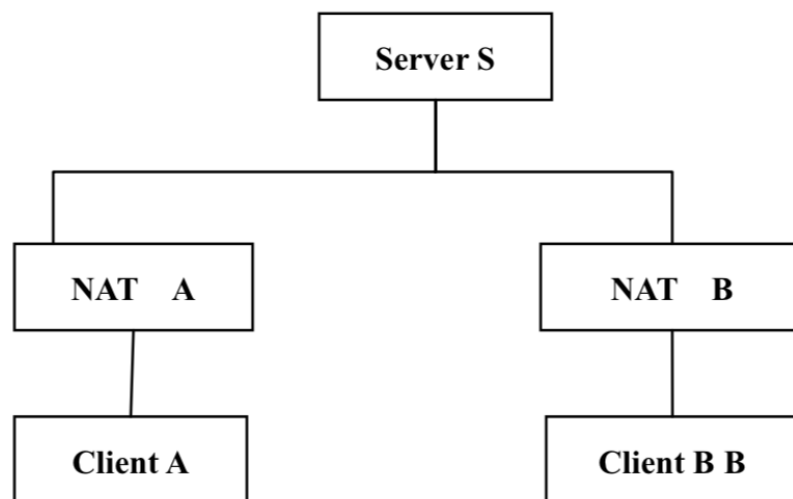


Figure 3-3. Relay server emulates P2P

#### **4. SUMMARY**

This thesis focuses on the Peercloud network disk software, mainly introduces the research background and significance of the topic, expounds the research status of peercloud network disk software and peercloud network disk software in the era of rapid development of information technology, and determines the research mode of peercloud network disk system. The method is analyzed, and the current status and market prospects of the technology are analyzed. The functional modules, function levels and calling relationships of the Peercloud system are determined. The main functions of the user login registration function, PC synchronization function and user setting UI interface are described. Function, using a sequence diagram to illustrate the dynamic operation of the functions between the main objects. The software business functions are described, and the related content and difficulties of the technical architecture are introduced.