

Hardware:

Para la Red (Artifical Inteligence,Plaform & Ecosystems,Marketing) Subdivisiones se utilizó el siguiente equipo:

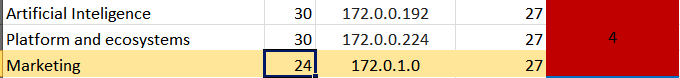
* 1 Router 2901 
* 4 Switches 2950-24 de 24 puertos 
* 2 Cables Directos 
* 3 Cables Cruzados 

Creación de Vlan:

Las Vlan Serán Creadas dentro de los Switches, con la finalidad de distribuir los sub departamentos.

Serán las siguientes con la siguiente distribución:

Son 84 host que se deben conectar.



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Vlan | Switch 1 | Switch 2 | Switch 3 | Switch 4 |
| IA- 172.0.0.222/27 | 15-22 | 15-22 | 15-22 | 15-20 |
| PC - 172.0.0.254/27 | 7-14 | 7-14 | 7-15 | 7-15 |
| MK -172.0.1.30/27 | 1-6 | 1-6 | 1-6 | 1-6 |
|  |  |  |  |  |
|  |  |  |  |  |

CONFIGURACIÓN SWITCH 1

Switch>enable

Switch#vlan database

% Warning: It is recommended to configure VLAN from config mode,

as VLAN database mode is being deprecated. Please consult user

documentation for configuring VTP/VLAN in config mode.

Switch(vlan)#vlan 0222 name IA

VLAN 222 added:

Name: IA

Switch(vlan)#vlan 0254 name PC

VLAN 254 added:

Name: PC

Switch(vlan)#vlan 0130 name MK

VLAN 130 added:

Name: MK

Switch(vlan)#exit

APPLY completed.

Exiting....

Switch#configure t

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

Switch(config)#in ra fa 0/1-6

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0130

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in ra fa 0/7-14

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0254

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in ra fa 0/15-22

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0222

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

sw tr na vlan 0254

Switch(config-if)#sw tr all vlan 0222

Switch(config-if)#sw tr all vlan 0130

Switch(config-if)#no sh

Switch(config-if)#exit

Switch(config)#exit

Switch#

%SYS-5-CONFIG\_I: Configured from console by console

Switch#copy running-config startup-config

Destination filename [startup-config]?

CONFIGURACIÓN SWITCH 2

Switch>enable

Switch#vlan database

% Warning: It is recommended to configure VLAN from config mode,

as VLAN database mode is being deprecated. Please consult user

documentation for configuring VTP/VLAN in config mode.

Switch(vlan)#vlan 0222 name IA

VLAN 222 added:

Name: IA

Switch(vlan)#vlan 0254 name PC

VLAN 254 added:

Name: PC

Switch(vlan)#vlan 0130 name MK

VLAN 130 added:

Name: MK

Switch(vlan)#exit

APPLY completed.

Exiting....

Switch#configure t

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

Switch(config)#in ra fa 0/1-6

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0130

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in ra fa 0/7-14

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0254

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in ra fa 0/15-22

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0222

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

sw tr na vlan 0254

Switch(config-if)#sw tr all vlan 0222

Switch(config-if)#sw tr all vlan 0130

Switch(config-if)#no sh

Switch(config-if)#exit

Switch(config)#exit

Switch#

%SYS-5-CONFIG\_I: Configured from console by console

Switch#copy running-config startup-config

Destination filename [startup-config]?

CONFIGURACIÓN SWITCH 3

Switch>enable

Switch#vlan database

% Warning: It is recommended to configure VLAN from config mode,

as VLAN database mode is being deprecated. Please consult user

documentation for configuring VTP/VLAN in config mode.

Switch(vlan)#vlan 0130 name MK

VLAN 130 added:

Name: MK

Switch(vlan)#vlan 0222 name IA

VLAN 222 added:

Name: IA

Switch(vlan)#vlan 0254 name PC

VLAN 254 added:

Name: PC

Switch(vlan)#exit

APPLY completed.

Exiting....

