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Partint de l'adreça 192.168.0.0/16 es demana que feu en grups de 4, col·laborativament, un diagrama general de la xarxa de classe, de forma que a cada fila hi hagi un router. A cada router hi connectareu:

- Dos PC de la mateixa fila

j18 – FastEthernet 0/0

j16 – FastEthernet 0/1

- *Els dos routers de les files contigües (la del davant i la del darrera). En cas que sigui la primera o última fila, s'hi connectarà el router de la fila de l'altra banda del passadís (de l'esquerra o de la dreta)*

Heu de proposar adreces de xarxa per a totes les xarxes necessàries, fent un aprofitament màxim de les adreces, però tenint en compte que a cada fila hi podrien haver fins a 100 ordinadors.

Un cop revisat per part del professor i assignades les adreces de xarxa, configureu els routers, incloent el DHCP.

Entregueu:

- El diagrama general de la xarxa de classe
 - Un diagrama detallat de la xarxa de la vostra fila d'ordinadors
 - El llistat de comandes que heu utilitzat al router
-
- El llistat de comandes que heu utilitzat per comprovar que la xarxa estava ben configurada

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Instal·lar Putty

Buscar amb **dmesg** el dispositiu serial **ttyUSB0**

```
[ 777.216590] usb 2-1.4: Product: USB-Serial Controller
```

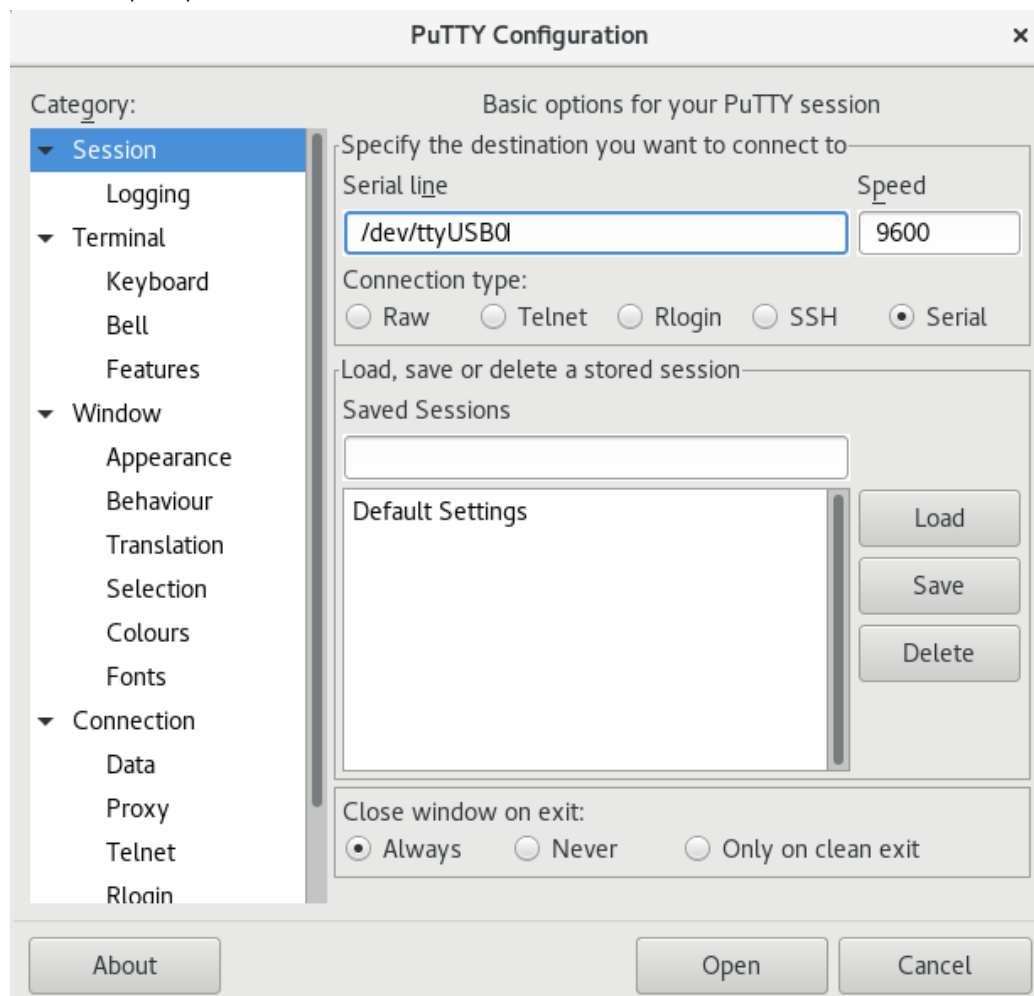
```
[ 777.216592] usb 2-1.4: Manufacturer: Prolific Technology Inc.
```

```
[ 777.217082] pl2303 2-1.4:1.0: pl2303 converter detected
```

```
[ 777.218762] usb 2-1.4: pl2303 converter now attached to ttyUSB0
```

Hem de canviar els permisos de **ttyUSB0** y amb **chmod** canviar-ho amb els permisos **o+rw**.

