Desarrollo e Implementación De Red Estructurada En Simulador Cisco Packet Tracer

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Introducción

En la presente actividad se desarrolla y analiza las temáticas de cisco CCNA1 y CCNA2 enfocadas en la identificación y solución de un problema planteado y relacionado con el enrutamiento mediante comandos del ios. Conoceremos los diferentes protocolos de routing, la implementación y configuración básica de OSPF, se analizaran y desarrollaran las instrucciones necesarias para utilizar las ACL estándar y extendidas en un router Cisco, implementaremos cada una de las funciones de DHCPv4 y se analizara la implementación de NAT con el fin de usar de forma más eficaz las direcciones IPv4, lo anterior se ejecuta utilizando la información contenida en la prueba de habilidades prácticas de la plataforma de Cisco Networking Academy, desarrollando un componente practico con la ayuda del software Packet Tracer.

Desarrollo e Implementación De Red Estructurada En Simulador Cisco Packet Tracer

Escenario: Una empresa de Tecnología posee tres sucursales distribuidas en las ciudades de Bogotá, Medellín y Bucaramanga, en donde el estudiante será el administrador de la red, el cual deberá configurar e interconectar entre sí cada uno de los dispositivos que forman parte del escenario, acorde con los lineamientos establecidos para el direccionamiento IP, protocolos de enrutamiento y demás aspectos que forman parte de la topología de red.

Topología de red



Nota: En los router R1 y R2 no se utiliza las interfaces F0/0, en cambio se utiliza G0/0 y el web server se configura con un equipo conectado a G0/1

1. Configurar el direccionamiento IP acorde con la topología de red para cada uno de los dispositivos que forman parte del escenario

^o Configuration	x
IP Configuration	
DHCP	Static
IP Address	209.165.200.230
Subnet Mask	255.255.255.248
Default Gateway	209.165.200.225
DNS Server	0.0.0.0
IPv6 Configuration	
	Auto Config 🔘 Static
IPv6 Address	
Link Local Address	FE80::20C:85FF:FE95:4C49
IPv6 Gateway	
IPv6 DNS Server	
IPv6 DNS Server	
IPv6 DNS Server	

Configuracion de Internet Pc

Configuracion de Router 1 – La G0/0 se configura mas adelante

Physical	Config CL	Attributes				
		IOS Co	mmand Line In	terface		
Router	<pre>#configure t</pre>	erminal				
Enter	configuratio	on commands,	one per 1	ine. Er	id with CNTI	s/Z.
Router	(config) #nos	stname R1				
R1 (con	rig) #no ip o	iomain-looki	1p			
R1 (con	fig) #enable	secret clas	39			
R1 (con	fig)#line co	m U				
R1 (con	fig-line)#pa	issword cise	20			
R1 (con	fig-line)#lo	ogin				
R1 (con	fig-line)#lo	gging synch	ironous			
R1 (con	fig-line) #ex	iit .				
R1 (con	rig) #line vt	2Y 0 4				
R1 (con	rig-line) #pa	issword cise	20			
R1 (con	fig-line)#lo)gin				
R1 (con	fig-line)#lo	gging synch	ironous			
RI (con	rig-line) ‡es					
R1 (con	rig) #service	password-e	encryption			
R1 (con	rig) #panner	mota #Proni	upido el ac	ceso No	autorizado	÷
R1 (con	rig) #interra	ice s0/0/0				
RI (con	rig-ir)‡desc	ription Con	inection to	, KZ		
RI (con	rig-ir)#ip a	laaress 1/2.	.31.21.1 25	5.255.25	5.252	
RI (con	11g-11)#C100	ik rate 1280	000			
RI (CON	rig-ir/#no s	shucdown				1
ST THE	E-CUANCED.	Totorfood C.		abanaaa		lour
B1/con	S-CHANGED: 1	mueriace be	eriar0/0/0,	changed	i state to c	IOWII .
RI (CON	119-11/#					
Ctrl+E6 to	evit CLI focus				Conv	Paste
	CAR GEL IOCUS				Copy	1 4340

Configuracion de Router 2

d	R2	X	<u>}</u>
	Physical Config CLI Attributes		
	IOS Command Line Interface		
	Press RETURN to get started!	*	
	Router>enable		
	Router#configure terminal		
	Enter configuration commands, one per line. End with CNTL/Z.		
	Router(config) #hostname R2		
	R2(config) #ip domain-lookup		
	R2(config) #enable secret class		
	R2(config) #line con 0		
	R2(config-line) #password cisco		
	R2(config-line)#loggin		
	% Incomplete command.		
	R2(config-line)#login		
	R2(config-line)#logging synchronous		
	R2(config-line) #exit		
	R2(config)#line vty 0 4		
	R2(config-line) #password cisco		
	R2 (config-line) #login		
	R2(config-line)#logging synchronous	Ξ	
	R2(config-line) #exit		
	Router>enable Router≠configure terminal Enter configuration commands, one per line. End with CNTL/Z. Router(config) #hostname R2 R2(config) #ip domain-lookup R2(config) #enable secret class R2(config) fenable secret class R2(config) filme con 0 R2(config) filme) #password cisco R2(config-line) #password cisco R2(config-line) #loggin %ynchronous R2(config-line) #loggin synchronous R2(config) filme vty 0 4 R2(config) filme vty 0 4 R2(config) filme) #password cisco R2(config) filme) #password-encryption R2(config) filme) #password-encryption R2(config) #panner motd #Prohibido el acceso no autorizado# R2(config) # v		
	R2(config) #banner motd #Prohibido el acceso no autorizado#	-	
	R2 (conrig) #		
	Ctrl+F6 to exit CLI focus Copy Paste		
	Пор		

R2		×	
IOS Command Line Interface			
<pre>R2>enable Password: R2#configure terminal Enter configuration commands, one per line. End with CNTL R2(config)#interface s0/0/1 R2(config-if)#description Connection to R1 R2(config-if)#ip address 172.31.21.2 255.255.255.252 R2(config-if)#n shutdown R2(config-if)# %LINK-5-CHANGED: Interface Serial0/0/1, changed state to u R2(config-if)# %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/ changed state to up R2(config-if)#interface s0/0/0 R2(config-if)#interface s0/0/0 R2(config-if)#interface s0/0/0 R2(config-if)#interface s172.31.23.1 255.255.255.252 R2(config-if)#ip address 172.31.23.1 255.255.255.252 R2(config-if)#ip shutdown %LINK-5-CHANGED: Interface Serial0/0/0, changed state to d R2(config-if)#</pre>	/Z. p 1,	4 m	
Ctrl+F6 to exit CLI focus Copy	Paste	•	
П Тор			

