DIPLOMADO DE PROFUNDIZACION CISCO PRUEBA DE HABILIDADES PRÁCTICAS CISCO CCNP

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UNIVERSIDAD NACIONAL ABIERTA Y A DISTANCIA - UNAD ESCUELA DE CIENCIAS BÁSICAS TECNOLOGÍA E INGENIERÍA INGENIERÍA DE ELECTRÓNICA DIPLOMADO CISCO CCNP CALI-VALLE 2020 DIPLOMADO DE PROFUNDIZACION CISCO PRUEBA DE HABILIDADES PRÁCTICAS CISCO CCNP

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UNIVERSIDAD NACIONAL ABIERTA Y A DISTANCIA - UNAD ESCUELA DE CIENCIAS BÁSICAS TECNOLOGÍA E INGENIERÍA INGENIERÍA DE ELECTRÓNICA DIPLOMADO CISCO CCNP CALI-VALLE 2020

NOTA DE ACEPTACION

Firma del Presidente del jurado

Firma del Jurado

Firma del Jurado

CALI- VALLE 22/MAYO/2020

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GLOSARIO

NETWORKING: red informática conjunto de equipos informáticos y software conectados entre sí por medio de dispositivos físicos que envían y reciben impulsos eléctricos.

VLAN: Varias VLAN pueden coexistir en un único conmutador físico o en una única red física. Son útiles para reducir el dominio de difusión y ayudan en la administración de la red,

CCNP: Para obtener esta certificación, se han de superar varios exámenes clasificados según la empresa en 3 módulos.

RED: es un conjunto de equipos nodos y software conectados entre sí por medio de dispositivos físicos o inalámbricos que envían y reciben impulsos eléctricos.

ROUTER: permite interconectar computadoras que funcionan en el marco de una red.

SWITCH: que son los encargados de la interconexión de equipos dentro de una misma red.

TOPOLOGÍA: se trata de una especialización vinculada a las propiedades y características que poseen los cuerpos geométricos y que se mantienen sin alteraciones.

ENRUTAMIENTO: es la función de buscar un camino entre todos los posibles en una red de paquetes cuyas topologías poseen una gran conectividad.

RESUMEN.

En este trabajo se desarrolla el trabajo final del diplomado de profundización de cisco ccnp, en el cual se desarrolla la prueba de habilidades. Con el desarrollo de dos escenarios realizaremos la configuración. En el primer escenario se realizara la configuración de la relación de vecino BGP por medio de cuatro routers y en el segundo escenario nos encontraremos con las configuraciones VTP en los diferentes modos y configuraciones de servidor y clientes en los switch, además manejaremos enlaces troncales y manejo de Vlan's. Este trabajo cuenta con una descripción detallada del proceso de desarrollo mediante el uso de comandos ing, traceroute, show ip route, entre otros.

En un mundo globalizado las redes de comunicación juegan un papel vital para optimizar los proceso, allí es donde la electrónica y en este caso el uso de las redes proporcionan la base del desarrollo.

Palabras Clave: Networking, Vlan, CCNP, Red, Router, Switch, topologia y enrutamiento.

ABSTRACT

In this work, the final work of the cisco ccnp deepening diploma course is developed, in which the skills test is developed. With the development of two scenarios we will carry out the configuration. In the first scenario, the configuration of the BGP neighbor relationship will be carried out by means of four routers and in the second scenario we will find the VTP configurations in the different modes and server and client configurations on the switches, we will also handle trunks and handling from Vlan's. This work has a detailed description of the development process through the use of ing, traceroute, and show ip route commands, among others.

In a globalized world, communication networks play a vital role in optimizing processes, that's where electronics and in this case the use of networks provide the basis for development.

Key Words: Networking, Vlan, CCNP, Network, Router, Switch, topology and routing.

INTRODUCCION

Mediante el desarrollo de este trabajo, se busca desarrollar dos escenarios de prueba de habilidades cisco, por lo cual se lograra poner en práctica todo el conocimiento adquirido durante todos los temas desarrollados, en el diplomado profundización CISCO CCNP.

Es importante resaltar que el presente trabajo se basa en la profundización de configuraciones sobre Routing and Switching de Cisco Networking Academi, bajo configuraciones o conceptos avanzados sobre redes de vos, video y datos de manera convergente. Se lograra instalar, configurar y operar pequeñas redes e implementar protocolos como TCP/IP, OSPF, EIGRP, BGP, además de ISDN, rame Relay, STP y VTP en redes de telecomunicaciones pequeñas, medianas o grandes.

Por último se lograra identificar la importancia de las redes de las telecomunicaciones en un mundo cada vez más globalizado, en el que la comunicación y el manejo de esta son de vital importancia en esta era digital.

ESCENARIO 1



Figura 1. Descripción Escenario 1

Información para configuración de los Routers.

