

COMP 7005

Computer Networks and Protocols

Assignment-02

User Guide

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Purpose

This client-server application demonstrates inter-process communication using network sockets. The server accepts an IP address and port as parameters to run. The client sends content along with a key that is used to encrypt the content using the Vigenère cipher. Once the server receives the key and content, it encrypts the data and sends the encrypted content back to the client

Installation

Navigate to <https://learn.bcit.ca>. Download COMP7005-assign02-v1.zip and Extract the contents.

Requirements

Need gcc compiler to compile

Building

```
cd <To the Ectracted Folder> /source
```

```
gcc ./client.c -o ./client
```

```
gcc ./server.c -o ./server
```

Running

Run the server first by navigating to the terminal and typing
`./server -ip <Server IP Address> -p <Port to run on>`

Then run client

```
./client -ip <Server IP Address> -p <Port> -f <Filename> -key  
<Keyword>
```

Command Line Arguments

The following configuration values can be set in <file>:

Server

Variable	Purpose
-ip <ip address>	This is a unique identifier that tells the server where to receive the connection request.
-p <port>	The port number is another identifier that tells the server which port to list on for client requests.

Client

Variable	Purpose
-ip <ip address>	This argument specifies the IP address of the server the client will connect to.
-p <port>	This argument specifies the port number on which the server is listening for incoming connections.
-f <filename>	This argument specifies the filename of the file whose content will be sent to the server for encryption.
-key <keyword>	This argument specifies the keyword to be used in the Vigenère cipher encryption.

Examples

Server	Client
<pre> anmol@Anmol-T470s: ~/BCIT anmol@Anmol-T470s:~/BCIT/UNIX_Network_Sockets/source\$./server -p 8000 -ip 10.0.0.30 IP Address: 10.0.0.30 Port: 8000 Creating socket... Socket Created Binding to: 10.0.0.30:8000 Listening... Waiting for a client... Client connected. Message received from client. Key received from client: test Encrypted message sent back to client. Client disconnected. Waiting for a client... </pre>	<pre> anmol@anmol-x1: ~/Documents/BCIT/UNIX_Network_Sockets/source\$./client -ip 10.0.0.30 -p 8000 -f data.txt -key test Creating socket... Socket Created Connected to the server... Message sent to the server. Encrypted message received from the server: Aideh Agkeh!! QTR!!!!!!!!!!!!!! Disconnected from the server. anmol@anmol-x1:~/Documents/BCIT/UNIX_Network_Sockets/source\$ </pre>
<pre> anmol@Anmol-T470s: ~/BCIT anmol@Anmol-T470s:~/BCIT/UNIX_Network_Sockets/source\$./server -p 9000 -ip 10.0.0.30 IP Address: 10.0.0.30 Port: 9000 Creating socket... Socket Created Binding to: 10.0.0.30:9000 Listening... Waiting for a client... Client connected. Message received from client. Key received from client: pass Encrypted message sent back to client. Client disconnected. Waiting for a client... </pre>	<pre> anmol@anmol-x1: ~/Documents/BCIT/UNIX_Network_Sockets/source\$./client -ip 10.0.0.30 -p 9000 -f data.txt -key pass Creating socket... Socket Created Connected to the server... Message sent to the server. Encrypted message received from the server: Weddd Wgjad!! QSN!!!!!!!!!!!!!! Disconnected from the server. anmol@anmol-x1:~/Documents/BCIT/UNIX_Network_Sockets/source\$ </pre>