			IOS Comma	and Line Interf	ace				
R2 (cor	(fig-if) #in	nterface	g0/0						4
R2 (cor	(fig-if)#de	escriptio	on Connec	ction to I	nternet				
R2 (cor	(fig-if)#i	p address	209.165	5.200.225	255.255	.255.24	8		
R2 (cor	(fig-if) #no	o shutdov	m						
R2 (cor	(fig-if)#								
%LINK-	5-CHANGED	: Interfa	ce Gigab	DitEtherne	t0/0, c	hanged	state	to	
up									
ST. TNET		DOWN - T.i.r	e proto	col on Int	erface				
Gigabi	tEthernet	0/0. char	nged stat	te to up	errace				
			-	-					
R2 (cor	(fig-if) #i)	nterface	g0/1						
R2 (cor	(fig-if)#de	escriptio	on Connec	ction to W	ebServe	r			
R2 (cor	(fig-if)#i	p address	10.10.1	10.1 255.2	55.255.	0			
R2 (cor	(fig-if) #no	o shutdov	m						
R2 (cor	(fig-if)#								
%LINK-	5-CHANGED	: Interfa	ce Gigał	DitEtherne	t0/1, c	hanged	state	to	
up									
STATIST		DOWN - THE	e proto	ol on Int	erface				
Gigabi	tEthernet	0/1. char	ared stat	te to up	criace				E
229201		., .,							
D2 (007	fig=if\#								1
		-				Copy		Paste	
Ctrl+F6 ti	o exit CLI focu	s							

Configuracion de Servidor Web

P Configuration	x
IP Configuration	
O DHCP	Static
IP Address	10.10.10
Subnet Mask	255.255.255.0
Default Gateway	10.10.10.1
DNS Server	0.0.0.0
IPv6 Configuration	
O DHCP O A	uto Config 💿 Static
IPv6 Address	
Link Local Address	FE80::201:43FF:FEA2:1569
IPv6 Gateway	
IPv6 DNS Server	

Configuracion de Router 3

Physical Config CLI Attributes
IOS Command Line Interface
Kouter>enable
Router‡configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router (config) #hostname R3
R3(config) #ip domain-lookup
R3(config) #enable secret class
R3(config) #line con U
R3(config-line)#password cisco
R3(config-line)#login
R3(config-line)#logging synchronous
R3(config-line)#exit
R3(config) #line vty 0 4
R3(config-line)#password cisco
R3(config-line)#login
R3(config-line)#logging synchronous
R3(config-line) #exit
R3(config) #service password-encryption
R3(config) #banner motd #Prohibido el acceso no autorizado#
R3(config) #interface s0/0/1
R3(config-if)#description Connection to R2
R3(config=1f)#1p address 1/2.31.23.2 255.255.255.252
R3(conrig-ir)#no snutdown
RS(CONFIG-17)#
* SINK-S-CHANGED. Interface Serial0/0/1, changed state to up
Ctrl +E6 to avit CLI facus

R3	
Physical Config CLI Attributes	
IOS Command Line Interface	
R3(config-if)‡ R3(config-if)‡interface lo4	*
R3(config-if)‡ %LINK-5-CHANGED: Interface Loopback4, changed state to up	
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback4, changed state to up</pre>	
R3(config-if) #ip address 192.168.4.1 255.255.255.0 R3(config-if) #no shutdown R3(config-if) #interface lo5	
R3(config-if)# %LINK-5-CHANGED: Interface Loopback5, changed state to up	
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback5, changed state to up</pre>	
R3(config-if) #ip address 192.168.5.1 255.255.255.0 R3(config-if) #no shutdown R3(config-if) #interface lo6	E
R3(config-if)‡ %LINK-5-CHANGED: Interface Loopback6, changed state to up	Ŧ
Ctrl+F6 to exit CLI focus	Paste
Тор	

R3	- 0 X
Physical Config CLI Attributes	
IOS Command Line Interface	
\$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback5, changed state to up	^
R3(config-if)#ip address 192.168.5.1 255.255.255.0 R3(config-if)#no shutdown R3(config-if)#interface lo6	
R3(config-if)‡ \$LINK-5-CHANGED: Interface Loopback6, changed state to up	
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback6, changed state to up</pre>	
<pre>R3(config-if)#ip address 192.168.6.1 255.255.0 R3(config-if)#no shutdown R3(config-if)#exit R3(config)#ip route 0.0.0.0 0.0.0.0 s0/0/1 %Default route without gateway, if not a point-to-point interface, may impact performance R3(config)#ip route 0.0.0.0 0.0.0.0 s0/0/1 R3(config)#exit R3# %SYS-5-CONFIG_I: Configured from console by console</pre>	ш
R3#	-
Ctrl+F6 to exit CLI focus Copy	Paste
Пор	

Configuracion de Switch 1

			7100100000			
			IOS Com	mand Line Interfa	ce	
Switch	enable					
Switch	tconfigu	re ter	minal			
Enter	configur	ation	commands.	one per line	. End with CNTI	L/Z.
Switch	(config)	#hostn	ame S1			-,
S1 (con	fig) #ip	domain	-lookup			
S1 (con	fig)‡ena	ble se	cret class			
S1 (con	fig) #lin	e con	0			
S1 (con	fig-line)‡pass	word cisco			
S1 (con	fig-line)#logi	n			
S1 (con	Eig-line)#logg	ing synchr	onous		
S1 (con	Eig-line)‡exit				
S1 (con	fig)‡lin	e vty	04			
S1 (con	fig-line)‡pass	word cisco			
S1 (con	fig-line)#logi	n			
S1 (con	fig-line) #logg	ing synchr	onous		
S1 (con	tig-line) #exit				
SI(con	(1g) şser	vice p	assword-en	cryption		
S1 (con	Eig) #ban Fig) #ovi	tier mo	ca +PIONID	Ido el acces	o no autorizado;	*
S1#	LIG/ + ENI					=
SYS-5	-CONFIG	I: Con	figured fr	om console b	v console	
	-					
S1#						-
Ctrl+F6 to	exit CLI fo	cus			Сору	Paste

Configuracion de Switch 3

IOS Command Line Interface
105 Command Line Intel face
A
Switch>enable
Switchtconfigure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config) #hostname S3
S3(config) #ip domain-lookup
S3(config) #enable secret class
S3(config) #line con 0
S3(config-line) #password cisco
S3(config-line)#login
S3(config-line)#logging synchronous
S3(config-line) #exit
S3(config)#line vty 0 4
S3(config-line)#password cisco
S3(config-line)#login
S3(config-line)#logging synchronous
S2 (config) facture password-operation
S3(config) thenner moth tBrobibido el ecceso no eutorizadot
S3 (config) #exit
S3# E
%SYS-5-CONFIG I: Configured from console by console
S3#
Ctrl+E6 to evit CLI focus Conv Paste

Verificar la conectividad – ping entre los router y servidores

۲	R1 🗆 🗖 🗮 🗶
	Physical Config CLI Attributes
	IOS Command Line Interface
	User Access Verification
	Password:
	R1>enable
	Password:
	R1#ping 172.31.21.2
	Type escape sequence to abort.
	seconds:
	11111
	Success rate is 100 percent (5/5), round-trip min/avg/max =
	1/13/62 ms
	R1#ping 172.31.23.1
	Type escape sequence to abort.
	Sending 5, 100-byte ICMP Echos to 172.31.23.1, timeout is 2
	seconds:
	Success rate is 100 percent (5/5), round-trip min/avg/max =
	1/3/15 ms
	R1#
	Ctrl+F6 to exit CLI focus Copy Paste
	Пор