Configuracion-R1

Tabla 1. Router R1 interfaz, dirección ip y mascara

Interfaz	Dirección IP	Máscara
Loopback 0	1.1.1.1	255.0.0.0
Loopback 1	11.1.0.1	255.255.0.0
S 0/0	192.1.12.1	255.255.255.0

Configurar-R2

Interfaz	Dirección IP	Máscara
Loopback 0	2.2.2.2	255.0.0.0
Loopback 1	12.1.0.1	255.255.0.0
S 0/0	192.1.12.2	255.255.255.0
E 0/0	192.1.23.2	255.255.255.0

Tabla 2. Router R2 interfaz, dirección ip y mascara

Configurar R-3

Tabla 3. Router R3 interfaz, dirección ip y mascara

Interfaz	Dirección IP	Máscara
Loopback 0	3.3.3.3	255.0.0.0
Loopback 1	13.1.0.1	255.255.0.0
E 0/0	192.1.23.3	255.255.255.0
S 0/0	192.1.34.3	255.255.255.0

Configurar R-4

Interfaz	Dirección IP	Máscara
Loopback 0	4.4.4.4	255.0.0.0
Loopback 1	14.1.0.1	255.255.0.0
S 0/0	192.1.34.4	255.255.255.0

Se utilizara la configuración del protocolo EBGP. La red se configuraran 2 Loopback bajo dos rutas distintas para cada equipo, además se contara con la configuración de 2 rutas más, una para un puerto Ethernet y a otra para un puerto de Serial.

 Configure una relación de vecino BGP entre R1 y R2. R1 debe estar en AS1 y R2 debe estar en AS2. Anuncie las direcciones de Loopback en BGP. Codifique los ID para los routers BGP como 22.22.22.22 para R1 y como 33.33.33.33 para R2. Presente el paso a con los comandos utilizados y la salida del comando show ip route.



Figura 2. Descripción Escenario 1 simulación Packet Tracer.

A continuación el scrip que corresponde a la configuración:

Configuración en R1

Configuración inicial R1.

🦉 R1	
Physical Config CLI Attributes	
IOS Command Line Interface	
Would you like to enter the initial configuration dia no	alog? [yes/no]:
Press RETURN to get started!	
Router>enable Router#conf Configuring from terminal, memory, or network [termin Enter configuration commands, one per line. End with Router(config)#hostname R1 R1(config)#int lo 0	nal]? h CNTL/Z.
R1(config-if)‡ %LINK-5-CHANGED: Interface Loopback0, changed state ;	to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Loop state to up	back0, changed
R1(config-if)#ip address 1.1.1.1 255.0.0.0 R1(config-if)#exit R1(config)#	E
Ctrl+F6 to exit CLI focus	Copy Paste

Figura 3. Configuración inicial R1



Figura 4. Configuración inicial R1

Router>enable Router#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)#hostname R1 R1(config)#int lo 0

R1(config-if)# %LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

R1(config-if)#ip address 1.1.1.1 255.0.0.0 R1(config-if)#exit

Router>enable Router#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)#hostname R1 R1(config)#int lo 0

R1(config-if)# %LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

R1(config-if)#ip address 1.1.1.1 255.0.0.0 R1(config-if)#exit

Configuración inicial R2.

P R2								- 6	
Physical	Config	CLI							
			IOS Com	mand Line	Interfac	e			
									-
Router>e	nable								
Router#c	conf								
Configur	ing from	termina	l, memory, or	network [te	rminal]?				
Enter co	onfigurati	on comm	ands, one per	r line. End	with CNTL	/Z.			
Router (config) #ho	stname	R2						
R2 (confi	ig)#int lo	0							
R2 (confi	(UNNORD.		Teenheeho						
*LINK-5-	CHANGED:	Interia	ice Loopbacku,	, changed sta	te to up				
%LINEPRO	DTO-5-UPDO	WN: Lin	e protocol on	n Interface L	oopback0,	changed	state to	o up	
R2 (confi	ig-if)‡ip	address	2.2.2.2 255	.0.0.0					
R2 (confi	ig-if)‡exi	t							
R2 (confi	ig) #int lo	1							
R2 (confi	ig-if)#								
%LINK-5-	-CHANGED:	Interfa	ce Loopback1,	, changed sta	te to up				
%LINEPRO	DTO-5-UPDO	WN: Lin	e protocol or	n Interface L	oopback1,	changed	state to	o up	
R2 (confi	ig-if)#ip	address	12.1.0.1 25	5.255.0.0					Ξ
R2 (confi	lg-if)‡exi	t							
R2 (confi	ig) #int s0	/0/0							
R2 (confi	ig-if)‡ip	address	192.1.12.2	255.255.255.0					
R2 (confi	ig-if)‡no	shut							
									-
							C		-
							Сору	Pa	aste

Figura 5. Configuración inicial R2



Figura 6. Configuración inicial R2

Router>enable Router#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)#hostname R2 R2(config)#int lo 0

R2(config-if)# %LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

R2(config-if)#ip address 2.2.2.2 255.0.0.0 R2(config-if)#exit R2(config)#int lo 1

R2(config-if)#

%LINK-5-CHANGED: Interface Loopback1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up

R2(config-if)#ip address 12.1.0.1 255.255.0.0 R2(config-if)#exit R2(config)#int s0/0/0 R2(config-if)#ip address 192.1.12.2 255.255.255.0 R2(config-if)#no shut

R2(config-if)# %LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

R2(config-if)#int gigabitethernet 0/0 R2(config-if)#ip addresss 192.1.23.2 255.255.255.0 ^ % Invalid input detected at '^' marker. R2(config-if)#ip address 192.1.123.2 255.255.255.0 R2(config-if)#no shut

R2(config-if)# %LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

R2(config-if)#exit R2(config)#end R2# %SYS-5-CONFIG_I: Configured from console by console

