# Sprint 2 ASIST

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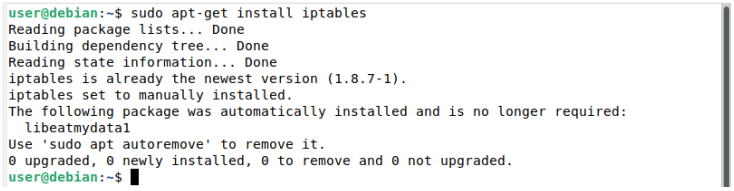
## Context

We chose the user case number 2: « As the system administrator I want only clients on the DEI's internal network (cabled or via VPN) to be able to access the solution. »

The operations will be operated on a machine running debian.

## Installation of the needed packages

To control who can access or not our services, we will need the firewall iptables. To get it, we use the command `sudo apt-get install iptables`.

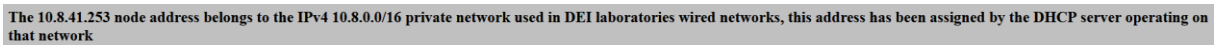



In our case, iptables is already installed so we got this message (see screenshot).

## Configuration of the firewall

### Modification of the firewall rules

Our service listens on two ports: 3000 and 5000. The page [rede.dei.isep.ipp.pt/myip](rede.dei.isep.ipp.pt/myip) informs us that the addresses belonging to the DEI internal network belongs to the network 10.8.0.0/16:



First, we must allow all the traffic from the DEI internal network. This command must be executed before the ones that block the traffic otherwise, we may not have access to the ssh service anymore. We will allow the traffic for the ssh service (Port 22), and the 2 ports of our program (3000 and 5000).

```
sudo iptables -I INPUT -p tcp --dport 22 -s 10.8.0.0/16 -j ACCEPT
```

```
sudo iptables -I INPUT -p tcp --dport 5000 -s 10.8.0.0/16 -j ACCEPT
```

```
sudo iptables -I INPUT -p tcp --dport 3000 -s 10.8.0.0/16 -j ACCEPT
```

Then, we must allow all already established TCP connections by using this command:

```
sudo iptables -A INPUT -m conntrack --ctstate ESTABLISHED,RELATED -s 10.8.0.0/16 -j ACCEPT
```

Then, we allow the same type of connection, but for the outgoing traffic:

```
sudo iptables -A OUTPUT -m conntrack --ctstate ESTABLISHED -s 10.8.0.0/16 -j ACCEPT
```

Without these commands, the traffic would be interrupted.

Finally, we block all the ingoing traffic that don't respond to the previous criteria:

```
sudo iptables -A INPUT -j DROP
```

## Checking iptables rules

We can check our rules with the command `sudo iptables -L`:

```
user@debian:~$ sudo iptables -L --line-numbers
Chain INPUT (policy ACCEPT)
num  target     prot opt source               destination
1    ACCEPT     tcp  --  10.8.0.0/16          anywhere             tcp dpt:5000
2    ACCEPT     tcp  --  10.8.0.0/16          anywhere             tcp dpt:3000
3    ACCEPT     tcp  --  10.8.0.0/16          anywhere             tcp dpt:ssh
4    ACCEPT     all  --  10.8.0.0/16          anywhere             ctstate RELATED,ESTA
BLISHED
5    DROP       all  --  anywhere             anywhere

Chain FORWARD (policy ACCEPT)
num  target     prot opt source               destination

Chain OUTPUT (policy ACCEPT)
num  target     prot opt source               destination
1    ACCEPT     all  --  10.8.0.0/16          anywhere             ctstate RELATED,ESTA
BLISHED
```