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# Paso 4

no ip domain-lookup

hostname B1-R1

service password-encryption

enable secret class

banner motd #Warning. #

line con 0

password cisco

login

logging synchronous

line vty 0 4

password cisco

login

exit

ip domain-name cisco.com

crypto key generate rsa

1024

username admin secret cisco

line vty 0 4

transport input ssh

login local

exit

ip ssh version 2

-- Se define la version de ssh la version 2 es mejor

-- Se crea el usuario local para el acceso al dispositivo ya sea router o switch

--Se deshabilitan todos los puertos y se habilitan de acuerdo a como se vallan usando

int range f0/1-24

shutdown

exit

int range g0/1-2

shutdown

exit

--Asignar la descripcion para cada interfaz

int nombreInterfaz

description \_descripcion adecuada para cada interfaz\_

# Paso 5

--Asignacion de vlans a puertos

vlan 10

name INVESTIGACIÓN/DESARROLLO

vlan 20

name PRODUCCIÓN

vlan 30

name VENTAS

vlan 100

name ADMOR

exit

SW1-B1-R1

int vlan 100

ip address 10.129.207.253 255.255.255.240

SW1-B2-R1

int vlan 100

ip address 10.129.239.249 255.255.255.224

SW2-B2-R1

int vlan 100

ip address 10.129.239.250 255.255.255.224

SW3-B2-R1

int vlan 100

ip address 10.129.239.251 255.255.255.224

SW4-B2-R1

int vlan 100

ip address 10.129.239.252 255.255.255.224

SW5-B2-R1

int vlan 100

ip address 10.129.239.253 255.255.255.224

SW1-B3-R1

int vlan 100

ip address 10.129.209.251 255.255.255.128

SW2-B3-R1

int vlan 100

ip address 10.129.209.252 255.255.255.128

SW3-B3-R1

int vlan 100

ip address 10.129.209.253 255.255.255.128

SW1-B4-R1

int vlan 1

ip address 10.129.191.253 255.255.248.0

SW1-B5-R1

int vlan 1

ip address 10.129.183.253 255.255.248.0

SW1-B1-R1

int range f0/11-16

switchport mode access

switchport access vlan 100

no shutdown

exit

SW1-B2-R1,SW2-B2-R1,SW1-B3-R1

int range f0/2-4

switchport mode access

switchport access vlan 10

no shutdown

exit

int range f0/5-7

switchport mode access

switchport access vlan 20

no shutdown

exit

int range f0/8-10

switchport mode access

switchport access vlan 30

no shutdown

exit

int range f0/11-20

switchport mode access

switchport access vlan 100

no shutdown

exit

# Paso 7

SW1-B1-R1

ip default-gateway 10.129.207.254

SW1-B2-R1

int range f0/1,f0/21

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.239.254

SW2-B2-R1

int range f0/1,f0/24

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.239.254

SW3-B2-R1

int range f0/1,f0/22

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.239.254

SW4-B2-R1

int range f0/1,f0/21,f0/22,f0/23,f0/24

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.239.254

SW5-B2-R1

int range f0/1,f0/23

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.239.254

SW1-B3-R1

int range f0/1,f0/22

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.209.254

SW2-B3-R1

int range f0/1,f0/21,f0/22

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.209.254

SW3-B3-R1

int range f0/1,f0/21

switchport mode trunk

switchport trunk native vlan 99

exit

ip default-gateway 10.129.209.254

SW1-B4-R1

ip default-gateway 10.129.191.254

SW1-B5-R1

ip default-gateway 10.129.183.254

# Paso 8

SW1-B2-R1,SW2-B2-R1,SW1-B3-R1

int f0/11-20

switchport port-security

switchport port-security violation shutdown

switchport port-security mac-address sticky

switchport port-security maximum 1

SW1-B1-R1

int f0/12-20

switchport port-security

switchport port-security violation shutdown

switchport port-security mac-address sticky

switchport port-security maximum 1

# Paso 9

B1-R1

ip dhcp excluded-address 10.129.248.1 10.129.248.5

ip dhcp excluded-address 10.129.255.254

ip dhcp excluded-address 10.129.244.1 10.129.244.5

ip dhcp excluded-address 10.129.247.254

ip dhcp excluded-address 10.129.240.1 10.129.240.5

ip dhcp excluded-address 10.129.243.254

ip dhcp excluded-address 10.129.216.1 10.129.216.5

ip dhcp excluded-address 10.129.223.254

ip dhcp excluded-address 10.129.210.1 10.129.210.5

ip dhcp excluded-address 10.129.211.254

ip dhcp excluded-address 10.129.212.1 10.129.212.5

ip dhcp excluded-address 10.129.215.254

ip dhcp excluded-address 10.129.176.1 10.129.176.5

ip dhcp excluded-address 10.129.183.254

