

Ligação dos Cabos

console da switch - cisco -> R232;
R232 -> cisco - serial port S0 do tux3 (pode ser outro).
ether1 - eth1 tux3;
ether2 - eth1 tux4;
ether9 - eth1 tux2;
ether10 - eth2 tux4;
ether 11 - eth2 do router
PY.12 - eth1 do router

Experiência 1

Começar por dar “/system reset-configuration” no terminal do GTK;
Começar por dar “systemctl restart networking” nos terminais de cada um dos 3 tux;
Configurar os ips segundo a seguinte lista:

- > Tux 2 (terminal) : ifconfig eth1 172.16.Y1.1/24
- > Tux 3 (terminal) : ifconfig eth1 172.16.Y0.1/24
- > Tux 4 (terminal) : ifconfig eth1 172.16.Y0.254/24
- >Tux 4 (terminal) : ifconfig eth2 172.16.Y1.253/24

Em cada um dos Tux usar comando **ifconfig** para garantir que estão bem.

Executar no Tux3 : **ping 172.16.Y0.254**

Executar no Tux4 : **ping 172.16.Y0.1**

Experiência 2

Criar as duas bridges no GTK:

- > /interface bridge add name=bridgeY0
- > /interface bridge add name=bridgeY1

Apagar as portas da bridge default no GTK:

- > /interface bridge port remove [find interface =ether1]
- > /interface bridge port remove [find interface =ether2]
- > /interface bridge port remove [find interface =ether9]
- > /interface bridge port remove [find interface =ether10]
- > /interface bridge port remove [find interface =ether11]

Adicionar as portas às bridges corretas no GTK:

- > /interface bridge port add bridge=bridgeY0 interface=ether1
- > /interface bridge port add bridge=bridgeY0 interface=ether2
- > /interface bridge port add bridge=bridgeY1 interface=ether9
- > /interface bridge port add bridge=bridgeY1 interface=ether10
- > /interface bridge port add bridge=bridgeY1 interface=ether11

/interface bridge port print brief: verificar como esta atualmente a configuração de cada porta da bridge.

Experiência 3

Ativar IP_Forwarding e Desativar ICMP echo-ignore-broadcast no terminal do tux4:

- > sysctl net.ipv4.ip_forward=1
- > sysctl net.ipv4.icmp_echo_ignore_broadcasts=0

Colocar no terminal do tux3 para definir a rota:

- > route add -net 172.16.Y1.0/24 gw 172.16.Y0.254

Colocar no terminal do tux2 para definir a rota:

- > route add -net 172.16.Y0.0/24 gw 172.16.Y1.253

route -n : verificar as rotas que estão atualmente definidas no tux
Executar no tux3 : **ping 172.16.Y1.1**

Experiência 4

Trocar o cabo que está ligado à consola da switch para a porta Router MT (ou MTIK). No GTK dar o comando:

- > /system reset-configuration

Configurar IP do router no GTK:

- > /ip address add address=172.16.1.Y9/24 interface=ether1
- > /ip address add address=172.16.Y1.254/24 interface=ether2

Adicionar as seguintes rotas no terminal do tux3:

- > route add -net 172.16.Y1.0/24 gw 172.16.Y0.254
- > route add -net 172.16.1.0/24 gw 172.16.Y0.254

Adicionar as seguintes rotas no terminal do tux4:

- > route add -net 172.16.1.0/24 gw 172.16.Y1.254

Adicionar as seguintes rotas no terminal do tux2:

- > route add -net 172.16.Y0.0/24 gw 172.16.Y1.253
- > route add -net 172.16.1.0/24 gw 172.16.Y1.254

Colocar no GTK:

- > /ip route add dst-address=172.16.Y0.0/24 gateway=172.16.Y1.253

/ip route add dst-address=0.0.0.0/0 gateway=172.16.1.254 : caso fique sem a default route para a internet; colocar no GTK

Testes que funciona (no GTK)::

- > **ping 172.16.Y1.1**
- > **ping 172.16.Y0.1**

Testes no terminal do Tux2:

- > **ping 172.16.Y0.1**
- > **ping 172.16.1.10**

Experiência 5

Configurar nos terminais dos tuxY2, tuxY3 e tuxY4

- > nano /etc/resolv.conf
- > nameserver 10.227.20.3

Tentar pingar cenhas para verificar se está tudo a dar certo (terminais):

- > **ping google.com**
- > **ping netlab.fe.up.pt**

Experiência 6

Sequência de comandos (assumindo que o application.c está no Ambiente de Trabalho) no terminal do tux3:

- > cd Desktop
- > gcc -o download application.c

Teste da app:

PUBLIC SERVERS:

- > URL 1: ./download ftp://ftp.up.pt/pub/gnu/emacs/elisp-manual-21-2.8.tar.gz
(pode ser necessario mudar o DNS para nameserver 193.136.28.10)
- > URL 2: ./download ftp://demo:password@test.rebex.net/readme.txt
- > URL 3: ./download ftp://anonymous:anonymous@ftp.bit.nl/speedtest/100mb.bin

NET LAB:

- > URL 1: ./download ftp://rcom:rcom@ftp.netlab.fe.up.pt/pipe.txt
- > URL 2: ./download ftp://rcom:rcom@ftp.netlab.fe.up.pt/files/crab.mp4