Switch#configure terminal

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

Switch(config)#in ra fa 0/1-6

Switch(config-if-range)#sw acc vlan 0130

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in ra fa 0/7-15

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0254

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in ra fa 0/15-22

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0222

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

Switch(config-if)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up

Switch(config-if)#sw tr na vlan 0130

Switch(config-if)#sw tr all vlan 0254,0222

CONFIGURACIÓN SWITCH 4

Switch>enable

Switch#conf t

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

Switch(config-if)#no sh

Switch(config-if)#exit

Switch(config)#exit

Switch#vlan database

VLAN 254 added:

Name: PC

Switch(vlan)#vlan 0255 name IA

VLAN 255 added:

Name: IA

VLAN 130 added:

Name: MK

Switch(vlan)#exit

APPLY completed.

Exiting....

Switch#configure terminal

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

Switch(config)#in ra fa 0/1-6

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0130

Switch(config-if-range)#no sh

Switch(config-if-range)#exit

Switch(config)#exit

Switch#

%SYS-5-CONFIG\_I: Configured from console by console

Switch#vlan database

% Warning: It is recommended to configure VLAN from config mode,

as VLAN database mode is being deprecated. Please consult user

documentation for configuring VTP/VLAN in config mode.

Switch(vlan)#no vlan 0255

Deleting VLAN 255...

Switch(vlan)#vlan 0222 name IA

VLAN 222 modified:

Name: IA

Switch(vlan)#exit

APPLY completed.

Exiting....

Switch#

t

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

Switch(config)#in ra fa 0/15-20

Switch(config-if-range)#sw mo acc

Switch(config-if-range)#sw acc vlan 0222

Switch(config-if-range)#no sh

Switch(config-if-range)#

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/21 (1), with Switch FastEthernet0/24 (222).

no sh

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/22 (1), with Switch FastEthernet0/24 (254).

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/23 (1), with Switch FastEthernet0/24 (130).

Switch(config-if-range)#exit

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

Switch(config-if)#no sh

Switch(config-if)#

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/21 (1), with Switch FastEthernet0/24 (222).

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/22 (1), with Switch FastEthernet0/24 (254).

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/23 (1), with Switch FastEthernet0/24 (130).

in fa 0/23

Switch(config-if)#sw mo tr

Switch(config-if)#no sh

Switch(config-if)#exit

Switch(config)#in fa 0/21

Switch(config-if)#sw mo tr

Switch(config-if)#no sh

Switch(config-if)#

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/21 (1), with Switch FastEthernet0/24 (222).

in fa 0/22

Switch(config-if)#sw mo tr

Switch(config-if)#no sh

Switch(config-if)#

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/22 (1), with Switch FastEthernet0/24 (254).

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/23 (1), with Switch FastEthernet0/24 (130).

exit

Switch(config)#in fa 0/22

Switch(config-if)#sw mo tr

Switch(config-if)#sw tr na vlan 0254

Switch(config-if)#%SPANTREE-2-UNBLOCK\_CONSIST\_PORT: Unblocking FastEthernet0/22 on VLAN0222. Port consistency restored.

%SPANTREE-2-UNBLOCK\_CONSIST\_PORT: Unblocking FastEthernet0/22 on VLAN0001. Port consistency restored.

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/21 (1), with Switch FastEthernet0/24 (222).

sw tr all

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/23 (1), with Switch FastEthernet0/24 (130).

0225,0130

^

% Invalid input detected at '^' marker.

Switch(config-if)#sw tr all 0222,0130

^

% Invalid input detected at '^' marker.

Switch(config-if)#sw tr all vlan 0222,0130

Switch(config-if)#exit

Switch(config)#in fa 0/21

Switch(config-if)#sw mo tr

Switch(config-if)#sw tr na

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/21 (1), with Switch FastEthernet0/2sw tr na

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/23 (1), with Switch FastEthernet0/2sw tr na 0222

^

% Invalid input detected at '^' marker.

Switch(config-if)#sw tr na vlan 0222

Switch(config-if)#sw tr all vlan 0254,0130

Switch(config-if)#exit

Switch(config)#in fa

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/23 (1), with Switch FastEthernet0/24 (

Switch(config)#in fa 0/23

Switch(config-if)#sw mo tr

Switch(config-if)#sw tr na 0130

^

% Invalid input detected at '^' marker.