ip dhcp excluded-address 10.129.183.253

ip dhcp excluded-address 10.129.184.1 10.129.184.5

ip dhcp excluded-address 10.129.191.254

ip dhcp excluded-address 10.129.191.253

ip dhcp pool B2R1\_VLAN10

network 10.129.248.0 255.255.248.0

default-router 10.129.255.254

dns-server 10.129.207.243

exit

ip dhcp pool B2R1\_VLAN20

network 10.129.244.0 255.255.252.0

default-router 10.129.247.254

dns-server 10.129.207.243

exit

ip dhcp pool B2R1\_VLAN30

network 10.129.240.0 255.255.252.0

default-router 10.129.243.254

dns-server 10.129.207.243

exit

ip dhcp pool B3R1\_VLAN10

network 10.129.216.0 255.255.248.0

default-router 10.129.223.254

dns-server 10.129.207.243

exit

ip dhcp pool B3R1\_VLAN20

network 10.129.210.0 255.255.254.0

default-router 10.129.211.254

dns-server 10.129.207.243

exit

ip dhcp pool B3R1\_VLAN30

network 10.129.212.0 255.255.252.0

default-router 10.129.215.254

dns-server 10.129.207.243

exit

ip dhcp pool B5R1\_LAN

network 10.129.176.0 255.255.248.0

default-router 10.129.183.254

dns-server 10.129.207.243

exit

ip dhcp pool B4R1\_LAN

network 10.129.184.0 255.255.248.0

default-router 10.129.191.254

dns-server 10.129.207.243

exit

B2R1

interface g0/0.10

ip helper-address 10.129.207.234

interface g0/0.20

ip helper-address 10.129.207.234

interface g0/0.30

ip helper-address 10.129.207.234

B3R1

interface g0/0.10

ip helper-address 10.129.207.234

interface g0/0.20

ip helper-address 10.129.207.234

interface g0/0.30

ip helper-address 10.129.207.234

B4R1

interface g0/0

ip helper-address 10.129.207.234

B5R1

interface g0/0

ip helper-address 10.129.207.234

# Paso 10

B1-R1,B2-R1,B3-R1,B1

ntp server 10.129.207.242

B1-R1 y SW1-B1-R1

logging host 10.129.207.243

service timestamps log datetime msec

# Paso 11

SW1-B2R1 S1-S2-S3-S4-S5

interface g0/0.10

description VLAN 10

encapsulation dot1Q 10

ip address 10.129.255.254 255.255.248.0

interface g0/0.20

description VLAN 20

encapsulation dot1Q 20

ip address 10.129.247.254 255.255.252.0

interface g0/0.30

description VLAN 30

encapsulation dot1Q 30

ip address 10.129.243.254 255.255.252.0

interface g0/0.100

description VLAN 100

encapsulation dot1Q 100

ip address 10.129.239.254 255.255.255.224

exit

interface g0/0

no shutdown

SW1-B3R1 S1-S2-S3

interface g0/0.10

description VLAN 10

encapsulation dot1Q 10

ip address 10.129.223.254 255.255.248.0

interface g0/0.20

description VLAN 20

encapsulation dot1Q 20

ip address 10.129.211.254 255.255.254.0

interface g0/0.30

description VLAN 30

encapsulation dot1Q 30

ip address 10.129.215.254 255.255.252.0

interface g0/0.100

description VLAN 100

encapsulation dot1Q 100

ip address 10.129.209.254 255.255.255.128

exit

interface g0/0

no shutdown

# Paso 12

Región 1

RIP V2

B1-R1

router rip

versión 2

network 10.0.0.0

passive-interface g0/0

end

B2-R1

router rip

version 2

network 10.0.0.0

passive-interface g0/0.10

passive-interface g0/0.20

passive-interface g0/0.30

passive-interface g0/0.100

end

B3-R1

router rip

version 2

network 10.0.0.0

passive-interface g0/0.10

passive-interface g0/0.20

passive-interface g0/0.30

passive-interface g0/0.100

end

B1

router rip

versión 2

end

Region 2

RIP V1

B4-R1

router rip

network 10.0.0.0

passive-interface g0/0

end

B5-R1

router rip

network 10.0.0.0

passive-interface g0/0

end

# Paso 13

ip route 0.0.0.0 0.0.0.0 10.129.167.253

router rip

version 2

default-information originate

end

# Paso 14

ISP-R1

ip route 209.165.200.224 255.255.255.224 209.165.201.1

B1

ip route 209.165.201.4 255.255.255.252 209.165.201.2

ip route 209.165.201.8 255.255.255.252 209.165.201.2

ip route 207.248.160.1 255.255.255.255 209.165.201.2

# Paso 15

**Configuración de NAT estática y PAT**

**B1**

access-list 1 permit 10.128.0.0 0.1.255.255

ip nat inside source static 10.129.207.244 209.165.200.225

ip nat inside source static 10.129.207.241 209.165.200.226

ip nat pool PAT 209.165.200.227 209.165.200.254 netmask 255.255.255.224

ip nat inside source list 1 pool PAT overload

int s0/0/0

ip nat inside

int s0/0/1

ip nat inside

int s0/1/0

ip nat inside

int s0/1/1

ip nat outside

exit

exit

# Paso 16

**TELNET Y SSH**

(Todos lo Switches y routers)

