Gita Alekhya Paul **19/09/2021**

Computer Networks
RA1911030010014
Experiment - 9
Remote Command Execution Using UDP

Aim: **To create a Remote Command Execution Using UDP.**

Server Code:

```c
/**
* RA1911030010014 - RCE Server
*/

#include <sys/types.h>
#include <sys/socket.h>
#include <stdio.h>
#include <stdlib.h>
#include <netdb.h>
#include <netinet/in.h>
#include <string.h>
#include <sys/stat.h>
#include <arpa/inet.h>
#include <unistd.h>

#define MAX 1000
#define PORT 8014

int main()
{
   int serverDescriptor = socket(AF_INET, SOCK_DGRAM, 0);
   int size;
   char buffer[MAX], message[] = "Command Successfully executed !";
   struct sockaddr_in clientAddress, serverAddress;
   socklen_t clientLength = sizeof(clientAddress);
   bzero(&serverAddress, sizeof(serverAddress));
   serverAddress.sin_family = AF_INET;
   serverAddress.sin_addr.s_addr = htonl(INADDR_ANY);
   serverAddress.sin_port = htons(PORT);
   bind(serverDescriptor, (struct sockaddr *)&serverAddress, sizeof(serverAddress));
   while (1)
   {
       bzero(buffer, sizeof(buffer));
       recvfrom(serverDescriptor, buffer, sizeof(buffer), 0, (struct sockaddr
*)&clientAddress, &clientLength);
       system(buffer);
       printf("Command Executed ... %s ", buffer);
       sendto(serverDescriptor, message, sizeof(message), 0, (struct sockaddr
*)&clientAddress, clientLength);
   }
   close(serverDescriptor);
   return 0;
}
```

Client Code:

```c
/**
* RA1911030010014 - RCE Client
*/

#include <sys/types.h>
#include <sys/socket.h>
#include <stdio.h>
#include <unistd.h>
#include <netdb.h>
#include <netinet/in.h>
#include <string.h>
#include <arpa/inet.h>

#define MAX 1000
#define PORT 8014

int main()
{
   int serverDescriptor = socket(AF_INET, SOCK_DGRAM, 0);
   char buffer[MAX], message[MAX];
   struct sockaddr_in cliaddr, serverAddress;
   socklen_t serverLength = sizeof(serverAddress);
   bzero(&serverAddress, sizeof(serverAddress));
   serverAddress.sin_family = AF_INET;
   serverAddress.sin_addr.s_addr = inet_addr(INADDR_LOOPBACK);
   serverAddress.sin_port = htons(PORT);
   bind(serverDescriptor, (struct sockaddr *)&serverAddress, sizeof(serverAddress));
   while (1)
   {
       printf("\nCOMMAND FOR EXECUTION ... ");
       fgets(buffer, sizeof(buffer), stdin);
       sendto(serverDescriptor, buffer, sizeof(buffer), 0, (struct sockaddr *)&serverAddress,
serverLength);
       printf("\nData Sent !");
       recvfrom(serverDescriptor, message, sizeof(message), 0, (struct sockaddr
*)&serverAddress, &serverLength);
       printf("UDP SERVER : %s", message);
   }
   return 0;
}
```

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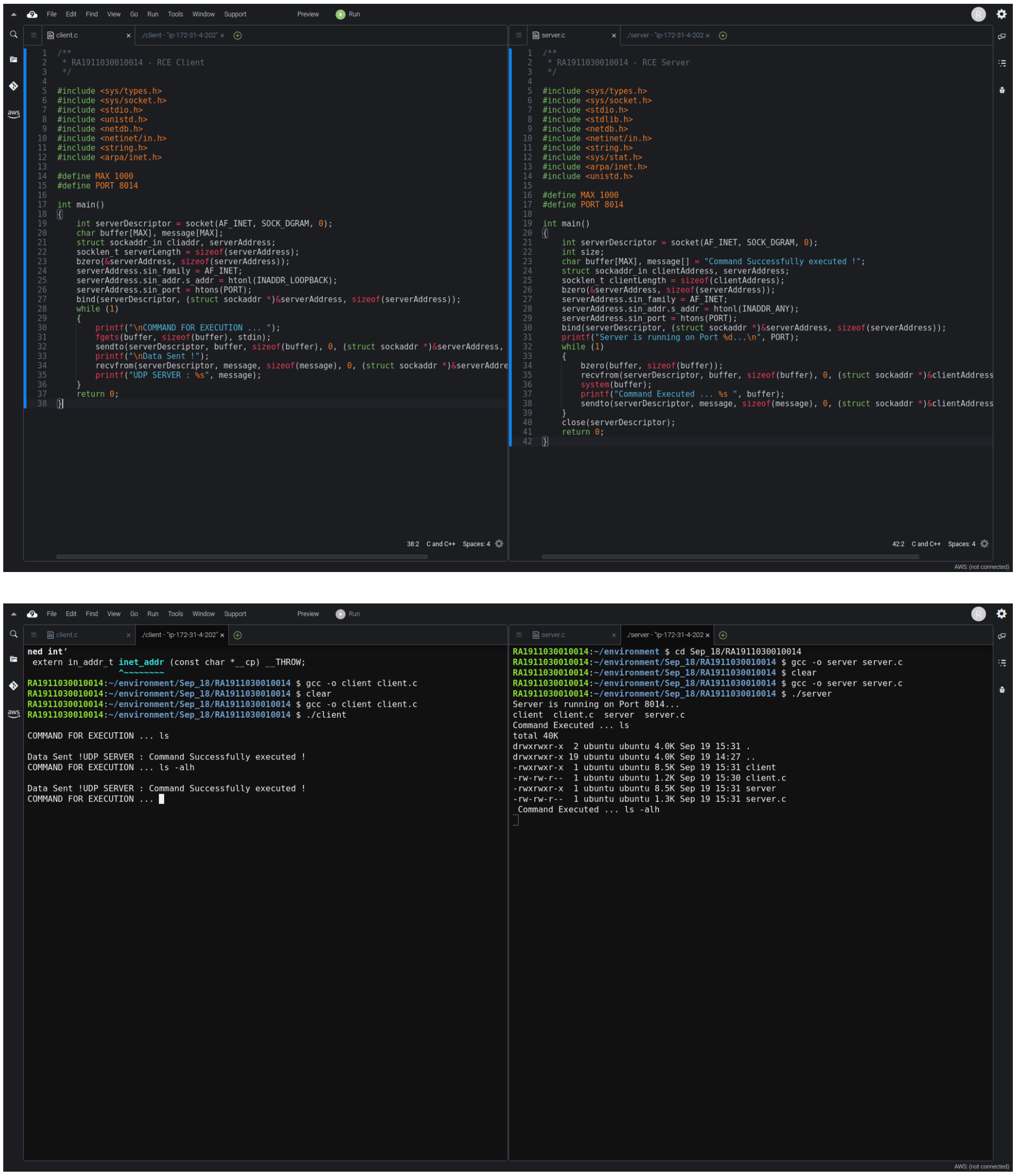
Output:



Result:

The required code for the Remote Command Execution Using UDP was written in the AWS Cloud9 environment and successfully compiled.