

## ATIVIDADE DE SISTEMAS OPERACIONAIS DE REDE II

Nome: Ernesto Eudes

Profº: Taveira

Período: P8

- Usando um WSL ou um Virtual Box faça as seguintes atividades: Instalar um SSH Server e um SSH Client(usar preferencialmente o Putty no Windows):

### ☐ SUDO APT UPDATE

```
ernesto@DESKTOP-F8DLV22: ~  
ernesto@DESKTOP-F8DLV22:~$ sudo apt update  
[sudo] password for ernesto:  
Sorry, try again.  
[sudo] password for ernesto:  
Sorry, try again.  
[sudo] password for ernesto:  
Get:1 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]  
Get:2 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]  
Get:3 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1821 kB]  
Get:4 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]  
Get:5 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [301 kB]  
Get:6 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [11.2 kB]  
Get:7 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [1289 kB]  
Get:8 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en [183 kB]  
Get:9 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 c-n-f Metadata [596 B]  
Get:10 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [743 kB]  
Get:11 http://security.ubuntu.com/ubuntu focal-security/universe Translation-en [137 kB]  
Get:12 http://security.ubuntu.com/ubuntu focal-security/universe amd64 c-n-f Metadata [15.3 kB]  
Get:13 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packages [22.2 kB]  
Get:14 http://security.ubuntu.com/ubuntu focal-security/multiverse Translation-en [5376 B]  
Get:15 http://archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]  
Get:16 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 c-n-f Metadata [508 B]  
Get:17 http://archive.ubuntu.com/ubuntu focal/main amd64 Packages [970 kB]  
Get:18 http://archive.ubuntu.com/ubuntu focal/main Translation-en [506 kB]  
Get:19 http://archive.ubuntu.com/ubuntu focal/main amd64 c-n-f Metadata [29.5 kB]  
Get:20 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [8628 kB]  
Get:21 http://archive.ubuntu.com/ubuntu focal/universe Translation-en [5124 kB]  
Get:22 http://archive.ubuntu.com/ubuntu focal/universe amd64 c-n-f Metadata [265 kB]  
Get:23 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [144 kB]  
Get:24 http://archive.ubuntu.com/ubuntu focal/multiverse Translation-en [104 kB]  
Get:25 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 c-n-f Metadata [9136 B]  
Get:26 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2196 kB]  
Get:27 http://archive.ubuntu.com/ubuntu focal-updates/main Translation-en [385 kB]  
Get:28 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [16.0 kB]  
Get:29 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [1381 kB]  
Get:30 http://archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [196 kB]  
Get:31 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 c-n-f Metadata [600 B]  
Get:32 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [972 kB]  
Get:33 http://archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [221 kB]  
Get:34 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [21.8 kB]  
Get:35 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [20.9 kB]  
Get:36 http://archive.ubuntu.com/ubuntu focal-updates/multiverse Translation-en [7940 B]  
Get:37 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 c-n-f Metadata [664 B]  
Get:38 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [45.7 kB]  
Get:39 http://archive.ubuntu.com/ubuntu focal-backports/main Translation-en [16.3 kB]  
Get:40 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 c-n-f Metadata [1420 B]  
Get:41 http://archive.ubuntu.com/ubuntu focal-backports/restricted amd64 c-n-f Metadata [116 B]  
Get:42 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [23.9 kB]  
Get:43 http://archive.ubuntu.com/ubuntu focal-backports/universe Translation-en [16.0 kB]  
Get:44 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 c-n-f Metadata [860 B]  
Get:45 http://archive.ubuntu.com/ubuntu focal-backports/multiverse amd64 c-n-f Metadata [116 B]  
Fetched 26.4 MB in 7s (4031 kB/s)  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
292 packages can be upgraded. Run 'apt list --upgradable' to see them.  
ernesto@DESKTOP-F8DLV22:~$
```

## □ SUDO APT UPGRADE

```
ernesto@DESKTOP-F8DLV22:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  libfwupdplugin1 libxmlb1
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  distro-info libatasmart4 libblockdev-crypto2 libblockdev-fs2 libblockdev-loop2 libblockdev-part-err2
  libblockdev-part2 libblockdev-swap2 libblockdev-utils2 libblockdev2 libfwupdplugin5 libjcat1 liblvm2 libmbim-glib4
  libmbim-proxy libmm-glib0 libnspr4 libnss3 libparted-fs-resize0 libqmi-glib5 libqmi-proxy libudisks2-0
  libvolume-key1 libxcb-shm0 libxcb-xfixes0 libxmlb2 modemmanager motd-news-config python3-pexpect python3-ptyprocess
  udisks2 usb-modeswitch usb-modeswitch-data
The following packages will be upgraded:
  accountsservice alsa-ucm-conf apparmor apport apt apt-utils base-files bash bcache-tools bind9-dnsutils bind9-host
  bind9-libs bolt bsdtls busybox-initramfs busybox-static ca-certificates cloud-init cloud-initramfs-copymods
  cloud-initramfs-dyn-netconf command-not-found cpio cryptsetup cryptsetup-bin cryptsetup-initramfs cryptsetup-run
  curl dbus dbus-user-session dbus-x11 dirnmgr distro-info-data dpkg e2fsprogs fdisk finalrd friendly-recovery fwupd
  fwupd-signed gcc-10-base gir1.2-glib-2.0 gir1.2-packagekitglib-1.0 git git-man glib-networking
  glib-networking-common glib-networking-services gnupg gnupg-l10n gnupg-utils gpg gpg-agent gpg-wks-client
  gpg-wks-server gpgconf gpgsm gpgv gzip initramfs-tools initramfs-tools-bin initramfs-tools-core isc-dhcp-client
  isc-dhcp-common klibc-utils kmod krb5-locales landscape-common language-selector-common less libaccountsservice0
  libapparmor1 libapt-pkg6.0 libarchive13 libasn1-8-heimdal libasound2 libasound2-data libblkid1 libbrotli1 libcb-bin
  libcb6 libcom-err2 libcryptsetup12 libcurl3-gnutls libcurl4 libdbus-1-3 libdns-export1109 libdrm-amdgpu1
  libdrm-common libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libdrm2 libefiboot1 libefivar1 libexpat1 libext2fs2
  libfdisk1 libfreetype6 libfribidi0 libfwupd2 libfwupdplugin1 libgcc-s1 libgcrypt20 libgirepository-1.0-1 libgl1
  libgl1-mesa-dri libglapi-mesa libglib2.0-0 libglib2.0-bin libglib2.0-data libglvnd0 libglx-mesa0 libglx0 libgmp10
  libgnutls30 libgssapi-krb5-2 libgssapi3-heimdal libgstreamer1.0-0 libhcrypto4-heimdal libheimbase1-heimdal
```