Obrim el putty



```
MixAritos>enable
```

```
Password: clase
```

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MixAritos#

MixAritos#configure terminal

J18 (FastEthernet 0/0)

MixAritos#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

MixAritos(config)#interface FastEthernet 0/0

MixAritos(config-if)#ip address 192.168.4.1 255.255.255.128

MixAritos(config-if)#no shutdown

MixAritos(config-if)#

*Jan 1 00:40:59.931: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

*Jan 1 00:41:01.235: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up

J16 (FastEthernet 0/1)

MixAritos#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

MixAritos(config)#interface FastEthernet 0/1

MixAritos(config-if)#ip address 192.168.4.129 255.255.255.128

MixAritos(config-if)#no shutdown

MixAritos(config-if)#

*Jan 1 00:50:21.883: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up

*Jan 1 00:50:22.883: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

*Jan 1 00:50:24.307: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up

MixAritos(config-if)#

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DHCP J18 (FastEthernet 0/0)

```
MixAritos>enable
```

```
MixAritos#configure terminal
```

Enter configuration commands, one per line. End with CNTL/Z.

```
MixAritos(config)#ip dhcp pool POOL1
```

```
MixAritos(dhcp-config)#network 192.168.4.0 255.255.255.128
```

```
MixAritos(dhcp-config)#default-router 192.168.4.1
```

```
MixAritos(dhcp-config)#ip dhcp excluded-address 192.168.4.1
```

```
MixAritos(config)#exit
```

```
MixAritos#
```

```
*Jan  1 00:53:08.239: %SYS-5-CONFIG_I: Configured from console by console
```

```
MixAritos#
```

J18

```
[root@j18 ~]# /etc/init.d/network restart
```

Restarting network (via systemctl):

[OK]

DHCP J16 (FastEthernet 0/1)

```
MixAritos>enable
```

```
MixAritos#configure terminal
```

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Enter configuration commands, one per line. End with CNTL/Z.

MixAritos(config)#ip dhcp pool POOL2

MixAritos(dhcp-config)#network 192.168.4.128 255.255.255.128

MixAritos(dhcp-config)#default-router 192.168.4.129

MixAritos(dhcp-config)#ip dhcp excluded-address 192.168.4.129

MixAritos(config)#exit

MixAritos#

*Jan 1 00:59:03.415: %SYS-5-CONFIG_I: Configured from console by console

MixAritos#

J16

[root@j16 ~]# /etc/init.d/network restart

Restarting network (via systemctl):

[OK]

Router R18x05 guardar a l'ststartup-config

MixAritos#copy running-config startup-config

Destination filename [startup-config]?

Building configuration...

[OK]

MixAritos#

Router R18x05 (Serial 0/0/1)

MixAritos#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

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MixAritos(config)#interface Serial 0/0/1

MixAritos(config-if)#ip address 192.168.250.21 255.255.255.252

MixAritos(config-if)#no shutdown

MixAritos(config-if)#

*Jan 1 01:17:12.003: %LINK-3-UPDOWN: Interface Serial0/0/1, changed state to up

*Jan 1 01:17:15.003: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up

MixAritos(config-if)#exit

Router R18x05 (Serial 0/0/0)

MixAritos#configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

MixAritos(config)#interface Serial 0/0/0

MixAritos(config-if)#ip address 192.168.250.14 255.255.255.252

MixAritos(config-if)#no shutdown

*Jan 1 01:18:30.015: %LINK-3-UPDOWN: Interface Serial0/0/0, changed state to d

MixAritos(config-if)#exit

Routing Serial 0/0/0 i Serial 0/0/1

MixAritos(config)# ip route 192.168.5.0 255.255.255.128 se0/0/1

MixAritos(config)# ip route 192.168.3.0 255.255.255.128 se0/0/1

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```
MixAritos(config)# ip route 192.168.1.0 255.255.255.128 se0/0/1
```

```
MixAritos(config)# ip route 192.168.0.0 255.255.255.128 se0/0/0
```

```
MixAritos(config)# ip route 192.168.2.0 255.255.255.128 se0/0/0
```

PING A LES DIFERENTS XARXES

```
MixAritos#ping 192.168.5.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.5.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/14/16 ms
MixAritos#
```

```
MixAritos#ping 192.168.3.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.3.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 28/28/28 ms
MixAritos#
```