Configuracion inicial R 3

R3		- 0 X
Physical Config	CLI	
	IOS Command Line Interface	
Press RETURN to g	et started!	*
Router>enable Router‡config Configuring from Enter configurati Router(config)‡ho R3(config)‡int lo	terminal, memory, or network [terminal]? on commands, one per line. End with CNTL/Z. stname R3	
R3(config-if)# %LINK-5-CHANGED: %LINEPROTO-5-UPDO	Interface Loopback0, changed state to up WN: Line protocol on Interface Loopback0, changed state to	ουρ
R3(config-if)#ip R3(config-if)#exi R3(config)#int lo	address 3.3.3.3 255.0.0.0	
R3(config-if)# %LINK-5-CHANGED:	Interface Loopback1, changed state to up	
%LINEPROTO-5-UPDO	WN: Line protocol on Interface Loopback1, changed state to	o up
R3(config-if)#ip R3(config-if)#exi R3(config)#	address 13.1.0.1 255.255.0.0 t	-
	Сору	Paste

Figura 7. Configuración inicial R3

R3		
Physical Config CLI		
	IOS Command Line Interface	
STINESKOIO-S-OSDOMN. TIU	e prococor on incertace boopbacko, changed sc	ace co up
R3(config-if) #ip address R3(config-if) #exit R3(config) #int lo 1	3.3.3.3 255.0.0.0	
R3(config-if)# %LINK-5-CHANGED: Interfa	ce Loopback1, changed state to up	
<pre>%LINEPROTO-5-UPDOWN: Lin ip address 13.1.0.1 255. B3(config-if)texit</pre>	e protocol on Interface Loopback1, changed st 255.0.0	ate to up
R3(config) #int gigabitet	hernet 0/0	
R3(config-if)#ip address	192.1.23.3 255.255.255.0	
R3(config-if) #no shut		
R3(config-if)# %LINK-5-CHANGED: Interfa	ce GigabitEthernet0/0, changed state to up	
R3(config-if)#exit		
R3(config) #int s0/0/0		
R3(config-if)#ip address R3(config-if)#no shut	192.1.34.3 255.255.255.0	
%LINK-5-CHANGED: Interfa R3(config-if)#exit	ce Serial0/0/0, changed state to down	
R3(config) #end		E
R3#		
%SYS-5-CONFIG_I: Configu	red from console by console	*
		Paste
		Paste

Figura 8. Configuración inicial R3

--- System Configuration Dialog ---

Continue with configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>enable Router#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)#hostname R3 R3(config)#int lo 0

R3(config-if)# %LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

R3(config-if)#ip address 3.3.3.3 255.0.0.0 R3(config-if)#exit R3(config)#int lo 1

R3(config-if)# %LINK-5-CHANGED: Interface Loopback1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up ip address 13.1.0.1 255.255.0.0 R3(config-if)#exit R3(config)#int gigabitethernet 0/0 R3(config-if)#ip address 192.1.23.3 255.255.255.0 R3(config-if)#no shut

R3(config-if)# %LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

R3(config-if)#exit R3(config)#int s0/0/0 R3(config-if)#ip address 192.1.34.3 255.255.255.0 R3(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down R3(config-if)#exit R3(config)#end

