

COMP 8005

Project

User Guide

Harman Dhillon
A00994245
Dec 3, 2025

Purpose

- A distributed password-cracking system that demonstrates dynamic work distribution, checkpointing, worker failure recovery, and multi-threaded brute-force password cracking.

Installing

Obtaining

```
git clone  
https://github.com/HarmanbirD/Distributed-Password-Cracker
```

Building

Server

```
mkdir server/build  
cd build  
cmake ..  
make
```

Client

```
mkdir client/build  
cd build  
cmake ..  
make
```

Running

Server

```
./server -s <ip-address> -p <port number> -H <hash> -w <work  
size> -c <checkpoint> -t <timeout>
```

Client

```
./server -s <ip-address> -p <port number> -t <threads>
```

Command Line Arguments

Server

Variable	Purpose
-s	Ip address
-p	Port number
-H	Hash
-w	Work size
-c	Name of the user whose password to crack
-t	Timeout (seconds)

Client

Variable	Purpose
-s	Ip address
-p	Port number
-t	Number of threads

Examples

Server

```
./server/build main • > ./server -s 192.168.1.67 -p 34000 -H '$2b$12$2dRZ7n7o/08XoEdRvwbSRuczFHPQiuRutEsMloV3.6rjpTKNQaSPu' -w 1000 -c 250 -t 100
TRACE: STATE_PARSE_ARGUMENTS
Entered state at line 92.

TRACE: STATE_HANDLE_ARGUMENTS
Entered state at line 104.

TRACE: STATE_CONVERT_ADDRESS
Entered state at line 117.

TRACE: STATE_CREATE_SOCKET
Entered state at line 129.

TRACE: STATE_BIND_SOCKET
Entered state at line 143.

binding to: 192.168.1.67:34000
Bound to socket: 192.168.1.67:34000
TRACE: STATE_START_LISTENING
Entered state at line 156.

TRACE: STATE_START_TIMER
Entered state at line 188.

TRACE: STATE_START_POLLING
Entered state at line 198.
```

Client

```
./client/build main • > ./client -s 192.168.1.67 -p 34000 -t 4
TRACE: STATE_PARSE_ARGUMENTS
Entered state at line 104.

TRACE: STATE_HANDLE_ARGUMENTS
Entered state at line 116.

TRACE: STATE_CONVERT_ADDRESS
Entered state at line 129.

TRACE: STATE_CREATE_SOCKET
Entered state at line 142.

TRACE: STATE_CONNECT_SOCKET
Entered state at line 156.

Connecting to: 192.168.1.67:34000
Connected to: 192.168.1.67:34000
TRACE: STATE_WAIT_HASH
Entered state at line 169.

[WORKER] Received hash: $2b$12$2dRZ7n7o/08XoEdRvwbSRuczFHPQiuRutEsMloV3.6rjpTKNQaSPu
TRACE: STATE_WAIT_WORK
Entered state at line 182.
```