line vty 0 4

transport input all

login local

**Servidores de la R1**

**Web-Intranet**

**IP:** 10.129.207.244

**MÁSCARA:** 255.255.255.240

**GATEWAY:** 10.129.207.254

**DNS:** 10.129.207.243

**Servidor DNS interno**

**IP:** 10.129.207.243

**MÁSCARA:** 255.255.255.240

**GATEWAY:** 10.129.207.254

**DNS:** 10.129.207.243

**Servidor de Correo**

**IP:** 10.129.207.242

**MÁSCARA:** 255.255.255.240

**GATEWAY:** 10.129.207.254

**DNS:** 10.129.207.243

**Servidores FTP/TFTP**

**IP:** 10.129.207.241

**MÁSCARA:** 255.255.255.240

**GATEWAY:** 10.129.207.254

**DNS:** 10.129.207.243

**Servidores Externos**

**Servidor DNS**

**IP:** 209.165.201.5

**MÁSCARA:** 255.255.255.252

**GATEWAY:** 209.165.201.6

**DNS:** 209.165.201.5

**Servidor WEB**

**IP:** 209.165.201.9

**MÁSCARA:** 255.255.255.252

**GATEWAY:** 209.165.201.10

**DNS:** 209.165.201.5

# Paso 17

B5R1

ip access-list extended FIREWALL

permit ip host 10.129.176.1 10.129.207.240 0.0.0.15

permit ip 10.129.176.0 0.0.7.255 host 10.129.207.244

deny icmp 10.129.176.0 0.0.7.255 host 10.129.207.243

permit ip 10.129.176.0 0.0.7.255 host 10.129.207.243

permit ip 10.129.176.0 0.0.7.255 host 10.129.207.242

deny ip 10.129.176.0 0.0.7.255 10.129.207.240 0.0.0.15

permit udp host 0.0.0.0 eq 68 host 255.255.255.255 eq 67

permit ip 10.129.176.0 0.0.7.255 any

exit

int g0/0

ip access-group FIREWALL IN

no shutdown

exit

B4R1

ip access-list extended FIREWALL

permit ip host 10.129.184.1 10.129.207.240 0.0.0.15

permit ip 10.129.184.0 0.0.7.255 host 10.129.207.244

deny icmp 10.129.184.0 0.0.7.255 host 10.129.207.243

permit ip 10.129.184.0 0.0.7.255 host 10.129.207.243

permit ip 10.129.184.0 0.0.7.255 host 10.129.207.242

deny ip 10.129.184.0 0.0.7.255 10.129.207.240 0.0.0.15

permit udp host 0.0.0.0 eq 68 host 255.255.255.255 eq 67

permit ip 10.129.184.0 0.0.7.255 any

exit

int g0/0

ip access-group FIREWALL IN

no shutdown

exit

B2R1

ip access-list extended FIREWALL

permit ip 10.129.239.224 0.0.0.31 any

deny ip 10.129.240.0 0.0.15.255 host 10.129.207.241

permit udp host 0.0.0.0 eq 68 host 255.255.255.255 eq 67

permit ip 10.129.240.0 0.0.15.255 any

exit

int g0/0.10

ip access-group FIREWALL IN

no shutdown

exit

int g0/0.20

ip access-group FIREWALL IN

no shutdown

exit

int g0/0.30

ip access-group FIREWALL IN

no shutdown

exit

int g0/0.100

ip access-group FIREWALL IN

no shutdown

exit

B3R1

ip access-list extended FIREWALL

deny ip 10.129.210.0 0.0.1.255 host 10.129.207.241

deny ip 10.129.212.0 0.0.3.255 host 10.129.207.241

deny ip 10.129.216.0 0.0.7.255 host 10.129.207.241

permit udp host 0.0.0.0 eq 68 host 255.255.255.255 eq 67

permit ip 10.129.208.0 0.0.15.255 any

exit

int g0/0.10

ip access-group FIREWALL IN

no shutdown

exit

int g0/0.20

ip access-group FIREWALL IN

no shutdown

exit

int g0/0.30

ip access-group FIREWALL IN

no shutdown

exit

int g0/0.100

ip access-group FIREWALL IN

no shutdown

exit

B1R1

ip access-list extended FIREWALL

permit ip 10.129.207.240 0.0.0.15 any

exit

int g0/0

ip access-group FIREWALL IN

no shutdown

exit

ISP-R1