R3# %SYS-5-CONFIG_I: Configured from console by console

Configuracion inicial R 4

Physical Config CLI IOS Command Line Interface Press RETURN to get started!	R4	 X
IOS Command Line Interface Press RETURN to get started! Router>enable Routersenable Routersenable Routerignation commands, one per line. End with CNTL/2. Router(config)#hostname R4 R4(config)#hostname R4 R4(config-if)# tLINK=5-CHANGED: Interface Loopback0, changed state to up R4(config-if)#uit R4(config-if)#uit R4(config-if)# tLINK=5-CHANGED: Interface Loopback1, changed state to up R4(config-if)#uit R4(c	Physical Config CLI	
<pre>Press RETURN to get started! Router>enable Routersconf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)ithostname R4 R4(config)itht lo 0 R4(config-if)itht line protocol on Interface Loopback0, changed state to up R4(config-if)itht lo 1 R4(config-if)ithtt lo 1 R4(config-if)ithttt lo 1 R4(config-if)ithtt lo 1 R4(config-if)ithtt lo 1 R4(config-if)ithtt lo 1 R4(config-if)ithtt lo 1 R4(config-if)ithttt lo 2 R4(confi</pre>	IOS Command Line Interface	
Router>enable Router\$conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)ithostname R4 R4(config)ithostname R4 R4(config-if)! %LINEFACTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up R4(config-if)!suit R4(conf	Press RETURN to get started!	*
Router>enable Routericonf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/2. Router(config) fhostname R4 R4(config) fint 10 0 R4(config) fint 10 0 R4(config-if) fint address 4.4.4.4 255.0.0.0 R4(config-if) fint 10 1 R4(config-if) fint 10 1 R4(
Routerfoonf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)#hostname R4 R4(config)#int lo 0 R4(config)#int lo 0 R4(config-if)# #LINEFROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up R4(config-if)#ip address 4.4.4.4 255.0.0.0 R4(config-if)#int lo 1 R4(config-if)# #LINEFROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up %LINEFROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up %LINEFROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up %LINEFROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if)# %LINEFROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if)#swit R4(config-if)#int s0/0/0 R4(config-if)#int s0/0/0	Router>enable	
Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)thostname R4 R4(config)tint lo 0 R4(config-if)t \$LINE-5-CHANGED: Interface Loopback0, changed state to up R4(config-if)tip address 4.4.4.4 255.0.0.0 R4(config-if)tip address 4.4.4.4 255.0.0.0 R4(config-if)tip to 1 R4(config-if)tip to 1 R4(config-if)tip to 1 R4(config-if)tip to 1 R4(config-if)tip to 1 R4(config-if)tip address 14.1.0.1 255.255.0.0 R4(config-if)tip to 1 R4(config-if)tip to 20/00 R4(config-if)tip to	Router‡conf	
<pre>Inter configitation commans, one par line. Ind with CNLD2. Router(config)thostname R4 R4(config)tint 10 0 R4(config-if)t tLINE-SCHANGED: Interface Loopback0, changed state to up %LINE-SCHANGED: Interface Loopback1, changed state to up R4(config-if)texit R4(config-if)texit R4(config-if)texit R4(config-if)texit LLINE-SCHANGED: Interface Loopback1, changed state to up R4(config-if)texit R</pre>	Configuring from terminal, memory, or network [terminal]?	
R4 (config) #int lo 0 R4 (config-if) # %LINE-S-CRANGED: Interface Loopback0, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up R4 (config-if) #int lo 1 R4 (config-if) # #LINE-S-CRANGED: Interface Loopback1, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # #LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # #LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) # # LINEPROTO-5-UPDOWN: LINEP	Router (config) #hostname R4	
R4(config-if)\$ \$LINE-5-CHANGED: Interface Loopback0, changed state to up \$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up R4(config-if)\$ip address 4.4.4.4 255.0.0.0 R4(config-if)\$int 1 R4(config-if)\$ LINE-5-CHANGED: Interface Loopback1, changed state to up \$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if)\$ip address 14.1.0.1 255.255.0.0 R4(config-if)\$int s/0/0 R4(config-if)\$int s/0/0 R4(config-if)\$int s/0/0	R4(config) #int lo 0	
<pre>\$LINK-5-CHANGED: Interface Loopback0, changed state to up \$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up R4(config-if)\$ip address 4.4.4.4 255.0.0.0 R4(config-if)\$int lo 1 R4(config-if)\$ \$LINK-5-CHANGED: Interface Loopback1, changed state to up \$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if)\$ip address 14.1.0.1 255.255.0.0 R4(config-if)\$int s0/0/0 R4(config-if)\$int sddress 19.1 34.4 255.255.0.0 </pre>	R4(config-if) #	
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up R4(config-if)#ip address 4.4.4.4 255.0.0.0 R4(config-if)#awit R4(config-if)# \$LINE-5-CHANGED: Interface Loopback1, changed state to up \$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if)#int sddress 14.1.0.1 255.255.0.0 R4(config-if)#int sddress 192 1 34 4 255.255 0 </pre>	%LINK-5-CHANGED: Interface Loopback0, changed state to up	
R4 (config-if) #ip address 4.4.4.4 255.0.0.0 R4 (config-if) #exit R4 (config-if) # %LINE-5-CHANGED: Interface Loopback1, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4 (config-if) #int s0/0/0 R4 (config-if) #int s0/0/0 R4 (config-if) #int s0/0/0 R4 (config-if) #int s0/0/0	%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up	
R4(config-if)#exit R4(config-if)# \$LINK-5-CHANGED: Interface Loopback1, changed state to up \$LINK-5-CHANGED: Interface Loopback1, changed state to up R4(config-if)#in address 14.1.0.1 255.255.0.0 R4(config-if)#int s0/0/0 R4(config-if)#int s0/0/0 R4(config-if)#int s0/0/0	R4(config-if) #ip address 4.4.4.4 255.0.0.0	
R4(config) #int lo 1 R4(config-if) # %LINR-5-CHANGED: Interface Loopback1, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if) #int soldress 14.1.0.1 255.255.0.0 R4(config-if) #int soldress 19.1 34 4 255.255 0.0 R4(config-if) #int soldress 19.1	R4(config-if) #exit	
R4(config-if); \$LINE-5-CHANGED: Interface Loopback1, changed state to up \$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if); R4(R4(config) #int lo 1	
Allowing First State of the set o	D4/config-if\#	=
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up R4(config-if)#ip address 14.1.0.1 255.255.0.0 R4(config-if)#exit R4(config)#int s0/0/0 R4(config)#int s0/0/0</pre>	%LINK-5-CHANGED: Interface Loopback1, changed state to up	
R4(config-if)#ip address 14.1.0.1 255.255.0.0 R4(config-if)#exit R4(config-if)#in s0/0/0 R4(config-if)#in sddress 192 1 34 4 255 255 255 0	\$LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up	
R4(config-if)#in #ddress 14.1.0.1 255.255.0.0 R4(config-if)#exit R4(config-if)#in ±0/0/0 R4(config-if)#in ±ddress 192 1 34 4 255 255 255 0		
A4(config=1)/exit A4(config=1)/exit B4(config=1)	R4(config-if)#ip address 14.1.0.1 255.255.0.0	
D4(config-if)fin address 192 1 34 4 255 255 0	R4(config)fint s0/0/0	
	D4/config-if)tin address 192 1 34 4 255 255 255 0	-
Copy Paste	Copy Pas	te

