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Abstract

This is a UDP-based chat software, all data is stored in the cloud. Except for the local backup log, the local client does not store any content. The software is divided into server side, client side and transmission side. The server-side content is hosted on the server malker.cn

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批注 [ZZ1]:

1. Introduction

This is a chat room platform hosted in the cloud. Users can connect to the server through the client, create chat rooms, join chat rooms, get the server-side chat room list, and chat room members, get chat history, send messages to single or multiple chat rooms, and disconnect from chat rooms Connection. The server can send messages to specific clients to remotely control the shutdown of the server. Not only that, whether it is the client or the server, they can store logs and record information at the time of a crash.

2. Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [RFC2119].

In this document, these words will appear with that interpretation only when in ALL CAPS. Lower case uses of these words are not to be interpreted as carrying significance described in RFC 2119.

In this document, the characters ">>" preceding an indented line(s) indicates a statement using the key words listed above. This convention aids reviewers in quickly identifying or finding the portions of this RFC covered by these keywords.

3. Basic Information

All communications described in this protocol are transmitted based on the UDP protocol, and the listening port is located on port 999 of the server's intranet. The client connects to this port and maintains a persistent connection to the server on this port. The client can communicate with the server in a preset way. The messaging protocol is asynchronous in nature-the client is free to execute. For the connection between the client and server ports, both can be unilaterally disconnected. In the testing phase, both can ask the other to stop the service, which means that the process ends. For chat rooms, the room password and corresponding scale are encapsulated in the chat room, which facilitates the encryption of the information in the room. Although the passwords in the rooms are all the same, the transmission is actually transmitted in plain text.

4. Clasee

4.1 Room Class

```
class creatchatroom:
    name = ''
    contain = 4
    path = './Rooms/'
    infopath = ''# 懒得优化信息读取方法了，所以开了个 info 文件来存储信息
    passwd = 12345
def __init__(self,name,contain,creater):
def changepasswd(self, newpasswd):
def addmsg(self,username,msg):
def getchathistory(self):
def joinuser(self, str_username):
def getroominfo(self):
def getroomname(self):
```

4.2 User Class

```
class  creatuser:
    number = 0
    username = ''
    host = '0.0.0.0'
    enterdate = ''
    path = './Users/'
def __init__(self,number,name,host):
```

5. Field definitions:

```
 CS494FinalProject
├─── Class
|    ├─── Encrypt
|    |    └─── encrypt_string.py
|    ├─── FeatureNote.md
|    ├─── List.py
|    ├─── Room.py
```

```
    |    ├──── Rooms
    |    |    ├──── Room-0
    |    |    └──── Room-0_info
    |    ├──── Test.py
    |    ├──── User.py
    |    ├──── Users
    |    |    ├──── 0_Default
    |    |    ├──── 0_Zhang_San_0
    |    |    ├──── 1_Zhang_San_1
    |    |    ├──── 1_李华
    |    |    ├──── 2_Zhang_San_2
    |    |    ├──── 3_Zhang_San_3
    |    |    ├──── 4_Zhang_San_4
    |    |    ├──── 5_Zhang_San_5
    |    |    ├──── 6_Zhang_San_6
    |    |    ├──── 7_Zhang_San_7
    |    |    ├──── 8_Zhang_San_8
    |    |    └──── 9_Zhang_San_9
    |    └──── __pycache__
    |        ├──── List.cpython-38.pyc
    |        ├──── Room.cpython-36.pyc
    |        ├──── Room.cpython-38.pyc
    |        ├──── User.cpython-36.pyc
    |        └──── User.cpython-38.pyc
```

```
├─── Client
│    ├─── client.js
│    ├─── log.txt
│    ├─── package-lock.json
│    ├─── package.json
│    └─── udp-client.py
├─── Doc
├─── PyServer
│    ├─── FeatureNote.md
│    ├─── List.py
│    ├─── Room.py
│    ├─── Rooms
│    │    ├─── Room-0
│    │    └─── Room-0_info
│    ├─── Test.py
│    ├─── User.py
│    ├─── Users
│    │    ├─── 0_Default
│    │    ├─── 0_Zhang_San_0
│    │    └─── 1_Zhang_San_1
│    ├─── __pycache__
│    │    ├─── Room.cpython-36.pyc
│    │    ├─── Room.cpython-38.pyc
│    │    ├─── Test.cpython-38.pyc
```

```
    |   |   ├─── User.cpython-36.pyc
    |   |   └─── User.cpython-38.pyc
    |   ├─── log.txt
    |   └─── udp-server.py
    └─── README.md
```

5.1 Class

This is a folder for local testing

5.2 PyServer

This is a file used on the server side

5.2.1 Room

This is the folder used to store room information files and chat log files.

5.3 Client

This is the folder used to store the client and client logs

6. Formal Syntax

The following syntax specification uses the augmented Backus-Naur Form (BNF) as described in RFC-2234 [RFC2234].

7. Security Considerations

The text of this website uses utf-8 for transmission by default, and basically does not have encryption function. It is more of a continuation of ASCII. This is the effort made by the project in the security part.

8. IANA Considerations

None

9. Conclusions

That's all of this document. It implements the design details of the basic network transmission function chat room software through the UDP protocol.

10. References

10.1. Normative References

[1] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[2] Crocker, D. and Overell, P.(Editors), "Augmented BNF for Syntax Specifications: ABNF", RFC 2234, Internet Mail Consortium and Demon Internet Ltd., November 1997.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[RFC2234] Crocker, D. and Overell, P.(Editors), "Augmented BNF for Syntax Specifications: ABNF", RFC 2234, Internet Mail Consortium and Demon Internet Ltd., November 1997.

10.2. Informative References

[3] Faber, T., Touch, J. and W. Yue, "The TIME-WAIT state in TCP and Its Effect on Busy Servers", Proc. Infocom 1999 pp. 1573-1583.

[Fab1999] Faber, T., Touch, J. and W. Yue, "The TIME-WAIT state in TCP and Its Effect on Busy Servers", Proc. Infocom 1999 pp. 1573-1583.

11. Acknowledgments

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