ip access-list extended FIREWALL

permit icmp 209.165.201.0 0.0.0.15 any echo-reply

deny icmp 209.165.201.0 0.0.0.15 any echo

permit ip 209.165.201.0 0.0.0.15 any

exit

int g0/0

ip access-group FIREWALL IN

no shutdown

exit

int g0/1

ip access-group FIREWALL IN

no shutdown

exit

int s0/0/1

ip access-group FIREWALL IN

no shutdown

exit

# RIP IPv6

B1

ipv6 unicast-routing

ipv6 router rip B1en

exit

int s0/0/0

ipv6 rip B1en enable

int s0/0/1

ipv6 rip B1en enable

int s0/1/1

ipv6 rip B1en enable

exit

B1-R1

ipv6 unicast-routing

ipv6 router rip B1R1en

exit

int g0/0

ipv6 rip B1R1en enable

int s0/0/0

ipv6 rip B1R1en enable

int s0/0/1

ipv6 rip B1R1en enable

exit

B2-R1

ipv6 unicast-routing

ipv6 router rip B2R1en

exit

int g0/0.10

ipv6 rip B2R1en enable

int g0/0.20

ipv6 rip B2R1en enable

int g0/0.30

ipv6 rip B2R1en enable

int g0/0.100

ipv6 rip B2R1en enable

int s0/0/0

ipv6 rip B2R1en enable

int s0/0/1

ipv6 rip B2R1en enable

exit

B3-R1

ipv6 unicast-routing

ipv6 router rip B2R1en

exit

int g0/0.10

ipv6 rip B2R1en enable

int g0/0.20

ipv6 rip B2R1en enable

int g0/0.30

ipv6 rip B2R1en enable

int g0/0.100

ipv6 rip B2R1en enable

int s0/0/0

ipv6 rip B2R1en enable

int s0/0/1

ipv6 rip B2R1en enable

exit

ISP-R1

ipv6 unicast-routing

ipv6 router rip ISPR1en

exit

int g0/0

ipv6 rip ISPR1en enable

int g0/1

ipv6 rip ISPR1en enable

int s0/0/0

ipv6 rip ISPR1en enable

int loopback 0

ipv6 rip ISPR1en enable

exit

# DHCP con estado IPv6

B2R1

ipv6 local pool Vlan10 2001:DB0:ABCD::/48 116

ipv6 local pool Vlan20 2001:DB0:ABCD::1000/48 116

ipv6 local pool Vlan30 2001:DB0:ABCD::2000/48 116

ipv6 dhcp pool B2R1\_VLAN10

dns-server 2001:DB0:ABCD::8003

prefix-delegation pool Vlan10

exit

ipv6 dhcp pool B2R1\_VLAN20

dns-server 2001:DB0:ABCD::8003

prefix-delegation pool Vlan20

exit

ipv6 dhcp pool B2R1\_VLAN30

dns-server 2001:DB0:ABCD::8003

prefix-delegation pool Vlan30

exit

int g0/0.10

encapsulation dot1Q 10

ipv6 dhcp server B2R1\_VLAN10

ipv6 nd managed-config-flag

no shutdown

exit

int g0/0.20

encapsulation dot1Q 20

ipv6 dhcp server B2R1\_VLAN20

ipv6 nd managed-config-flag

no shutdown

exit

int g0/0.30

encapsulation dot1Q 30

ipv6 dhcp server B2R1\_VLAN30

ipv6 nd managed-config-flag

no shutdown

exit

B3R1

ipv6 local pool Vlan10 2001:DB0:ABCD::4000/48 116

ipv6 local pool Vlan20 2001:DB0:ABCD::5000/48 116

ipv6 local pool Vlan30 2001:DB0:ABCD::6000/48 116

ipv6 dhcp pool B3R1\_VLAN10

dns-server 2001:DB0:ABCD::8003

prefix-delegation pool Vlan10

exit

ipv6 dhcp pool B3R1\_VLAN20

dns-server 2001:DB0:ABCD::8003

prefix-delegation pool Vlan20

exit

ipv6 dhcp pool B3R1\_VLAN30

dns-server 2001:DB0:ABCD::8003

prefix-delegation pool Vlan30

exit

int g0/0.10

encapsulation dot1Q 10

ipv6 dhcp server B3R1\_VLAN10

ipv6 nd managed-config-flag

no shutdown

exit

int g0/0.20

encapsulation dot1Q 20

ipv6 dhcp server B3R1\_VLAN20

ipv6 nd managed-config-flag

no shutdown

exit

int g0/0.30

encapsulation dot1Q 30

ipv6 dhcp server B3R1\_VLAN30

ipv6 nd managed-config-flag

no shutdown

exit