Figura 10. Configuración inicial R4

🏹 R4	-			×
Physical	Config	CLI		
			IOS Command Line Interface	
\$LINEPROT	ro-s-u₽DO⊮	N: Lin	e protocol on Interface Loopback0, changed state to up	*
R4 (config R4 (config R4 (config	g-if)‡ip a g-if)‡exit g)‡int lo	ddress ; 1	4.4.4.4 255.0.0.0	
R4(config %LINK-5-0	g-if)# CHANGED: 1	interfa	ce Loopback1, changed state to up	
\$LINEPROT	ro-s-updow	N: Lin	e protocol on Interface Loopback1, changed state to up	
R4 (config R4 (config R4 (config R4 (config R4 (config R4 (config	g-if)‡ip a g-if)‡exit g)‡int s0/ g-if)‡ip a g-if)‡cloc g-if)‡no s	ddress 0/0 ddress k rate shutdow	14.1.0.1 255.255.0.0 192.1.34.4 255.255.265.0 n	
R4(config %LINK-5-0	g-if)‡ CHANGED: J	Interfa	ce Serial0/0/0, changed state to up	
R4(config %LINEPROT	g-if)‡ IO-5-UPDOW	N: Lin	e protocol on Interface Serial0/0/0, changed state to up	
R4(config R4(config R4# %SYS-5-C0	g-if)#exit g)#end DNFIG_I: (: Configu	red from console by console	4
			Copy Pas	te

Figura 11. Configuración inicial R4

Router>enable Router#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Router(config)#hostname R4 R4(config)#int lo 0

R4(config-if)# %LINK-5-CHANGED: Interface Loopback0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback0, changed state to up

R4(config-if)#ip address 4.4.4.4 255.0.0.0 R4(config-if)#exit R4(config)#int lo 1

R4(config-if)# %LINK-5-CHANGED: Interface Loopback1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Loopback1, changed state to up

R4(config-if)#ip address 14.1.0.1 255.255.0.0 R4(config-if)#exit R4(config)#int s0/0/0 R4(config-if)#ip address 192.1.34.4 255.255.255.0 R4(config-if)#clock rate 64000 R4(config-if)#no shutdown

R4(config-if)# %LINK-5-CHANGED: Interface Serial0/0/0, changed state to up

R4(config-if)# %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/0, changed state to up

R4(config-if)#exit R4(config)#end R4# %SYS-5-CONFIG_I: Configured from console by console CONFIGURACION DE VECINO PARA ROUTER R1.



Figura 12. Configuración vecino router R1

R1#en R1#config Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. R1(config)#router bgp 1 R1(config-router)#bgp router-id 22.22.22.22 R1(config-router)#%BGP-5-ADJCHANGE: neighbor 192.1.12.2 Up R1(config-router)#neighbor 192.1.12.2 remote-as 2 R1(config-router)#network 1.0.0.0 mask 255.0.0.0 R1(config-router)#network 11.1.0.0 mask 255.255.0.0 R1(config-router)#exit R1(config)#exit R1# %SYS-5-CONFIG_I: Configured from console by console R1#write Building configuration... [OK]

CONFIGURACION DE VECINO PARA ROUTER R2



Figura 13. Configuración vecino router R2

R2>en R2#config Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. R2(config)#router bgp 2 R2(config-router)#bgp router-id 33.33.33.33 R2(config-router)#meighbor 192.1.12.1 remote-as 1 R2(config-router)#meighbor 192.1.12.1 remote-as 1 R2(config-router)#%BGP-5-ADJCHANGE: neighbor 192.1.12.1 Up R2(config-router)#metwork 2.0.0.0 mask 255.0.0.0 R2(config-router)#network 12.1.0.0 mask 255.255.0.0 R2(config-router)#end R2# R2#write Building configuration... [OK] R2#

Figura 9. Se comprueba el funcionamiento de la relación BGP establecida

```
R1#ping 192.1.12.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.1.12.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/8/16 ms
R1#
R2#ping 192.1.12.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.1.12.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/19/88 ms
```

 Configure una relación de vecino BGP entre R2 y R3. R2 ya debería estar configurado en AS2 y R3 debería estar en AS3. Anuncie las direcciones de Loopback de R3 en BGP. Codifique el ID del router R3 como 44.44.44.44.
 Presente el paso a con los comandos utilizados y la salida del comando show ip route.



Figura 14. Configuración vecino BGP R2.

R2>en R2#config Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. R2(config)#router bgp 2 R2(config-router)#neighbor 192.1.23.3 remote-as 3 R2(config-router)#exit R2(config)#end R2# %SYS-5-CONFIG_I: Configured from console by console



Figura 15. Configuración codificar el ID para el router R3.

R3>en R3#config Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. R3(config)#router bgp 3 R3(config-router)#bgp router-id 44.44.44.44 R3(config-router)#neighbor 192.1.23.2 remote-as 2 R3(config-router)#network 3.0.0.0 mask 255.0.0.0 R3(config-router)#network 13.1.0.0 mask 255.255.0.0 R3(config-router)#network 13.1.0.0 mask 255.255.0.0 R3(config-router)#exit R3(config)#end R3# %SYS-5-CONFIG_I: Configured from console by console

Se verifica configuración BGP por medio del comando Show ip BGP



Figura 16. Verificación BGP.

