Dchat User Manual

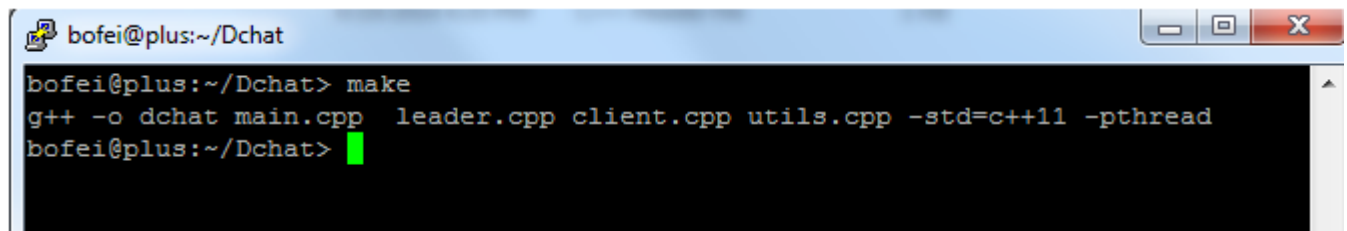Authors: Bofei Wang, Di Wu, Hangfei Lin

1. Introduction

This is a fully distributed text-based group "chat" system under Linux. The system will allow arbitrary size groups of Internet users to send and receive messages to the group in (approximately) real time. Users in a group can type messages at any time, and the messages typed by the various group members can be received by all members in the same order.

2. Compile and Build the System

To compile and build the system, simply run make under the directory where all the files are in:

```
bofei@plus:~/Dchat> make
g++ -o dchat main.cpp  leader.cpp client.cpp utils.cpp -std=c++11 –
pthread
```


Once you have successfully compiled dchat, an executable file will be in the build folder.

3. Start a Chatting Group

To start the chatting system, user could run the following in the command line:
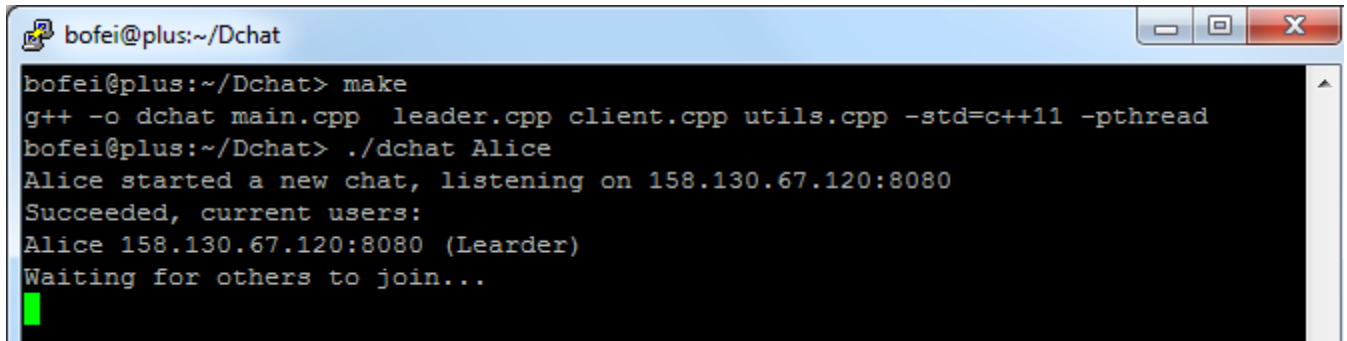
```
./dchat <Username>
```

Where user name is the name of the creator's name in the Dchat, it will be shown during the conversation. Once it is created, it cannot be modified during the chatting session is alive. You could quit the chatting group and rejoin.

Now we try to create a chatting group using the name Alice. Enter the following in the command line and press Enter:

```
./dhat Alice
```

If you successfully create the chatting group, it will display the following information:

```
Alice started a new chat, listening on 158.130.67.120:8080
Succeeded, current users:
Alice 158.130.67.120:8080 (Learder)
Waiting for others to join...
```

This indicates that other people can join this chatting group by inputting the IP address and port number.