🥐 R2	
Physical Config CLI Attributes	
IOS Command Line Interface	
User Access Verification	*
Password:	
R2>enable Password: R2‡ping 172.31.23.2	
Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 172.31.23.2, timeout seconds: !!!!! Success rate is 100 percent (5/5), round-trip min/avg/ ms	is 2 max = 1/1/3
R2#ping 172.31.21.1 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 172.31.21.1, timeout seconds: 1!!!! Success rate is 100 percent (5/5), round-trip min/avg/: ms R2#	is 2 max = 1/1/3
Ctrl+F6 to exit CLI focus Copy	Paste
Пор	





2. Configurar el protocolo de enrutamiento OSPFv2 bajo los siguientes criterios:

OSPFv2 área 0

Configuration Item or Task	Specification
Router ID R1	1.1.1.1
Router ID R2	2.2.2.2
Router ID R3	3.3.3.3
Configurar todas las interfaces LAN como pasivas	
Establecer el ancho de banda para enlaces seriales en	128 Kb/s
Ajustar el costo en la métrica de s0/0 a	7500

	IOS Command Line Interface
	R1>enable
	Password:
E	R1#configure terminal
	Sinter configuration commands, one per line. End with CNTL/Z.
P	R1(config-router)#router-id 1.1.1.1
P	R1(config-router)#network 172.31.21.0 0.0.0.3 area 0
P	R1(config-router)#network 192.168.30.0 0.0.0.255 area 0
P	R1(config-router)#network 192.168.99.0 0.0.0.255 area 0
P	R1(config-router)#
R	R1(config=router) #passive=interface g0/0.30
P	R1(config-router) #passive-interface g0/0.200
P	R1(config-router) #exit
B	R1(config-if)#bandwidth 128
P	R1(config-if) #ip ospf cost 7500
P	R1(config-if) #exit
B	R1#
8	SYS-5-CONFIG_I: Configured from console by console
P	R1#
	rd LEC to avit CLI focus
Т	op
2	
	a a a the line I thread I thread the thread thread
h	ysical Config CLI Attributes
	IOS Command Line Interface
P	Password:
R	2>enable
R	22#configure terminal
E	Inter configuration commands, one per line. End with CNTL/Z.
R	22 (config) #route ospf 1
R	22 (config-router) #network 172.31.23.0 0.0.0.3 area 0
R	22(config-router)#network 172.31.21.0 0.0.0.3 area 0
R	<pre>X2 (config-router) #network 10.10.10.0 0.0.0.255 area 0 X2 (config-router) #neggive-interface g0/1</pre>
R	<pre>(config=router)#</pre>
R	A2(config-router) #interface s0/0/0
R	22 (config-if) #bandwidth 128
R	<pre>22(conrig=ir)#ip Ospr Cost 7500 22(config=if)#interface s0/0/1</pre>
R	22 (config-if) #bandwidth 128
R	22 (config-if) #exit
R	<pre>X2 (CONLIG) + EXIT X2 #</pre>
8	SYS-5-CONFIG_I: Configured from console by console
P	12#
Ju	n+ro to exit CLI rocus Copy Paste

Physical	Config	CLI	Attributes					
			IOS Co	mmand Line Interfa	ice			
R3>en	able						*	
Passw	ord:							
R3‡co	nfigure t	ermina	1					
Enter	configur	ation	commands,	one per line	. End w:	ith CNTL	/Z.	
R3 (co	nfig)#							L
R3 (co	nfig)‡rou	ter os	spf 1					
R3 (co	nfig-rout	er)‡ro	outer-id 3	.3.3.3				
R3 (co	nfig-rout	er)‡ne	etwork 172	.31.23.0 0.0.	0.3 area	0		
R3 (co	nfig-rout	er)‡						
01:47	:45: %OSP	F-S-AI	JCHG: Pro	cess 1, Nbr 2	.2.2.2 01	n Serial	0/0/1	L
from	LOADING t	o FULI	., Loading	Done				
R3 (co	nfig-rout	er)‡ne	twork 192	.168.4.0 0.0.	3.255 are	ea O		
R3 (co	nfig-rout	er)‡pa	assive-int	erface lo4				
R3 (co	nfig-rout	er)‡pa	assive-int	erface lo5				
R3 (co	nfig-rout	er)‡pa	assive-int	erface lo6				
R3 (co	nfig-rout	er)‡e>	it					
R3 (co	nfig) #int	erface	e s0/0/1					
R3 (co	nfig-if)#	bandwi	dth 128					
R3 (co	nfig-if)‡	exit						L
R3 (co	nfig)‡exi	t						L
R3#		_					E	L
*SYS-	5-CONFIG_	I: Cor	figured f	rom console b	y console	2		
R3#							-	
Ctrl+F6	to exit CLI foo	tus			(Сору	Paste	

Verificar información de OSPF

- Visualizar tablas de enrutamiento y routers conectados por OSPFv2
- Visualizar lista resumida de interfaces por OSPF en donde se ilustre el costo de cada interface
- Visualizar el OSPF Process ID, Router ID, Address summarizations, Routing Networks, and passive interfaces configuradas en cada router.

			IOS	Command Line Interf	ace		
							-
01:47:45: %05	PF-5-AD	JCHG: Pr	ocess	1. Nbr 3.3.3.3	on Serial0/0/0	from LOADING to	
FULL, Loading	Done						
Prohibido el	acceso 1	no autor	lzado				
User Access V	erifica	tion					
Password:							
R2>enable							
Password:							
R2#show ip os	pf neig	hbor					
Neighbor ID	Pri	State		Dead Time	Address	Interface	
3.3.3.3	0	FULL/	-	00:00:36	172.31.23.2	Serial0/0/0	
1.1.1.1 D2#	0	FORD/	-	00:00:39	1/2.31.21.1	Serial0/0/1	-
R2#							-
						-	_
Child FC has anoth CLT F	DCUS					Copy Paste	e

	ing	Herbures				
			IOS Command Line Interf	ace		
R2# R2#show ip	ospf inte	erface				^
Serial0/0/ Internet Process Transmit No desig	1 is up, 1 address i ID 1, Rout Delay is nated rout	line protoco is 172.31.21 er ID 2.2.2 1 sec, Stat er on this	ol is up 2/30, Area 0 2, Network Type ce POINT-TO-POINT, network	POINT-TO-POINT, Priority 0	Cost: 781	
No backu Timer in Hello Index 1/ Next 0x0	p designat tervals co due in 00: 1, flood c (0)/0x0(0)	ted router of onfigured, H 100:01 queue length	n this network Wello 10, Dead 40, 1 0	Wait 40, Retran	smit 5	
Last flo Last flo Neighbor Adjace Suppress	od scan le od scan t: Count is nt with ne hello for	ength is 1, ime is 0 mse 1 , Adjacen eighbor 1.1. 5 0 neighbor	<pre>maximum is 1 c, maximum is 0 m it neighbor count 1.1 c(s)</pre>	sec is 1		
Serial0/0/ Internet Process Transmit No desig	0 is up, 3 address 3 ID 1, Rout Delay is nated rout	line protoco is 172.31.23 cer ID 2.2.2 1 sec, Stat cer on this	<pre>3.1/30, Area 0 3.1/30, Area 0 4.2, Network Type se POINT-TO-POINT, network</pre>	POINT-TO-POINT, Priority 0	Cost: 7500	
No backu More	p designat	ed router o	on this network			-
Ctrl+F6 to exit	CLI focus				Сору	Paste