Switch(config-if)#sw tr na vlan 0130

Switch(config-if)#sw tr all vlan 0222,0254

Switch(config-if)#no sh

Switch(config-if)#exit

Switch(config)#exit

Switch#

%SYS-5-CONFIG\_I: Configured from console by console

Switch#copy running-config startup-config

Destination filename [startup-config]?

Building configuration...

[OK]

Switch#

CONFIGURACIÓN ROUTER

Router>enable

Router#conf t

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

Router(config)#in gi 0/0.0222

Router(config-subif)#en

Router(config-subif)#encapsulation dot

Router(config-subif)#encapsulation dot i

Router(config-subif)#encapsulation dot

Router(config-subif)#encapsulation dot1Q 0222

Router(config-subif)#ip add

Router(config-subif)#ip address 172.0.0.222 255.255.255.192

Router(config-subif)#exit

Router(config)#in gi 0/0.0254

Router(config-subif)#en

Router(config-subif)#encapsulation do

Router(config-subif)#encapsulation dot1Q 0254

Router(config-subif)#ip add

Router(config-subif)#ip address 172.0.0.254 255.255.255.224

% 172.0.0.192 overlaps with GigabitEthernet0/0.222

Router(config-subif)#in gi 0/0.20

Router(config-subif)#exit

Router(config)#no in gi 0.0222

^

% Invalid input detected at '^' marker.

Router(config)#no in gi 0/0.0222

Router(config)#in gi 0/0.10

Router(config-subif)#enca

Router(config-subif)#encapsulation dot

Router(config-subif)#encapsulation dot1Q 0222

Router(config-subif)#ip

Router(config-subif)#ip ad

Router(config-subif)#ip address 172.0.0.222 255.255.255.224

Router(config-subif)#no sh

Router(config-subif)#exit

Router(config)#in gi 0/0.20

Router(config-subif)#enca

Router(config-subif)#encapsulation do

Router(config-subif)#encapsulation dot1Q 0254

%Configuration of multiple subinterfaces of the same main

interface with the same VID (254) is not permitted.

This VID is already configured on GigabitEthernet0/0.254.

Router(config-subif)#exit

Router(config)#no in gi 0/0.0254

Router(config)#in gi 0/0.20

Router(config-subif)#enca

Router(config-subif)#encapsulation do

Router(config-subif)#encapsulation dot1Q 0254

Router(config-subif)#ip ad

Router(config-subif)#ip address 172.0.0.254 255.255.255.224

Router(config-subif)#no sh

Router(config-subif)#exit

Router(config)#in gi 0/0.30

Router(config-subif)#enca

Router(config-subif)#encapsulation do

Router(config-subif)#encapsulation dot1Q 0130

Router(config-subif)#ip add

Router(config-subif)#ip address 172.0.1.30 255.255.255.224

Router(config-subif)#no sh

Router(config-subif)#exit

Router(config)#exit

Router#

%SYS-5-CONFIG\_I: Configured from console by console

Router#

Router#

Router#conf t

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

Router(config)#ip dh

Router(config)#ip dhcp ex

Router(config)#ip dhcp excluded-address 172.0.0.222

Router(config)#ip dhcp excluded-address 172.0.0.254

Router(config)#ip dhcp excluded-address 172.0.1.30

Router(config)#dhc

Router(config)#ip

Router(config)#ip dh

Router(config)#ip dhcp po

Router(config)#ip dhcp pool IA

Router(dhcp-config)#ne

Router(dhcp-config)#network 172.0.0.222 255.255.255.224

Router(dhcp-config)#de

Router(dhcp-config)#default-router 172.0.0.192

Router(dhcp-config)#dns

Router(dhcp-config)#dns-server 10.0.9.1

Router(dhcp-config)#exit

Router(config)#ip p

Router(config)#ip po

Router(config)#ip poo

Router(config)#ip

Router(config)#ip dh

Router(config)#ip dhcp p

Router(config)#ip dhcp pool PC

Router(dhcp-config)#net

Router(dhcp-config)#network 172.0.0.254 255.255.224

^

% Invalid input detected at '^' marker.

