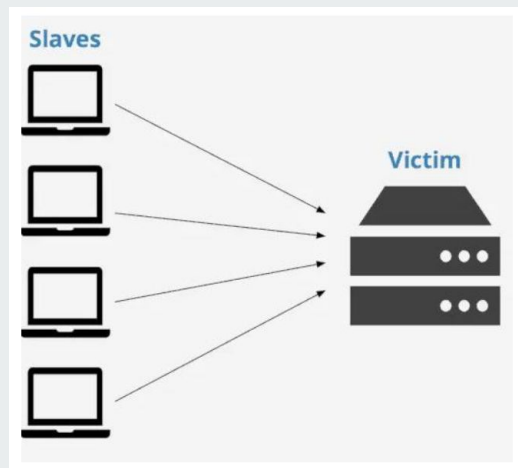


**Computação Distribuída**  
**Apresentação do Projeto Final**  
**Distributed Password Cracker**  
**LEI / Universidade de Aveiro**



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# Arquitetura

- Para desenvolver o sistema distribuído de descoberta de passwords utilizamos:
- ◆ um sistema peer-to-peer, uma organização descentralizada;
  - ◆ dividimos as camadas por várias máquinas, de forma simultânea.



# Protocolo

→ O protocolo utilizado entre os slaves e o servidor é baseado na troca de mensagens JSON.

Objetivo	Destino	Mensagem
Manter sempre a conexão da rede	Servidor e todos os slaves em execução	<code>{'command': 'register', 'ip',(host,port)}</code>
Avisar aos slaves que não descobriram a password, que a mesma já foi encontrada	Todos os slaves em execução, à exceção dele próprio	<code>{'command': 'found', 'password': value}</code>
Um slave mandar a outro slave tentar uma password	Um Slave	<code>{'command': 'try', 'option': value}</code>

## Resultados - 1 servidor e 1 slave

```
joao@joao-Strix-G531GT-G531GT:~/Desktop/Universidade/Zano/CD/cd2021-final-98513_98679/server$ docker run --name server diogogomes/cd2021
DEBUG: 2021-07-02 21:40:44 Password: e
INFO: 2021-07-02 21:40:44 My IP: 172.17.0.2
INFO: Started server process [1]
INFO: Waiting for application startup.
INFO: Application startup complete.
INFO: Unicorn running on http://0.0.0.0:8000 (Press CTRL+C to quit)
DEBUG: 2021-07-02 21:40:50 Start monitoring Address(host='172.17.0.3', port=54150)
INFO: 172.17.0.3:54150 - "GET / HTTP/1.1" 401 Unauthorized
DEBUG: 2021-07-02 21:40:50 Try 0 by Address(host='172.17.0.3', port=54150)
INFO: 172.17.0.3:54150 - "GET / HTTP/1.1" 401 Unauthorized
DEBUG: 2021-07-02 21:40:50 Try 1 by Address(host='172.17.0.3', port=54150)
INFO: 172.17.0.3:54150 - "GET / HTTP/1.1" 401 Unauthorized
DEBUG: 2021-07-02 21:40:50 Try 2 by Address(host='172.17.0.3', port=54150)
INFO: 172.17.0.3:54150 - "GET / HTTP/1.1" 401 Unauthorized
DEBUG: 2021-07-02 21:40:50 Try 3 by Address(host='172.17.0.3', port=54150)
INFO: 172.17.0.3:54150 - "GET / HTTP/1.1" 200 OK
```

```
joao@joao-Strix-G531GT-G531GT:~/Desktop/Universidade/Zano/CD/cd2021-final-98513_98679$ docker run --name worker1 projecto_final
Connected to 172.17.0.2 : 8000 in <socket.socket fd=3, family=AddressFamily.AF_INET, type=SocketKind.SOCK_STREAM, proto=0, laddr=('172.17.0.3', 54150), raddr=('172.17.0.2', 8000)>
Get peer name 172.17.0.3
Trying... a
..... 1
Trying... b
..... 1
Trying... c
..... 1
Trying... d
..... 1
Trying... e
..... 1
('command': 'found', 'password': 'e')
```

```
INFO: 172.17.0.4:43502 - GET /HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 1 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 8 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 5 By Address(host='172.17.0.3', port=54522)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 6 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 1 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 2 By Address(host='172.17.0.3', port=54522)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 1 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 8 By Address(host='172.17.0.4', port=43502)
INFO: 2021-07-02 21:45:08 Tpy 5 By Address(host='172.17.0.3', port=54522)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 6 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 8 By Address(host='172.17.0.4', port=43502)
INFO: 2021-07-02 21:45:08 Tpy 5 By Address(host='172.17.0.3', port=54522)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 2 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 3 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 5 By Address(host='172.17.0.4', port=43502)
INFO: 2021-07-02 21:45:08 Tpy 6 By Address(host='172.17.0.3', port=54522)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 8 By Address(host='172.17.0.4', port=43502)
INFO: 2021-07-02 21:45:08 Tpy 5 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 6 By Address(host='172.17.0.3', port=54522)
INFO: 172.17.0.3:54522 - GET / HTTP/1.1 401 Unauthorized
INFO: 2021-07-02 21:45:08 Tpy 8 By Address(host='172.17.0.4', port=43502)
INFO: 2021-07-02 21:45:08 Tpy 5 By Address(host='172.17.0.4', port=43502)
INFO: 172.17.0.4:43502 - GET / HTTP/1.1 200 OK
```

```
root@kali:~# curl -s http://172.17.0.2:8080 | jq '.server | {name: "172.17.0.4", ip: "172.17.0.2", port: 8080, url: "http://172.17.0.2:8080"}'
```

```

connected to 172.17.0.2 : 8080 in :socket sock fd=3, family=addr=family_v1_intl, type=socketKind.SOCK_STREAM, proto=0, addr=(172.17.0.3, 54352), raddr=(172.17.0.2, 8080)
set peer name 172.17.0.3
trying... a
trying... b
trying... c
trying... d
trying... e
trying... f
trying... g
trying... h
trying... i
trying... j
trying... k
trying... l
trying... m
trying... n
trying... o
trying... p
trying... q
trying... r
trying... s
trying... t
trying... u
trying... v
trying... w
trying... x
trying... y
trying... z
trying... A
trying... B
trying... C
trying... D
trying... E
trying... F
Command: 'found', 'password': 'P'
trying...

```