		IOS Command Line Interface	
Routing for	Networks:		
172.31.21	.0 0.0.0.3 area 0		
172.31.23	.0 0.0.0.3 area 0		
10.10.10.	0 0.0.0.255 area 0	1	
Passive Int	eriace(s):		
GigabitEt	nernetU/1		
Routing ini	Distances:	I and Unders	
Gateway	Distance	Last opdate	
2 2 2 2 2	110	00-11-26	
3 3 3 3	110	00-09-55	
Distance: /	default is 110)	00.00.00	
K2#snow ip ro			
<pre>R2#snow 1p FC 192.168. 0 192.1 192.168. 0 192.1 192.168. 0 192.1 0 192.168. 0 192.168. 0 192.168.</pre>	4.0/32 is subnette 68.4.1 [110/7501] 5.0/32 is subnette 68.5.1 [110/7501] 6.0/32 is subnette 68.6.1 [110/7501] 30.0 [110/782] via 99.0 [110/782] via	<pre>id, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 d, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 d, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/1 i 172.31.21.1, 00:28:19, Serial0/0/1 i 172.31.21.1, 00:28:19, Serial0/0/1 i 172.31.21.1, 00:28:19, Serial0/0/1</pre>	=
<pre>R2#SHOW 10 FC 192.168. 0 192.1 192.168. 0 192.1 192.168. 0 192.168. 0 192.168. 0 192.168.</pre>	4.0/22 is subnette 68.4.1 [110/7501] 5.0/32 is subnette 68.5.1 [110/7501] 6.0/32 is subnette 68.6.1 [110/7501] 30.0 [110/782] via 40.0 [110/782] via 99.0 [110/782] via	<pre>id, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 id, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 id, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 i 172.31.21.1, 00:28:19, Serial0/0/1 i 172.31.21.1, 00:28:19, Serial0/0/1 i 172.31.21.1, 00:28:19, Serial0/0/1</pre>	=
R2#BAGW 10 FC 192.168. 0 192.1 192.168. 0 192.1 192.168. 0 192.1 0 192.168. 0 192.168. 0 192.168. 0 192.168. 0 192.168. 0 192.168. 0 192.168. R2# R2#	4.0/22 is subnette 68.4.1 [110/7501] 5.0/32 is subnette 68.5.1 [110/7501] 6.0/32 is subnette 68.6.1 [110/7501] 30.0 [110/782] via 40.0 [110/782] via 99.0 [110/782] via	<pre>id, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 id, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 id, 1 subnets via 172.31.23.2, 00:15:47, Serial0/0/0 172.31.21.1, 00:28:19, Serial0/0/1 172.31.21.1, 00:28:19, Serial0/0/1</pre>	E

		IOS Command Line Interface	
Neighbor Count	is 0, Adjacent	neighbor count is 0	*
Suppress hello	for 0 neighbor	:(s)	
R2#			
RZ#SNOW 1p proto	COIS		
Routing Protocol	ie "cenf 1"		
Outgoing updat	e filter list f	or all interfaces is not set	
Incoming updat	e filter list f	or all interfaces is not set	
Router ID 2.2.	2.2		
Number of area	s in this route	r is 1. 1 normal 0 stub 0 nssa	
Maximum path:	4		
Routing for Ne	tworks:		
172.31.21.0	0.0.0.3 area 0		
172.31.23.0	0.0.0.3 area 0		
10.10.10.0 0	.0.0.255 area 0		
Passive Interf	ace(s):		
GigabitEther	net0/1		
Routing Inform	Ation Sources:	Tere Underer	
Gateway	Distance	Dasc opdate	
2 2 2 2 2	110	00:11:36	
3.3.3.3	110	00:09:55	
Distance: (def	ault is 110)		=
R2#			*
			Deete

		IOS Command Line Interface	
R1#show ip protoc	cols		
Routing Protocol	is "ospf 1"		
Outgoing update	filter list f	or all interfaces is no	t set
Incoming update	filter list f	or all interfaces is no	t set
Router ID 1.1.1			
Number of areas	in this route	r is 1. 1 normal 0 stub	U nssa
Maximum path: 4	i morket		
172 21 21 0 (WOIRS.		
192 168 30 0	0 0 0 255 area	0	
192.168.40.0	0.0.0.255 area	0	
192.168.99.0	0.0.0.255 area	0	
Passive Interfa	ice(s):		
GigabitEthern	iet0/0.30		
GigabitEthern	1et0/0.40		
GigabitEthern	iet0/0.200		
Routing Informa	tion Sources:		
Gateway	Distance	Last Update	
1.1.1.1	110	00:02:15	
2.2.2.2	110	00-11-41	ſ
Distance: (def:	ult is 110)	00.11.41	
More			
Ctrl+E6 to exit CLI focus			Copy Paste
			cop) . core

		IOS Command Line Interface		
R3>enable				*
R3#show ip proto	cols			
Routing Protocol	is "ospf 1"			
Outgoing updat	e filter list f	or all interfaces is n	ot set	
Incoming updat	e filter list f	or all interfaces is n	ot set	
Router ID 3.3.	3.3			
Number of area	s in this route	r is 1. 1 normal 0 stu	b O nssa	
Maximum path:	4			
Routing for Ne	tworks:			
192 169 4 0	0.0.2 255 area 0	0		
Deceive Interf	ace(s):	0		
Loopback4	444(2).			
Loopback5				
Loopback6				
Routing Inform	ation Sources:			
Gateway	Distance	Last Update		
1.1.1.1	110	00:03:48		
2.2.2.2	110	00:14:54		
3.3.3.3	110	00:13:13		
Distance: (def	ault is 110)			=
R3#				-
Ctrl+F6 to exit CLI focus			Сору	Paste

 Configurar VLANs, Puertos troncales, puertos de acceso, encapsulamiento, Inter-VLAN Routing y Seguridad en los Switches acorde a la topología de red establecida.

