Networking Assignment 1

This document will describe in full, an application protocol definition for a chat system that will allow users to send messages using a multi user chat room with the option to send private messages, create custom user nicknames and block incoming messages from defined users.

Server Replies

The server replies with a host of different responses, these include; conformational responses or error responses.

Conformational responses: S\_OK

(Server command received with no errors)

S\_REG

(User registered without error)

Example of conformation: NICK Barry

S\_OK NICK “Barry”

Nickname changes from “Larry” to “Barry”

Error response: ERR\_<applicable error>

Example of error: NICK <name>

ERR\_NICKUSED

Nickname was unable to change <name> to <newname> due to conflict.

Command Prefixes

To avoid unintentional command entries, ahead of each command has //. This convention is inclusive of all command including administration.

Example://BLOCK Jack

Or

//MUTE Jack

Administrators are prefixed with ‘Admin’ see 4.0.

1. Connection

## Room Join

Command: RJOIN

Parameters: <roomname><roomsize>

Connect to a room. Connections to a room will require a level of registration from a user. The registration will be the username and creation of a room based nickname for the user. To increase security between connections each chat room will need an admin created password in order to complete the registration process.

Registration order:

1. User name definition
2. Server Password
3. Nickname creation

Example: RJOIN Room1

Example with server responses:

CLIENT SERVER

RJOIN Room1 -----------ROOMNAME------> S\_OK

Larry J -----------USERNAME-------> S\_OK

Pass123 -----------PASSWORD-------> S\_OK

Larry -----------NICKNAME--------> S\_OK

<----------------------------------- S\_REG

Possible error replies:

ERR\_INVALIDPASS (Password incorrect)

ERR\_ROOMFULL ERR\_INVALIDUSERID

(Room capacity reached) (User name incorrect)

## 

## 2.Room Create

1.Command: RCREATE

Parameters: <roomname><roomsize><password>

Administrator uses RCREATE to make a custom room, the room size must be upto 10 users to minimise traffic.

Example: RCREATE Room2 10 pass1.

Admin Barry created new ‘Room2’, password protected at a capacity of 10.

Possible error replies:

ERR\_NOTADMIN ERR\_INVALIDCAP

(No admin rights) (Capacity parameters not met)

## 3. Room Quit

Command: RQUIT

Parameters: <roomname>

The RQUIT command will tell an unpopulated room to close. This command will only be accessed by an administrator or an administrating server. The room can be shut down remotely or within the server itself to close all connections.

Example: RQUIT Room1

Server ‘Room1’ has been closed down.

Possible error replies:

ERR\_NOTADMIN ERR\_NOROOM

(No admin rights) (Room does not exists or is already closed)

2. Nick Names

Command: NICK

Parameters: <nickname>

Create a server based nickname for a user. Users will be asked to create a unique nickname upon joining the chat room. Nicknames must be strictly alphanumeric with a character count of between 3 and 10 to stop ambiguity between user names, if the user enters a name outside the given parameters the server will respond with ERR\_NICKINVALID. Nicknames must not be identical to another user, if the server receives a nickname from a user that is identical the server will respond with ERR\_NICKUSED and the user will be asked to enter a new one.

Example: Nick “Barry”

Nickname changes from “Larry” to “Barry”

Possible error replies:

ERR\_NICKINVALID ERR\_NICKUSED

(Nickname not within parameters) (Nickname already in use)

3. Chat commands

## Message

Command: MSG

Parameters: <message>

Send a message to the room. Messages between users must be between 1 - 140 characters. Users can not send too many messages in a short time, this is to reduce spam.

Example: MSG Barry “Hello, world”

Possible error replies:

ERR\_MSGLONG ERR\_MSGSHORT

(Message too long) (Message too short)

ERR\_TOOMANY ERR\_USERMUTED

(Messages sent too quickly) (User has been muted by admin)

## 2. Private message

Command: PMSG

Parameters: <username>/<nickname> <message>

Send a message to a single user defined user, based on username or nickname. The messages will inherit the 1 - 140 character parameters.

Example: PMSG Barry - David “Hi Barry”

Possible error replies:

ERR\_MSGLONG ERR\_MSGSHORT

(Message too long) (Message too short)

ERR\_NOUSER ERR\_USERMUTED

(User does not exist) (User has been muted by admin)

## 3. Mute User

Command: MUTE

Parameters: <username>/<nickname>

Mute a user, based on username or nickname, so the user will no longer receive messages from them. A muted user will still be able to send messages to other users in a room.

Example: MUTE Barry

User ‘Barry’ has been muted.

Possible error replies:

ERR\_NOUSER ERR\_USERMTD

(User does not exist) (User already muted)

## 4. Block User

Command: BLOCK

Parameter: <username>/<nickname>

Block a user from contacting any other user in the room. Only the admin has rights to block a user.

Example:BLOCK Barry

User ‘Barry’ has been blocked.

Possible error replies:

ERR\_NOUSER ERR\_USERBLK

(User does not exist) (User already blocked)

4. Administration

Administrators are captioned by Admin before the chosen nickname.

Example: Admin Barry

## Administrator Commands

2.Command: USERID

Parameters: <nickname>

USERID is used by an admin to check the underlying username of any user in a room based upon the nickname created during registration.

Example: USERID Barry

User ‘Barry’s’ username is Larry.

Possible error replies:

ERR\_NOUSER

(User does not exist)

3.Command: USERINFO

Parameters: <roomname>

Create a list of users in the room by nickname.

Example: USERINFO Room1

Users: Barry, David, Kevin, Antony.

Possible error replies:

ERR\_INVALIDROOM ERR\_UNPOP

(Invalid room ID) (Room has no users)

4.Command: NEWAD

Parameters:<username>/<nickname>

Makes a user a room administrator.

Example: NEWAD

Barry is now a room admin.

Possible error replies:

ERR\_NOUSER ERR\_USERAD

(User does not exist) (User is already an admin)

5.Command: REMAD

Parameters: <username>/<nickname>

Removers a user’s administrator rights.

Example: REMAD

Barry no longer has admin rights.

Possible error replies:

ERR\_NOUSER ERR\_USERNOAD

(User does not exists) (User is not an admin)

## 2. Room Moderation

1.Command: BLOCK (see section 4.3)

2. Command: KICK

Parameters: <username>

Remove a user from the current room. Administrator only.

Example: KICK Barry

Admin David has removed ‘Barry’.

Possible error replies:

ERR\_NOTADMIN ERR\_NOUSER

(No admin rights) (User does not exist)

3.Command: SETPASS

Parameters: <password>

Sets the password for the room. Password is required during registration for the room.

Example:SETPASS password123

Admin David changed ‘Room1’ password.

Possible error replies:

ERR\_SAMEPASS ERR\_NOTADMIN

(Entered the existing password) (No admin rights)

4.Command: CLEAR/CLEARALL

Parameters:<Roomname>

Clears the screen of all text. CLEARALL clears the entire text history of that room.

Example: CLEARALL Room1

The chat has been cleared.

Possible error replies:

ERR\_NOTADMIN ERR\_INVALIDROOM

(No admin rights) (Invalid room ID)