## □ SUDO APT INSTALL OPENSSSH-SERVER

```
ernesto@DESKTOP-F8DLV22:~$ sudo apt install openssh-server
[sudo] password for ernesto:
Reading package lists... Done
Building dependency tree
Reading state information... Done
openssh-server is already the newest version (1:8.2p1-4ubuntu0.5).
The following packages were automatically installed and are no longer required:
  libfwupdplugin1 libxmlb1
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ernesto@DESKTOP-F8DLV22:~$
```

## □ SUDO SERVICE SSH STATUS

```
ernesto@DESKTOP-F8DLV22:~$ sudo service ssh status
* sshd is running
ernesto@DESKTOP-F8DLV22:~$
```

## ❑ CRIAR CHAVES PÚBLICAS E PRIVADAS

```
ernesto@DESKTOP-F8DLV22:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/ernesto/.ssh/id_rsa):
/home/ernesto/.ssh/id_rsa already exists.
Overwrite (y/n)? y
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/ernesto/.ssh/id_rsa
Your public key has been saved in /home/ernesto/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:n87DgiYcB3nnl1P0tioNGdhpiI4j7xBUV4/MZvNi3p0 ernesto@DESKTOP-F8DLV22
The key's randomart image is:
+---[RSA 3072]-----+
|
| . . .
| . . o o .
| . . .B+.o .
| . o oo+o= . o
| . = oS..= . .
| ..+ oo.+*o ..
| .+ + ..o++E.
| .+ o .o+ o
| ..o .oo
+-----[SHA256]-----+
```

## ❑ COPIAR A CHAVE PÚBLICA NO SSH SERVER

```
ernesto@DESKTOP-F8DLV22:~$ ssh-copy-id ernesto@172.29.180.144
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/ernesto/.ssh/id_rsa.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
ernesto@172.29.180.144's password:
Permission denied, please try again.
ernesto@172.29.180.144's password:
Permission denied, please try again.
ernesto@172.29.180.144's password:

Number of key(s) added: 1

Now try logging into the machine, with: "ssh 'ernesto@172.29.180.144'"
and check to make sure that only the key(s) you wanted were added.
```

## ❑ FAZER UM LOGIN REMOTO A PARTIR DO SSH CLIENT PARA UM SSH SERVER

```
ernesto@DESKTOP-F8DLV22:~$ ssh ernesto@172.29.180.144
Using username "ernesto".
ernesto@172.29.180.144's password:
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.10.16.3-microsoft-standard-WSL2 x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Sat Oct 29 19:55:32 -03 2022

System load:  0.0               Processes:    10
Usage of /:   0.6% of 250.96GB   Users logged in: 0
Memory usage: 3%               IPv4 address for eth0: 172.29.180.144
Swap usage:   0%

0 updates can be applied immediately.
New release '22.04.1 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

*** System restart required ***
Last login: Sat Oct 29 19:52:35 2022 from 172.29.176.1
ernesto@DESKTOP-F8DLV22:~$
```

```
*** System restart required ***
last login: Sat Oct 29 19:52:35 2022 from 172.29.176.1
ernesto@DESKTOP-F8DLV22:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 172.29.180.144  netmask 255.255.240.0  broadcast 172.29.191.255
    inet6 fe80::215:5dff:fe34:faf3  prefixlen 64  scopeid 0x20<link>
    ether 00:15:5d:34:fa:f3  txqueuelen 1000  (Ethernet)
    RX packets 65531  bytes 209445018 (208.4 MB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 42547  bytes 3048269 (3.0 MB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
    inet 127.0.0.1  netmask 255.0.0.0
    inet6 ::1  prefixlen 128  scopeid 0x10<host>
    loop txqueuelen 1000  (Local Loopback)
    RX packets 1073  bytes 176556 (176.5 KB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 1073  bytes 176556 (176.5 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

ernesto@DESKTOP-F8DLV22:~$ ping 172.29.180.144
PING 172.29.180.144 (172.29.180.144) 56(84) bytes of data.
64 bytes from 172.29.180.144: icmp_seq=1 ttl=64 time=0.050 ms
64 bytes from 172.29.180.144: icmp_seq=2 ttl=64 time=0.048 ms
64 bytes from 172.29.180.144: icmp_seq=3 ttl=64 time=0.058 ms
64 bytes from 172.29.180.144: icmp_seq=4 ttl=64 time=0.036 ms
64 bytes from 172.29.180.144: icmp_seq=5 ttl=64 time=0.041 ms
64 bytes from 172.29.180.144: icmp_seq=6 ttl=64 time=0.041 ms
```