Después de terminar la configuración de las VLANs, no pasaba las pruebas con el comando ping, se verifica y se identifica que se debe cambiar el direccionamiento de la VLAN 200, ya que la dirección que da la topología no corresponde con el direccionamiento de los switch. Al realizar el cambio y corregir esto se realizan las pruebas de comunicación con el comando ping sin contratiempos, en los pantallazos al final se puede ver claramente. Las gráficas resaltadas en rojo indican las correcciones y cambios que se realizan para que funcionen las VLAN.

VLAN 200 – 192.168.200.0/24 es remplazada por 192.168.99.0/24

	• ×
Physical Config CLI Attributes	
IOS Command Line Interface	
105 Commond Line Interface	
<pre>Sit Sit Sitconfigure terminal Enter configuration commands, one per line. End with CNTL/Z. Si(config-vlan)#name Administracion Si(config-vlan)#name Martenia Si(config-vlan)#name Martenimiento Si(config-vlan)#ame Martenimiento Si(config-vlan)#ame Martenimiento Si(config-vlan)#exit Si(config-vlan)#exit Si(config-fi)#ipterface vlan 200 Si(config-fi)#ipterface vlan 200 Si(config-fi)#ipterface vlan 200, changed state to up Si(config-fi)#bitterface vlan 200, changed state to up Si(config-fi)#outdown Si(config-fi)#outdown Si(config-fi)#exit Si(config-fi)#outdown Si(config-fi]#outdown Si(config-fi]#outdown Si(config-fi]#outdown Si(config-fi]#outdown Si(config-fi]#outdown Si(config-fi]#outdown Si(config-fi]#outdown Si(co</pre>	
% Invalid input detected at '^' marker. S1(config) #ip default-gateway 192.168.99.1	E
S1(config) #	*
Тор	
S1	= <mark>×</mark>
S1 CII Attributes	
S1 Config CLI Attributes	
S1 Config CLI Attributes IOS Command Line Interface	
S1 Config CLI Attributes IOS Command Line Interface S1 (config) #interface f0/3 S1 (config) #interface f0/3 S1 (config-if) #switchport mode trunk	
S1 Physical Config CLI Attributes IOS Command Line Interface S1 (config) #ip default-gateway 192.168.99.1 S1 (config) #interface f0/3 S1 (config-if) #switchport mode trunk S1 (config-if) # \$1 (config-if)	
S1 Config CLI Attributes IOS Command Line Interface S1 (config) #ip default-gateway 192.168.99.1 S1 (config) #interface f0/3 S1 (config) #interface f0/3 S1 (config-if) # witchport mode trunk S1 (config-if) #	
S1 Config CLI Attributes IOS Command Line Interface S1 (config) #ip default-gateway 192.168.99.1 S1 (config) #ipterface f0/3 S1 (config-if) #switchport mode trunk S1 (co	
S1 Config CLI Attributes IOS Command Line Interface S1 (config) #ip default-gateway 192.168.99.1 S1 (config) #interface f0/3 S1 (config) #interface f0/3 S1 (config-if) # witchport mode trunk S1 (config-if) # *LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to down *LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up *LINEPROTO-5-UPDOWN: Line protocol on Interface Vian200, changed state to up S1 (config-if) # witchport trunk native vian 1 S1 (config-if) # witchport trunk native vian 1 S1 (config-if) # witchport trunk native vian 1 S1 (config-if) # witchport mode trunk S1 (config-if) # witchport mode access S1 (config-if) # witchport mode #	

📃 Тор

1	Physical Config CLI Attributes
	IOS Command Line Interface
	<pre>\$LINK-5-CHANGED: Interface FastEthernet0/18, changed state to administratively down</pre>
	<pre>\$LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down</pre>
	%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down
	<pre>\$LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down</pre>
	\$LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down
	%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down
	%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to administratively down
	<pre>\$LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to administratively down S1(config-if-range)\$exit S1(config)\$ </pre>
	Ctrl+F6 to exit CLI focus Copy Paste

Corrección realizada a la vlan 200

Physical Config CLI Attributes IOS Command Line Interface password 7 0822455D0A16 loggin gynchronous login line vty 5 15 login 1 ! end S1# S1# S1fconfigure terminal Enter configuration commands, one per line. End with CNTL/Z. S1(config) finterface vlan 200 S1(config-if) #ip address 192.168.99.2 255.255.255.0 S1(config-if) #ip address 192.168.99.2 255.255.255.0 S1(config) exit S1# S1(config) filt = configured from console by console E s1# Ctrl+F6 to exit CLI focus	VP S1
IOS Command Line Interface password 7 0822455D0A16 login login line vty 5 15 login ! end S1# S1 S1 (config) = finterface vlan 200 S1 (confi	Physical Config CLI Attributes
<pre>password 7 0822455D0A16 logging synchronous login line vty 5 15 login ! ! end S1# S1# S1# S1# S1#configure terminal Enter configuration commands, one per line. End with CNTL/Z. S1(config) finterface vlan 200 S1(config) finterface vlan 200 S1(config)-if) #ip address 192.168.99.2 255.255.255.0 S1(config-if) #ip address 192.168.99.2 255.255.255.0 S1(config-if) #ip address 192.168.99.2 255.255.255.0 S1(config-if) #exit S1(config) fexit S1(config) fexit S1# Ctrl+F6 to exit CLI focus Copy Paste</pre>	IOS Command Line Interface
	password 7 0822455D0A16 login line vty 5 15 login ! ! end S1# S1(configure terminal Enter configurentiace vlan 200 S1(config-if)#interface vlan 200 S1(config-if)#interface vlan 200 S1(config-if)#o shudown S1(config-if)#exit S1(config)#exit S1# VSTS-5-CONFIG_I: Configured from console by console E S1# Ctrl+F6 to exit CLI focus Copy Paste
Пор	🗖 Тор

	-							
			IOS Con	nmand Line Inte	erface			
2 II	ivalid inp	ut dete	eced at	marker.				*
S3 (d	config) #vl	an 30						
S3 (d	config-vla	n)‡name	Administ	cador				
S3 (d	config-vla	n) #vlan	40					
S3 (d	config-vla	n)‡name	Mercadeo					
S3 (d	config-vla	n) #vlan	200					
S3 (o	config-vla	n) #Mant	enimiento					
а т.	malid inn	ut data	ated at 1	marker				
3 11	ivaria inp	as dete	coeu ao	marker.				
S3 (d	config-vla	n) ‡name	Mantenimi	lento				
S3 (d	config-vla	n) #exit						
S3 (d	config) #in	terface	vlan 200					
S3 (d	config-if)	ŧ						
\$LIN	NK-5-CHANG	ED: Int	erface Vla	an200, char	nged stat	e to up		
SLIN	NEPROTO-5-	UPDOWN :	Line prot	cocol on Ir	terface '	Vlan200	changed	
stat	te to up					,	2	
	-							
S3 (d	config-if)	#ip add	lress 192.1	168.99.3 25	5.255.25	5.0		
S3 (d	config-if)	‡no shu	tdown					
53 (0	config-if)	#exit						Ξ
23(0	conrig) #1p	defaul	t-gateway	195.108.92	9.1			
23 (0	courig) #							Ŧ
TH+E	6 to exit CLT f	ocus				Conv	Paste	
							, usic	