3. Configure una relación de vecino BGP entre R3 y R4. R3 ya debería estar configurado en AS3 y R4 debería estar en AS4. Anuncie las direcciones de Loopback de R4 en BGP. Codifique el ID del router R4 como 66.66.66.66. Establezca las relaciones de vecino con base en las direcciones de Loopback 0. Cree rutas estáticas para alcanzar la Loopback 0 del otro router. No anuncie la Loopback 0 en BGP. Anuncie la red Loopback de R4 en BGP. Presente el paso a con los comandos utilizados y la salida del comando show ip route.



Figura 18. Configuración vecino BGP R3.

R3>en R3#config Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. R3(config)#router bgp 3 R3(config-router)#neighbor 192.1.34.4 remote-as 4 R3(config-router)#exit R3(config)#end R3# %SYS-5-CONFIG_I: Configured from console by console



Figura 19. Configuración codificar el ID para el router R4.

R4>en R4#config Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. R4(config)#router bgp 4 R4(config-router)#bgp router-id 66.66.66.66 R4(config-router)#neighbor 192.1.34.3 remote-as 3 R4(config-router)#%BGP-5-ADJCHANGE: neighbor 192.1.34.3 Up R4(config-router)#network 4.0.0.0 mask 255.0.0.0 R4(config-router)#exit R4(config)#ip route 3.0.0.0 255.0.0.0 192.1.34.3 R4(config)#router bgp 4 R4(config-router)#no network 4.0.0.0 mask 255.0.0.0 R4(config-router)#network 4.0.0.0 mask 255.0.0.0 R4(config-router)#network 14.1.0.0 mask 255.255.0.0 R4(config-router)#exit R4(config)#end R4# %SYS-5-CONFIG_I: Configured from console by console

Se verifica configuración BGP por medio del comando **Show ip BGP**, en el Router R4.

R4#show ip bgp								
BGP table version	is 6, local route:	r ID is 66.66.0	56.6	6				
Status codes: s s	suppressed, d damped	d, h history, *	• va	lid, >	bes	t, i	- inter	rnal,
r I	IB-failure, S Stale	e						
Origin codes: i -	- IGP, e - EGP, ? -	incomplete						
Network	Next Hop	Metric Loc	Prf	Weight	t Pa	th		
	0.0.0.0	0	0	32768	i			
*> 4.0.0.0/8								
*> 4.0.0.0/8 *> 13.1.0.0/16	192.1.34.3	0	0	0	3 i			
*> 4.0.0.0/8 *> 13.1.0.0/16 *> 14.1.0.0/16	192.1.34.3 0.0.0.0	0	0	0 32768	3 i i			:
*> 4.0.0.0/8 *> 13.1.0.0/16 *> 14.1.0.0/16	192.1.34.3 0.0.0.0	0	0	0 32768	3 i i			:
*> 4.0.0.0/8 *> 13.1.0.0/16 *> 14.1.0.0/16	192.1.34.3 0.0.0.0	0	0	0 32768	3 i i			-
*> 4.0.0.0/8 *> 13.1.0.0/16 *> 14.1.0.0/16 R4#	192.1.34.3 0.0.0.0	0 0	0	0 32768	3 i i			

Figura 20. Verificación configuración BGP.





A. Configurar VTP

1. Todos los switches se configurarán para usar VTP para las actualizaciones de VLAN. El switch SW-BB se configurará como el servidor. Los switches SW-AA y SW-CC se configurarán como clientes. Los switches estarán en el dominio VPT llamado CCNP y usando la contraseña cisco.



Figura 22. . Descripción Escenario 2 simulación Packet Tracer.

red comprendida por 3 Switches , cada uno de estos equipos tiene configuraciones independientes

SW-AA.

hysical	Config	CLI			
			IOS Command Line Interface		
1919-9-00	MEIG_I. (onrigu	red from console by console		
Switchier	1				
Enter cor	JAL C Sfiguratio		ands one per line End with CNTL/7		
Switch (co	nfig) žexi	it.	ands, one per time. End with third/2.		
Switch#					
SYS-5-CO	ONFIG I: 0	Configu	red from console by console		
	-		-		
Switch#er	n				
Switch#co	onf				
Configuri	ing from t	cermina	<pre>l, memory, or network [terminal]?</pre>		
Enter cor	nfiguratio	on comm	ands, one per line. End with CNTL/Z.		
Switch (co	onfig) #hos	stname	SW-AA		
SW-AA (cor	nfig) #vtp	domain	conp		
Changing	VTP domai	in name	from NULL to comp		
SW-AA (COr	nrig) #vtp	mode c	Ilent		
Setting o	fig) #utp	VIP CL	JENI mode.		
Sw-AA(COI	ling) #vtp	VN data	hase password to gisso		
SW-AA (cor	fig) #vtp	versio	m 2		
Cannot mo	difv vers	sion in	VTP client mode		
SW-AA (cor	nfig) #exit	;			
SW-AA#					
&SYS-5-CC	ONFIG_I: 0	Configu	red from console by console		
SW-AA‡wri	ite				
Building	configura	ation			
[OK]					
[OK] SW-AA#					
[OK] SW-AA‡				Copy	Paste

Figura 23. Configuracion SW_AA.