Router(dhcp-config)#network 172.0.0.254 255.255.255.224

Router(dhcp-config)#de

Router(dhcp-config)#default-router 172.0.0.224

Router(dhcp-config)#dn

Router(dhcp-config)#dns-server 10.0.9.1

Router(dhcp-config)#exit

Router(config)#ip dhh

Router(config)#ip dh

Router(config)#ip dhcp poo

Router(config)#ip dhcp pool MK

Router(dhcp-config)#net

Router(dhcp-config)#network 172.0.1.30 255.255.255.224

Router(dhcp-config)#defa

Router(dhcp-config)#default-router 172.0.1.0

Router(dhcp-config)#dns

Router(dhcp-config)#dns-server 10.0.9.1

Router(dhcp-config)#exit

Router(config)#ho

Router(config)#hostname R4

R4(config)#exit

R4#

%SYS-5-CONFIG\_I: Configured from console by console

R4#c

R4#co

R4#cop

R4#copy ru

R4#copy running-config st

R4#copy running-config startup-config

Destination filename [startup-config]?

Building configuration...

[OK]

# Enrutamiento

R4(config)#ROUTER RIP

R4(config-router)#VERSION 2

R4(config-router)#NETWORK 172.0.0.222

R4(config-router)#NETWORK 172.0.0.254

R4(config-router)#NETWORK 172.0.0.222

R4(config-router)#NETWORK 172.0.1.30

R4(config-router)#NETWORK 10.0.9.0

R4(config-router)#EXIT

**Router con rip**

R4(config)#ROUTER EIGRP 5000

R4(config-router)#REDistribute RIP METRIC 1658031 514560 255 255 1500

R4(config-router)#EXIT

R4(config)#ROUTER RIP

R4(config-router)#VERSION 2

R4(config-router)#REDISTRIBUTE EIGRP 5000 METRIC 1

R4(config-router)#EXIT

R4(config)#ROUTER EIGRP 5000

R4(config-router)#NETWORK 10.0.9.0

R4(config-router)#

**Correcciones en los Switch ( No asigna Direccion Dhcp)**

SW 3:

Switch>enable

Switch#conf t

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

Switch(config)#

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

Switch(config-if)#no sw tr na vlan 0130

Switch(config-if)#no sw tr all vlan 0130,0254,0222

Switch(config-if)#exit

SW 4:

Switch>ena

Switch>enable

Switch#conf t

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

Switch(config)#in fa 0/23

Switch(config-if)#sw mo tr

Switch(config-if)#no sw tr na vlan 0130

Switch(config-if)#no sw tr all vlan 0130,0254,0222

Switch(config-if)#exit

Switch(config)#in fa 0/22

Switch(config-if)#sw

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/23 (1), with Switch FastEthernet0/24 (130

Switch(config-if)#sw mo tr

Switch(config-if)#no sw tr na vlan 0254

Switch(config-if)#no sw tr na vlan 0254%SPANTREE-2-RECV\_PVID\_ERR: Received BPDU with inconsistent peer vlan id 254 on FastEthernet0/22 VLAN1.

%SPANTREE-2-BLOCK\_PVID\_LOCAL: Blocking FastEthernet0/22 on VLAN0001. Incon

Switch(config-if)#no sw tr na vlan 0222

Switch(config-if)#no sw tr all vlan 0222,0130,0254

Switch(config-if)#

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/22 (1), with Switch FastEthernet0/24 (254).

Switch(config-if)#exit

Switch(config)#

Switch(config)#in fa 0/21

Switch(config-if)#sw mo tr

Switch(config-if)#no sw tr na vlan

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/21 (222), with Switch FastEno sw tr na vlan 0222

Switch(config-if)#no sw tr all vlan 0222,0130,0254

SW 2:

Switch>enable

Switch#conf t

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

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

Switch(config-if)#no sw tr na vlan 0222

Switch(config-if)#no sw tr all vlan 0222,0254,0130

Switch(config-if)#no sw tr na vlan 0254

SW 1:

Switch>ena

Switch>enable

Switch#conf t

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

Switch(config)#in fa 0/24

Switch(config-if)#sw mo tr

Switch(config-if)#no sw tr na vlan 0222

Switch(config-if)#no sw tr all vlan 0222,0254,0130

Switch(config-if)#

%CDP-4-NATIVE\_VLAN\_MISMATCH: Native VLAN mismatch discovered on FastEthernet0/24 (1), with Switch FastEthernet0/21 (222).