🖉 S3
Physical Config CLI Attributes
IOS Command Line Interface
<pre>% Invalid input detected at '^' marker.</pre>
S3(config-vlan)‡name Mantenimiento S3(config-vlan)‡exit S3(config)‡interface vlan 200 S3(config-if)‡ \$LINK-5-CHANGED: Interface Vlan200, changed state to up
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan200, changed state to up</pre>
<pre>S3(config-if)#ip address 192.168.99.3 255.255.255.0 S3(config-if)#no shutdown S3(config-if)#exit S3(config)ip default-gateway 192.168.99.1 S3(config)# S3(config)#interface fa0/3 S3(config-if)#switchport mode trunk S3(config-if)#switchport mode access S3(config-if)#interface fa0/1 S3(config-if)#switchport mode access S3(config-if)#switchp</pre>
Ctrl+F6 to exit CLI focus Copy Paste
Пор

Physical Config CLI	Attribut	tes			
	IOS	Command Line	Interface		
<pre>%LINK-5-CHANGED: In administratively do</pre>	nterface own	FastEthern	uet0/19, d	changed sta	te to
<pre>%LINK-5-CHANGED: In administratively do</pre>	nterface own	FastEthern	uet0/20, d	changed sta	te to
%LINK-5-CHANGED: In administratively do	nterface own	FastEthern	uet0/21, d	changed sta	te to
%LINK-5-CHANGED: In administratively do	nterface own	FastEthern	uet0/22, d	changed sta	te to
%LINK-5-CHANGED: In administratively do	nterface own	FastEthern	uet0/23, d	changed sta	te to
<pre>%LINK-5-CHANGED: In administratively do</pre>	nterface own	FastEthern	uet0/24, d	changed sta	te to
%LINK-5-CHANGED: In administratively do	nterface own	GigabitEth	ernet0/1,	changed s	tate to
<pre>%LINK-5-CHANGED: In administratively do S3(config-if-range)</pre>	nterface own) #	GigabitEth	ernet0/2,	changed s	tate to
Ctrl+F6 to exit CLI focus				Сору	Pas

🤻 R1 🗖 🗖 📈	
Physical Config CLI Attributes	
IOS Command Line Interface	
Prohibido el acceso No autorizado	
User Access Verification	
Password:	
R1>enable Password: R1 < configure terminal Enter configuration commands, one per line. End with CNTL/Z. R1 (config) #interface g0/0.30 R1 (config-subif) #description LAN Administracion R1 (config-subif) #description LAN Administracion R1 (config-subif) #description LAN Administracion R1 (config-subif) #interface g0/0.40 R1 (config-subif) #interface g0/0.40 R1 (config-subif) #description LAN Mercadeo R1 (config-subif) #description LAN Mercadeo R1 (config-subif) #interface g0/0.200 R1 (config-subif) #interface g0/0.200 R1 (config-subif) #description LAN Mantenimiento R1 (config-subif) #description LAN Mantenimiento R1 (config-subif) #description LAN Mantenimiento R1 (config-subif) #interface g0/0.200 R1 (config-subif) #interface g0	
R1(config-subif)#interface g0/0 R1(config-if)#no shutdown	
Ctrl+F6 to exit CLI focus Copy Paste	
Тор	

R1 X
Physical Config CLI Attributes
IOS Command Line Interface
<pre>\$LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up</pre>
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up</pre>
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/0.30, changed state to up</pre>
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.30, changed state to up</pre>
<pre>\$LINK-5-CHANGED: Interface GigabitEthernet0/0.40, changed state to up</pre>
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.40, changed state to up</pre>
\$LINK-5-CHANGED: Interface GigabitEthernet0/0.200, changed state to up
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0.200, changed state to up</pre>
R1(config-if)‡
Ctrl+F6 to exit CLI focus Copy Paste
Птор

Corrección realizada a la vlan 200

		1	Attributes				
			IOS Co	mmand Line Inte	rface		
%LINEP change	ROTO-5-U d state	to up	Line pro	tocol on In	terface	Serial0/0/	o, ^
Prohib	ido el a	acceso	No autori	zado			
User A	ccess Ve	rifica	ation				
Passwo	rd:						
R1≻ena Passwo R1‡con	ble rd: figure t	ermina	al acompanda	one nor li		with CNTI	17
R1 (con %LINEP change	fig)‡int ROTO-5-U d state	erface JPDOWN: to dow	commands, g : Line pro n	tocol on In	terface	Serial0/0/	0,
%LINEP change	ROTO-5-U d state	JPDOWN: to up	: Line pro	tocol on In	terface	Serial0/0/	0,
R1 (con R1 (con R1 (con R1 (con	fig)#int fig-subi fig-subi fig)#	erface (f) #ip (f) #exi	e g0/0.200 address 1 it) .92.168.99.1	255.255	.255.0	E
Ctrl+F6 to	exit CLI fo	cus				Сору	Paste

S1				- 0 X
Physical Cont	ig CLI Attribut	es		
	IOS	Command Line Interface		
Sending 5, seconds: !!!! Success rat ms	100-byte ICMP Ec e is 100 percent	hos to 192.168.40	.1, timeout is p min/avg/max =	2 = 0/0/2
S1#ping 192	.168.99.1			
Type escape Sending 5, seconds: !!!!! Success rat	sequence to abo 100-byte ICMP Ec e is 100 percent	ort. thos to 192.168.99 : (5/5), round-tri	.1, timeout is p min/avg/max =	2
ms S1#ping 192	.168.30.1			
Type escape Sending 5, seconds: !!!!!	sequence to abo 100-byte ICMP Ec	ert. Phos to 192.168.30	.1, timeout is	2
Success rat ms	e is 100 percent	: (5/5), round-tri	p min/avg/max =	= 0/0/2
S1#				*
Ctrl+F6 to exit C	.I focus		Сору	Paste
🗖 Тор				

S3
Physical Config CLI Attributes
IOS Command Line Interface
Sending 5, 100-byte ICMP Echos to 192.168.30.1, timeout is 2 seconds: 11111 Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/1 ms
S3#ping 192.168.99.1
Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 192.168.99.1, timeout is 2 seconds: !!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 0/3/12 ms
S3#ping 192.168.40.1
Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 192.168.40.1, timeout is 2 seconds: 1!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 0/1/4 ms
\$3#
Ctrl+F6 to exit CLI focus Copy Paste
Птор

4. En el Switch 3 deshabilitar DNS lookup

Ya se encuentra deshabilitado. Se deshabilita en la configuración del primer punto