Switch#en Switch#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Switch(config)#hostname SW-AA SW-AA(config)#vtp domain ccnp Changing VTP domain name from NULL to ccnp SW-AA(config)#vtp mode client Setting device to VTP CLIENT mode. SW-AA(config)#vtp pass cisco Setting device VLAN database password to cisco SW-AA(config)#vtp version 2 Cannot modify version in VTP client mode SW-AA(config)#exit SW-AA# %SYS-5-CONFIG_I: Configured from console by console

SW-AA#write Building configuration... [OK]

SW-AA#

SW-BB

💐 SW-BB		- 0	x
Physical Config CLI			
IOS Command Line Interface			
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10 up</pre>	, changed s	state to	*
Switch>hostname SW-BB			
% Invalid input detected at '^' marker.			
<pre>Switch>en Switch>en Switch#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Switch(config)#top domain comp Changing VTP domain name from NULL to comp SW-BB(config)#vtp mode client Swt-BB(config)#vtp mode client Swt-BB(config)#vtp pass cisco Swting device VLAN database password to cisco SW-BB(config)#vtp version 2 Cannot modify version in VTP client mode SW-BB(config)#exit</pre>			
SW-BB# %SYS-5-CONFIG_I: Configured from console by console			
SW-BB#write Building configuration [OK] SW-BB#			+
	Сору	Paste	

Figura 24. Configuracion SW_BB.

Switch>en Switch#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Switch(config)#hostname SW-BB SW-BB(config)#vtp domain ccnp Changing VTP domain name from NULL to ccnp SW-BB(config)#vtp mode client Setting device to VTP CLIENT mode. SW-BB(config)#vtp pass cisco Setting device VLAN database password to cisco SW-BB(config)#vtp version 2 Cannot modify version in VTP client mode SW-BB(config)#exit SW-BB# %SYS-5-CONFIG_I: Configured from console by console

SW-BB#write Building configuration... [OK] SW-BB#

SW-CC

💐 sw-cc	• X
Physical Config CLI	
IOS Command Line Interface	
	*
Switch>en Switch#confi	
Configuring from terminal, memory, or network [terminal]?	
Enter configuration commands, one per line. End with CNTL/Z.	
Switch(config) #hostname SW-CC	
SW-CC(config) #vtp domain ccnp	
Changing VTP domain name from NULL to conp	
SW-CC(config) #vtp mode client	
Setting device to VTP CLIENT mode.	
SW-CC(config) #vtp pass cisco	
Setting device VLAN database password to cisco	
Sw-CC(coning) #vtp version 2	
Cannot modify version in VIP client mode	
SW-CO(CONFIG) +EXIC	
SSYS-5-CONFIG I: Configured from console by console	
write	-
Building configuration	-
[OK]	
SW-CC#	-

Copy Paste

Figura 25. Configuracion SW_CC.

Switch>en Switch#confi Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. Switch(config)#hostname SW-CC SW-CC(config)#vtp domain ccnp Changing VTP domain name from NULL to ccnp SW-CC(config)#vtp mode client Setting device to VTP CLIENT mode. SW-CC(config)#vtp pass cisco Setting device VLAN database password to cisco SW-CC(config)#vtp version 2 Cannot modify version in VTP client mode SW-CC(config)#exit SW-CC(config)#exit SW-CC# %SYS-5-CONFIG_I: Configured from console by console write Building configuration... [OK] SW-CC#

2. Verifique las configuraciones mediante el comando show vtp status

SW-AA	New Coder Street Street	
hysical Config CLI		
IOS	Command Line Interface	
		*
Press RETURN to get started.		
SW-AA>show vtp status		
VTP Version	: 2	
Configuration Revision	: 0	
Maximum VLANS supported locally	255	
TTD Operation Mode		
TTP Domain Name	. CITENC	
TTD Druping Mode	: Disabled	
VTP V2 Mode	Disabled	
VTP Traps Generation	: Disabled	=
MD5 digest	: 0xEC 0xFE 0x6B 0x9F 0x42 0x47 0xE0 0x98	-
Configuration last modified by	0.0.0.0 at 0-0-00 00:00:00	
SW-AA>		-
	1	
	Сору	Paste

Figura 26.verificar SW-AA Configuracion show vtp status.

🖗 SW-BB	Logist	
Physical Config CLI		
T/	Command Line Inter	faco
10	os command Line Inter	lace
		A
Press RETURN to get started.		
SW-BB>show vtp status		
VTP Version	: 2	
Configuration Revision	: 0	
Maximum VLANs supported loca	11y : 255	
Number of existing VLANS	: 5	
VIP Operating Mode	: Cilent	
VTP Domain Name	: Disabled	
VTP V2 Mode	: Disabled	
VTP Traps Generation	: Disabled	=
MD5 digest	: 0xEC 0xFE 0x6B 0x9F 0	x42 0x47 0xE0 0x98
Configuration last modified	by 0.0.0.0 at 0-0-00 00:00:	00
SW-BB>		T
		Copy Paste

Figura 27.verificar SW-BB Configuracion show vtp status.

