



Licenciatura em Engenharia Informática
Computação Distribuída
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Projeto Final - Distributed Password Cracker

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Arquitetura

Arquitetura P2P usando multicast e selectors

```
class Slave:
    def __init__(self):
        self.sockp2p = socket.socket(socket.AF_INET, socket.SOCK_DGRAM, socket.IPPROTO_UDP)
        self.sockp2p.setsockopt(socket.SOL_SOCKET, socket.SO_REUSEADDR, 1)
        self.sockp2p.bind('', MCAST_PORT)
        self.mreq = struct.pack("4sl", socket.inet_aton(MCAST_GRP), socket.INADDR_ANY)
        self.sockp2p.setsockopt(socket.IPPROTO_IP, socket.IP_ADD_MEMBERSHIP, self.mreq)

        self.sockserver = socket.socket(socket.AF_INET, socket.SOCK_STREAM)

        self.sel = selectors.DefaultSelector()
        self.sel.register(self.sockp2p, selectors.EVENT_READ, self.read_p2p_msg) # UDP nao precisa de accept
        self.sel.register(self.sockserver, selectors.EVENT_READ, self.accept)
```

Protocolo

O protocolo de comunicação implementado entre slaves tem 2 métodos:

→ sincronize

→ finalize

```
fortnyc@fortnyc: ~/Desktop/finalCD
x fortnyc@fortnyc: ~/Desktop/finalCD x fortnyc@fortnyc: ~/Desktop/finalCD x
{'method': 'sincronize', 'slave': 1625257475915, 'last_guess': '94', 'known_slaves': [1625257475915, 1625257470755]}
9p
{'method': 'sincronize', 'slave': 1625257477729, 'last_guess': '', 'known_slaves': []}
Distributing work for 1625257470755 with number 1
9q
{'method': 'sincronize', 'slave': 1625257477729, 'last_guess': '99', 'known_slaves': [1625257477729]}
9n
9m
9l
9k
9j
{'method': 'sincronize', 'slave': 1625257470755, 'last_guess': '9j', 'known_slaves': [1625257470755, 1625257475915, 1625257477729]}
9i
{'method': 'sincronize', 'slave': 1625257475915, 'last_guess': 'pN', 'known_slaves': [1625257475915, 1625257477729]}
9h
{'method': 'sincronize', 'slave': 1625257477729, 'last_guess': 'Uo', 'known_slaves': [1625257477729, 1625257470755, 1625257475915]}
9g
9f
9e
9d
9c
{'method': 'sincronize', 'slave': 1625257477729, 'last_guess': 'Ul', 'known_slaves': [1625257477729, 1625257470755, 1625257475915]}
9b
{'method': 'sincronize', 'slave': 1625257475915, 'last_guess': 'pF', 'known_slaves': [1625257475915, 1625257470755, 1625257477729]}
9a
{'method': 'sincronize', 'slave': 1625257470755, 'last_guess': '9b', 'known_slaves': [1625257470755, 1625257475915, 1625257477729]}
9z
9y
9x
{'method': 'sincronize', 'slave': 1625257477729, 'last_guess': 'Uc', 'known_slaves': [1625257477729, 1625257470755, 1625257475915]}
9w
{'method': 'sincronize', 'slave': 1625257470755, 'last_guess': '9W', 'known_slaves': [1625257470755, 1625257475915, 1625257477729]}
9v
{'method': 'sincronize', 'slave': 1625257475915, 'last_guess': 'o9', 'known_slaves': [1625257475915, 1625257470755, 1625257477729]}
9u
9t
9s
9r
{'method': 'sincronize', 'slave': 1625257470755, 'last_guess': '9R', 'known_slaves': [1625257470755, 1625257475915, 1625257477729]}
9q
{'method': 'sincronize', 'slave': 1625257477729, 'last_guess': 'UV', 'known_slaves': [1625257477729, 1625257470755, 1625257475915]}
9p
{'method': 'sincronize', 'slave': 1625257475915, 'last_guess': 'o3', 'known_slaves': [1625257475915, 1625257470755, 1625257477729]}
9o
9n
9m
{'method': 'sincronize', 'slave': 1625257475915, 'last_guess': 'ox', 'known_slaves': [1625257475915, 1625257470755, 1625257477729]}
fortnyc@fortnyc:~/Desktop/finalCDs
```

```
fortnyc@fortnyc:~/Desktop/finalCD x fortnyc@fortnyc:~/Desktop/finalCD x fortnyc@fortnyc:~/Desktop/finalCD
{'method': 'sincronize', 'slave': 1625257794925, 'last_guess': '', 'known_slaves': []}
9
{'method': 'sincronize', 'slave': 1625257794925, 'last_guess': '9', 'known_slaves': [1625257794925]}
8
{'method': 'sincronize', 'slave': 1625257791627, 'last_guess': 's', 'known_slaves': [1625257791627, 1625257793175, 1625257794925]}
Distributing work for 1625257794925 with number 3
T
{'method': 'sincronize', 'slave': 1625257793175, 'last_guess': 'j', 'known_slaves': [1625257793175, 1625257791627, 1625257794925]}
S
{'method': 'sincronize', 'slave': 1625257794925, 'last_guess': '8', 'known_slaves': [1625257794925]}
R
O
{'method': 'sincronize', 'slave': 1625257793175, 'last_guess': 'e', 'known_slaves': [1625257793175, 1625257791627, 1625257794925]}
P
{'method': 'sincronize', 'slave': 1625257794925, 'last_guess': 'P', 'known_slaves': [1625257794925, 1625257791627, 1625257793175]}
O
{'method': 'sincronize', 'slave': 1625257791627, 'last_guess': '99', 'known_slaves': [1625257791627, 1625257793175, 1625257794925]}
N
M
L
{'method': 'sincronize', 'slave': 1625257791627, 'last_guess': '94', 'known_slaves': [1625257791627, 1625257793175, 1625257794925]}
K
{'method': 'sincronize', 'slave': 1625257793175, 'last_guess': 'Z', 'known_slaves': [1625257793175, 1625257791627, 1625257794925]}
J
{'method': 'sincronize', 'slave': 1625257794925, 'last_guess': 'K', 'known_slaves': [1625257794925, 1625257791627, 1625257793175]}
I
{'method': 'sincronize', 'slave': 1625257793175, 'last_guess': 'W', 'known_slaves': [1625257793175, 1625257791627, 1625257794925]}
H
G
F
E
{'method': 'sincronize', 'slave': 1625257791627, 'last_guess': '9y', 'known_slaves': [1625257791627, 1625257793175, 1625257794925]}
D
{'method': 'sincronize', 'slave': 1625257794925, 'last_guess': 'D', 'known_slaves': [1625257794925, 1625257791627, 1625257793175]}
C
{'method': 'finalize', 'correct_guess': 'W'}
CORRECT PASSWORD: W
fortnyc@fortnyc:~/Desktop/finalCDs
```

Resultados