If the creating failed, it will exit the program:

4. Join an existing Chatting Group

The user could join an existing chatting room by entering the following command in the command line:
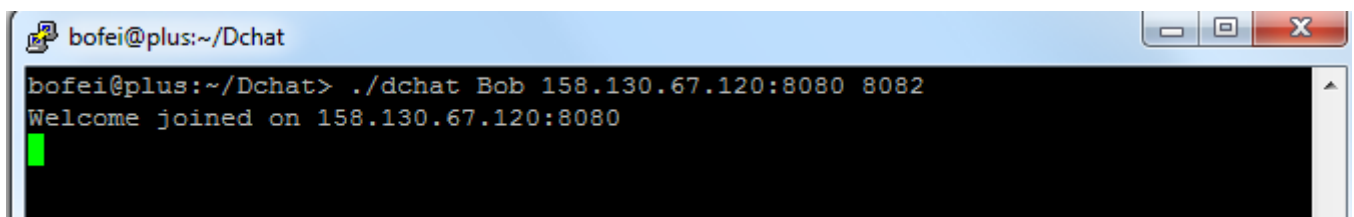
```
./dchat <Username> <ChatCreatorIP:Port Number>
```

Where user name is the name of the user name in the Dchat, it will be shown during the conversation. Just as the creator's user name, it cannot be modified during the chatting session is alive.

For example, if we want to join the chat group created in the section 3 using the user name Bob, we enter the following command and press Enter:

```
./dchat Bob 158.130.67.120:8080
```

If joining successfully, it will print out the following information:
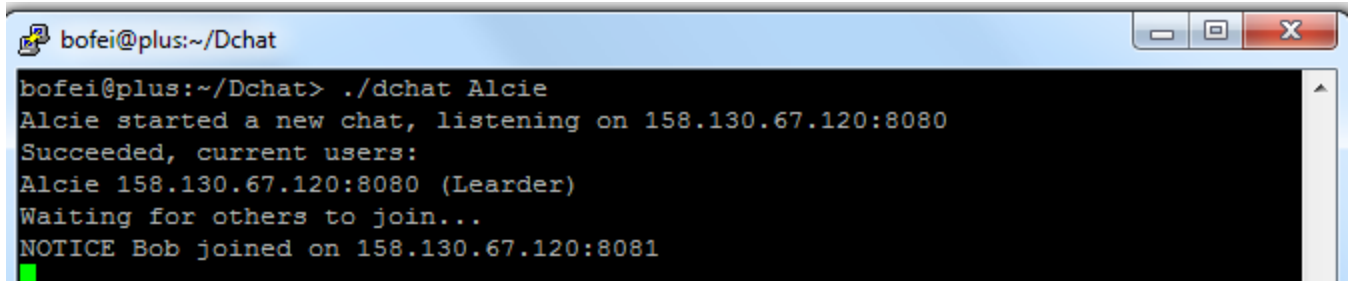
```
Welcome joined on 158.130.67.120:8080
```
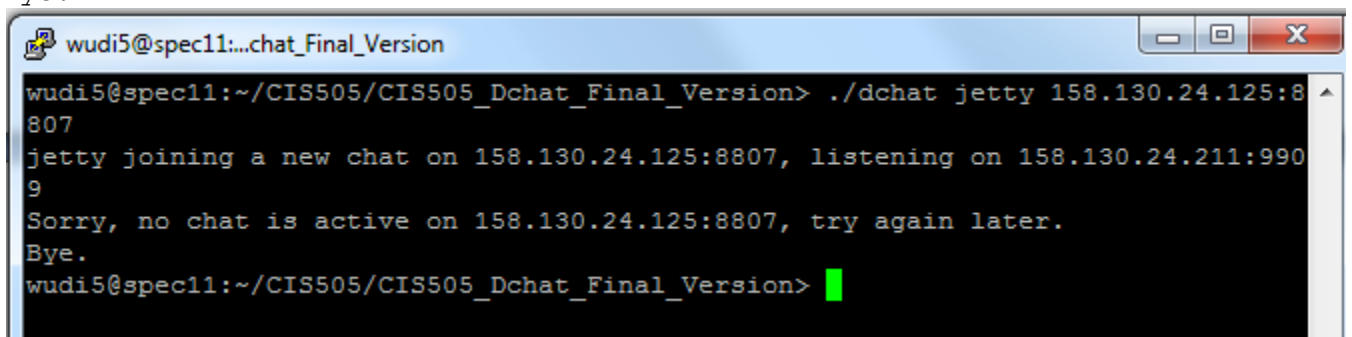