(¥ S3	Х
Physical Config CLI Attributes	
IOS Command Line Interface	
<pre>Switch>enable Switch>enable Switch=configure terminal Enter configuration commands, one per line. End with CNTL/Z. Deficiently finosement S0 S3 (config) # in con 0 S3 (config) # in con 0 S3 (config-line) # password cisco S3 (config-line) # logging synchronous S3 (config-line) # exit S3 (config-line) # password cisco S3 (config-line) # pas</pre>	*
S3(config)#banner motd #Prohibido el acceso no autorizado# S3(config)#exit S3# \$SYS-5-CONFIG_I: Configured from console by console	E
S3# Ctrl+F6 to exit CLI focus Copy Paste	-
Пор	

5. Asignar direcciones IP a los Switches acorde a los lineamientos.

Parámetros ya configurados en los puntos 1 y 3

6. Desactivar todas las interfaces que no sean utilizadas en el esquema de red.

vysical Config CLI Attributes	Physical Config CLI Attributes
IOS Command Line Interface	IOS Command Line Interface
LINK-5-CHANGED: Interface FastEthernet0/18, changed state to	SITNE-5-CHINCED. Interface FastEthernet0/19 changed state to
dulinistietively down	administratively down
%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to	
administratively down	%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to
TINK - CUNNERD, Interfore FactFactore (/20 shared state to	administratively down
administratively down	&I INF_C_CUNNER: Interface FastEthernet(/21 changed state to
	administratively down
LINK-5-CHANGED: Interface FastEthernet0/21, changed state to	
administratively down	%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to
%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to	administratively down
administratively down	AT THE C CURRENT THERE FOR THE PARTY (20 showed show to
	administratively down
LINK-5-CHANGED: Interface FastEthernet0/23, changed state to	addititistrativery down
administratively down	%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to
LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to	administratively down
administratively down	
TIME CONNERS THERE CONNERS CONNERS	%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to
administratively down	administrativery down
S1(config-if-range) #exit	%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to
S1(config)#	administratively down
trl +E6 to avit CI I focus	S3(config-if-range)#

Parámetros ya configurados en el punto 3

- 7. Implement DHCP and NAT for IPv4
 - Configurar R1 como servidor DHCP para las VLANs 30 y 40.
 - Reservar las primeras 30 direcciones IP de las VLAN 30 y 40 para configuraciones estáticas.



	Name: ADMINISTRACION		
Configurer DHCD pool pero VI AN 20	DNS-Server: 10.10.10.11		
Conligural DHCP pool para VLAN 30	Domain-Name: ccna-unad.com		
	Establecer defaul gateway		
	Name: MERCADEO		
Configurer DHCD pool para VI AN 40	DNS-Server: 10.10.10.11		
Configural DHCF pool para VLAN 40	Domain-Name: ccna-unad.com		
	Establecer defaul gateway		

	1	IOS Command Line Inte	rface		
R1>enable					
Password:	orminal				
Enter configur	ation commands	s, one per line.	End with Cl	NTL/Z	
R1(config) #ip	dhcp excluded-	-address 192.168	.30.1 192.168	8.30.30	
R1(config) #ip	dhcp excluded-	-address 192.168	.40.1 192.168	8.40.30	
P1(config)#					
R1(config) #ip	dhep pool ADMI	INISTRACION			
R1(dhep-config)#dns-server 1	10.10.10.11			
R1 (dhep-config) #defaul-route	≥r 192.168.30.1			
& Truchid innu	t detected at	101 marker			
* Invalid inpu	t detected at	marker.			
R1(dhcp-config)#default-rout	cer 192.168.30.1			
R1(dhcp-config)#network 192.	.168.30.0 255.25	5.255.0		
R1(dhcp-config)#ip dhep pool	L MERCADEO			
D1 (dhan-annfia)#dns-server 1	10.10.10.11			
ki (dnep-contig	\#default=rout	cer 192.168.40.1			
R1(dhep-config R1(dhep-config	/+ueraurc-rout				
R1 (dhep-config R1 (dhep-config R1 (dhep-config)#network 192.	.168.40.0 255.25	5.255.0		
R1 (dhep-config R1 (dhep-config R1 (dhep-config R1 (dhep-config)#network 192.)#exit	.168.40.0 255.25	5.255.0		
R1 (dhep-config R1 (dhep-config R1 (dhep-config R1 (dhep-config R1 (dhep-config)#network 192.)#exit	.168.40.0 255.25	5.255.0		
R1(dhcp-config R1(dhcp-config R1(dhcp-config R1(dhcp-config R1#) #network 192.) #exit	.168.40.0 255.25	5.255.0		E
R1(dhcp-config R1(dhcp-config R1(dhcp-config R1(dhcp-config R1(dhcp-config R1# %SYS-5-CONFIG_)#network 192.)#exit L: Configured	from console by	console		=

8. Configurar NAT en R2 para permitir que los host puedan salir a internet









9. Configurar al menos dos listas de acceso de tipo estándar a su criterio en para restringir o permitir tráfico desde R1 o R3 hacia R2.

Physical	Config CLI	Attributes					
		IC	OS Command Line Inte	erface			
							*
Prohib	ido el acceso	no autoriza	do				
User A	ccess Verifica	tion					
Passwo	rd:						
R2>ena	ble						
Passwo	rd:						
R2‡con	figure termina	1					
Enter	configuration	commands, o	ne per line. E	nd with CN	TL/Z.		
R2 (con	fig)‡ip access	-list stand	ard MANTENIMIEN	то			
R2 (con	fig-std-nacl)	permit host	172.31.21.1				
R2 (con	fig-std-nacl)	permit host	172.31.23.2				
R2 (con	fig-std-nacl) #	exit					
R2 (con	fig-lips)#2000	U 4	NTENTMIENTO SE				
P2 (con	fig=line)#acce	SS-CIASS PA	NIEWINIEWIO IN				
R2 (con	fig) texit						
R2#							
SYS-5	-CONFIG_I: Cor	figured fro	m console by co	nsole			E
R2#							*
Ctrl+F6 to	exit CLI focus				Сору	Paste	
Тор							

10. Configurar al menos dos listas de acceso de tipo extendido o nombradas a su criterio en para restringir o permitir tráfico desde R1 o R3 hacia R2.

R2			×
Physical Config CLI Attributes			
IOS Command Line Interface			
User Access Verification			
Password:			
R2>enable			
Password:			
R2#configure terminal			
Enter configuration commands, one per line. End with CNTI	/Z.		
R2(config) #			
R2(config) #access-list 101 permit tcp any host 209.165.200	.229 eq www	7	
R2(config) #access-list 101 permit icmp any any echo-reply			
R2(config) #interface g0/0			
R2(config-if) #ip access-group 101 in			
R2(config-if) #interface g0/1			
R2(config-if) #ip access-group 101 out			
R2(config-if)#interface s0/0/0			
R2(config-if) #ip access-group 101 out			
R2(config-if) #interface s0/0/1			
R2 (config-1f) #1p access-group 101 out			
R2 (config=1f) #exit			
R2 (CONLIG) #EXIC			
\$SYS-5-CONFIG I: Configured from console by console			=
sold o contro_1. configured from console by console			
R2#			-
			_
Ctrl+F6 to exit CLI focus	Сору	Paste	
-			
T			
IOP			

11. Verificar procesos de comunicación y redireccionamiento de tráfico en los routers mediante el uso de Ping y Traceroute.