Also in the Alice's chanting console, it will display such information:

If the user tries to join a group that does not exist, it will generate such information:

```
Jetty  joining a new chat on 158.130.24.125:8807, listening on
158.130.24.211:9909
Sorry, no chat is active on 158.130.24.125:8807, try again later.
Bye.
```
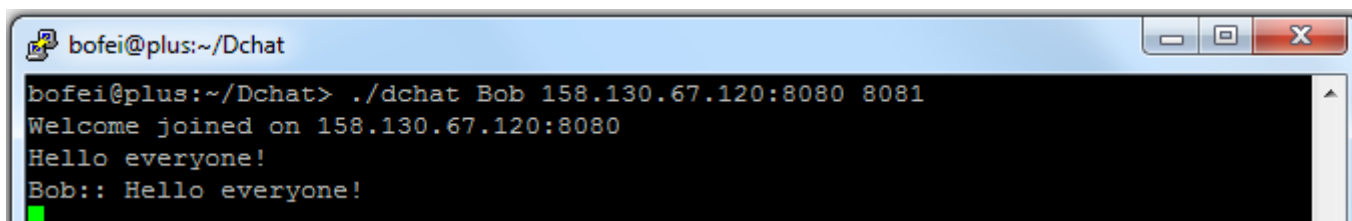

5. Chatting and Receiving Information

When the client has successfully join the chatting, they could start using normal chatting function. To send a message to all group members, simply enter the message and press Enter.

```
Hello everyone!
Bob:: Hello everyone!
```


The first line appears on the screen immediately after user type it. The second line is the message displayed for all the live clients in the system. Other group member will read this message from their console.

If some client leaves or the client side accidentally crashed, the system will detect this and display this on Console:
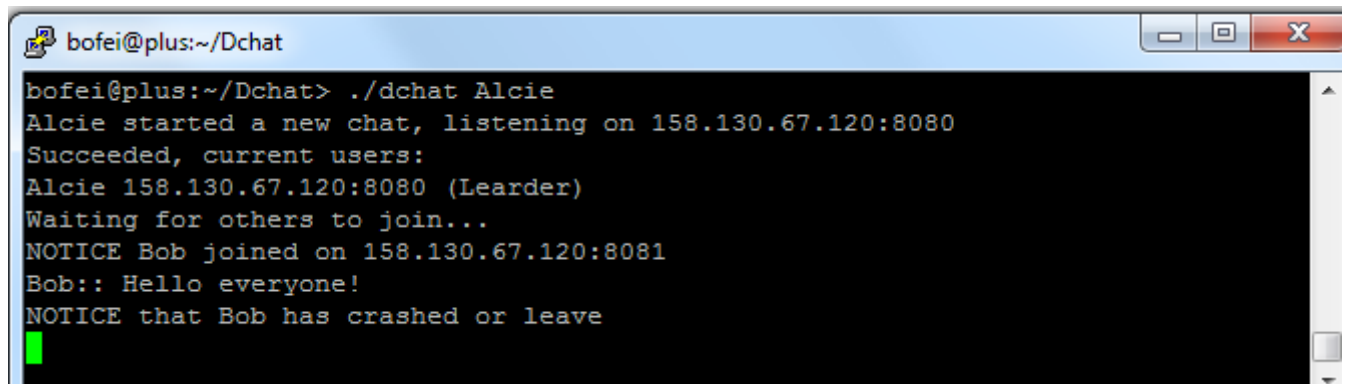
6. Exit the chatting group

To exit the chatting, simply enter "Ctrl + C" or "Ctrl + Z".

After the client leaves the chatting group, it will generate related information on the Console:

For example, if Bob leaves, it will generate such message on Alice's console. At this time, all of the clients will receive this information.

```
NOTICE that Bob has crashed or leave
```