R2	
Physical Config CLI Attributes	
IOS Command Line Interfa	ce
	A
Prohibido el acceso no autorizado	
User Access Verification	
Password:	
R2>enable	
Password:	
R2#show access-list	
Standard IP access list 1	
10 permit 192.168.30.0 0.0.0.255	
20 permit 192.168.40.0 0.0.0.255	
30 permit 192.168.4.0 0.0.3.255	
Standard IP access list MANTENIMIENTO	
10 permit host 172.31.21.1 (4 match(es))	
20 permit host 172.31.23.2 (2 match(es))	
Extended IP access list 101	
10 permit tcp any host 209.165.200.229 eq	www
20 permit icmp any any echo-reply (32 mate	ch(es)) =
R2#	~
Ctrl+F6 to exit CLI focus	Copy Paste
Пор	

Listas de acceso estándar donde se puede conectar por medio de telnet a R2 desde R1 y R3, pero desde los host no es permitido

🥐 R1		• X	2
Physical Config CLI Attributes			_
IOS Command Line Interface			
R1#			
R1#telnet 172.31.21.2			
Trying 172.31.21.2 OpenProhibido el acceso no autoriz	ado		
Heer Access Verification			
ober Access Verricebron			
Password:			
R2>enable			
Password:			
R2#			
R2#exit			
[Connection to 1/2.31.21.2 closed by foreign nost]			
RIT DIA		=	
R1+ D1+			
R1+		-	
×1+			
Ctrl+F6 to exit CLI focus	Pa	aste	
			_
Тор			

R3	• X
Physical Config CLI Attributes	
IOS Command Line Interface	
Password: R\$#telnet 172.31.23.1 Trving 172.31.23.1OpenProhibido el acceso no autorizado	^
User Access Verification	
Password: R2>enable	
Password:	
R2# R2#	
R2# R2#	
R2#	
R2#	
R2#exit	
[Connection to 172.31.23.1 closed by foreign host] R3#	=
R3# R3#	
	aste
Пор	

Listas de acceso extendidas, permiten hacer ping desde los host PC-A y PC-C al host Internet PC, pero no permite hacer ping del host Internet PC a los host PC-A y PC-C

PC-A	
Physical Config Desktop Programming Attributes	
Command Prompt	х
Pinging 209.165.200.230 with 32 bytes of data:	^
Reply from 209.165.200.230: bytes=32 time=24ms TTL=126 Reply from 209.165.200.230: bytes=32 time=15ms TTL=126 Reply from 209.165.200.230: bytes=32 time=15ms TTL=126	
Reply from 209.165.200.230: bytes=32 time=14ms TTL=126	
<pre>Ping statistics for 209.165.200.230: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 14ms, Maximum = 24ms, Average = 18ms</pre>	
C:\>ping 209.165.200.230	
Pinging 209.165.200.230 with 32 bytes of data:	
Reply from 209.165.200.230: bytes=32 time=18ms TTL=126 Reply from 209.165.200.230: bytes=32 time=19ms TTL=126 Reply from 209.165.200.230: bytes=32 time=16ms TTL=126 Reply from 209.165.200.230: bytes=32 time=13ms TTL=126	
<pre>Fing statistics for 209.165.200.230: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = 13ms, Maximum = 19ms, Average = 16ms</pre>	E
C:\>	T
Тор	





Physical	Config	Desktop	Programming	Attributes
		1 .		
Command	Prompt			x
Cor	negtion	mogifig	DNG Suffix	
Phy	vsical Ad	dress	bill ballin.	.: 0002.1657.EB7E
Lin	k-local	IPv6 Adda	ess	: FE80::202:16FF:FE57:EB7E
IP	Address.			: 192.168.30.31
Sub	onet Mas)	k		.: 255.255.255.0
Def	ault Gat	teway		.: 192.168.30.1
DNS	Servers	8		.: 10.10.10.11
DHO	P Server	cs		.: 192.168.30.1
DHC	Pv6 Clie	ent DUID		.: 00-01-00-01-B0-32-63-4E-00-02-16-57-EB-7E
C-\>ni	ng 192 1	168 40 31		
	,			
Pingir	lg 192.16	68.40.31 v	ith 32 bytes	s of data:
Reques	st timed	out.		
Reply	from 192	2.168.40.3	1: bytes=32	time=11ms TTL=127
Reply	from 192	2.168.40.3	11: bytes=32	time=14ms TTL=127
Reply	from 192	2.168.40.3	1: bytes=32	time=15ms TTL=127
Ding			169 40 91-	
De	ckate: (Sent = 4	Deceived = 1	3 Lost = 1 (25% loss)
Approx	imate ro	ound trip	times in mil	lli-seconds:
Mi	mimum =	11ms, Max	cimum = 15ms	Average = 13ms
C:\>				

Command Prompt		
C		
Dhysical Address	- 00E0 E798 6082	
Link-local TPv6 Add	ress - FE802E0-F7FF-FE	98-6082
IP Address		
Subnet Mask	: 255.255.255.0	
Default Gateway		
DNS Servers		
DHCP Servers		
DHCPv6 Client DUID.		-90-75-00-E0-F7-98-60-82
C:\>ping 192.168.30.31		
or (opting total t		
Pinging 192.168.30.31	with 32 bytes of data:	
Reply from 192.168.30.3	31: bytes=32 time=11ms TTL=127	
Reply from 192.168.30.3	31: bytes=32 time=11ms TTL=127	
Reply from 192.168.30.3	31: bytes=32 time=17ms TTL=127	
Reply from 192.168.30.3	31: bytes=32 time=17ms TTL=127	
Ping statistics for 192	2.168.30.31:	
Packets: Sent = 4,	Received = 4, Lost = 0 (0% loss),
Approximate round trip	times in milli-seconds:	
Minimum = 11ms, Max	ximum = 17ms, Average = 14ms	

NOTA: No se adjuntan más pantallazos para no extender más el documento y evitar que quede más pesado y a medida que se fue desarrollando la actividad se hacían pruebas, se puede ver en los pantallazos del proceso. De igual manera se anexa el archivo de packet tracer para evidencia y su validación.

La prueba de habilidades cuenta con 13 puntos, durante el proceso se integraron algunos con el fin de darle más orden al documento quedando en total 11 puntos

Conclusiones

- Se logró comprender y utilizar los diferentes protocolos de routing disponibles dependiendo de las necesidades de la red.
- Se conoció y desarrollo la implementación y configuración básica de OSPF de área única.
- Se analizaron y ejecutaron las instrucciones necesarias para utilizar las ACL estándar y extendida en un router Cisco.
- Se identificó cada una de las funciones, la configuración y la aplicación de DHCPv4.
- Se estudió la implementación de NAT combinada sobre la red configurada con direcciones IPv4.

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