3W-CC	Logge Contraction (Contraction)	
Physical Config CLI		
	IOS Command Line Interface	
Switch (config) #hostname : SW-CC(config) #vtp domain Changing VTP domain name SW-CC(config) #vtp mode c: Setting device to VTP CL SW-CC(config) #vtp pass c: Setting device VLN datal SW-CC(config) #vtp version Cannot modify version in SW-CC(config) #exit SW-CC Canfig) #exit SW-CC #SSS-5-CONFIG_I: Configu: write Building configuration (OK) SW-CC	SW-CC ccnp from NULL to ccnp lient IENT mode. isco base password to cisco n 2 VTP client mode red from console by console : 2 : 0 locally : 255 : 5 : Client : ccnp : Disabled : Disabled : Disabled : Disabled : OAEC OFFE 0x6E 0x9F 0x42 0x47 0xE0 0x98	E

Figura 28.verificar SW-CC Configuracion show vtp status.

B. Configurar DTP (Dynamic Trunking Protocol)

4. Configure un enlace troncal ("trunk") dinámico entre SW-AA y SW-BB. Debido a que el modo por defecto es *dynamic auto*, solo un lado del enlace debe configurarse como *dynamic desirable*.

PARA SW-AA

Physical Config CLI			
	IOS Command Line I	nterface	
<pre>vis tomain wame VIP VID Pruning Mode VIP V2 Mode VIP V2 Mode VIP V2 Mode SW-AA Configuration last modifi SW-AA SW-AA Configuration from terminal ENter configuration comme SW-AA(configuration comme SW-AA(configuration SW-AA(configuration)</pre>	 curp Disabled memory, or network [ternds, one per line. Ind with mode trunk 	м9F Ож42 Ож47 ОжЕО Ож98 0:00:00 minal)? ith CNTL/Z.	
<pre>%LINEPROTO-5-UPDOWN: Line %LINEPROTO-5-UPDOWN: Line %LINEPROTO-5-UPDOWN: Line</pre>	protocol on Interface Fa	stEthernet0/1, changed st	ate to
SW-AA(config-if)#switchpd	rt mode dynamic desirable		
SW-AA(config-if)# %LINEPROTO-5-UPDOWN: Line up	protocol on Interface Fa	stEthernet0/1, changed st	ate to
SW-AA(config-if) #no shutd SW-AA(config-if) #exit SW-AB(config) #exite	own		

Figura 29. SW-AA Configuracion trunk

SW-AA>en SW-AA#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-AA(config)#int fa0/1 SW-AA(config-if)#switchport mode trunk

SW-AA(config-if)# %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

SW-AA(config-if)#switchport mode dynamic desirable

SW-AA(config-if)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

SW-AA(config-if)#no shutdown SW-AA(config-if)#exit

PARA SW-BB

-

💐 SW-BB	L	- 0 x
Physical Config CLI		
IOS Command Line Interface		
SW-BB con0 is now available		*
Press RETURN to get started.		
SW-BB>en SW-BB#conf		
Configuring from terminal, memory, or network [terminal]?		
Enter configuration commands, one per line. End with CNTL/Z.		=
SW-BB(config) #int fa0/1		
SW-BB(config-if) fewitchport mode trunk SW-BB(config-if) fewit		
SW-BB (config) #write		-
	Сору	Paste

Figura 30. SW-BB Configuracion *trunk*

-

SW-BB>en-SW-BB#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-BB(config)#int fa0/1 SW-BB(config-if)#switchport mode trunk SW-BB(config-if)#exit 5. Verifique el enlace "trunk" entre SW-AA y SW-BB usando el comando **show** *interfaces trunk*.

SW-AA								X
Physical	Config	CLI						
			IOS Comm	and Line Ir	terface			
SW-AR (CO	n11g-11/#9	wrteng	ort mode dynami	re destrable				
SW-AA(co: %LINEPRO: up	nfig-if)‡ TO-5-UPDOW	N: Lir	ne protocol on 1	Interface Fas	tEthernet0/1	., changed	state to	
SW-AA (co)	nfig-if)#n	o shut	down					
SW-AA (co	nfig-if)‡e	xit						
SW-AA (co	nfig) #writ	e						
	· · ^ ·							
% Invali	d input de	tected	i at '^' marker.					
SW-AA(co) SW-AA(co) SW-AA# %SYS-5-C	nfig)# nfig)#exit ONFIG_I: C	onfigu	ired from consol	le by console				
SW-AA#sh	ow int tru	nk						
Port	Mode		Encapsulation	Status	Native vl	an		
FaU/1	desira	DIE	n-802.1q	trunking	1			
Port	Vlans	allowe	ed on trunk					
Fa0/1	1-1005							
Down					d			
Fort Fa0/1	vians 1	allowe	a and active in	1 management	domain			_
140/1	-							
Port	Vlans	in spa	anning tree forw	varding state	and not pru	ined		=
Fa0/1	1	-			-			
SW-AA#								Ŧ
						Carry	Deate	

Figura 31. verificación SW-AA Configuracion trunk

💐 SW-BB		(Annual of the second s	And in	-		, D X
Physical	Config CLI					
		IOS Comm	nand Line In	terface		
SW-BB>en SW-BB‡conf Configurin Inter conf SW-BB (conf SW-BB (conf SW-BB (conf SW-BB (conf SW-BB (conf SW-BB (conf SW-BB (conf SW-BB (conf SW-BB (conf SW-BB (conf	g from termin. iguration com ig) #int fa0/1 ig-if) #switch ig-if) #swit ig) #rrite input detecter ig) # ig) #exit FIG I: Config	al, memory, or mands, one per port mode trunk i at '^' marker ured from consc	network [termi line. End wit 	.nal]? h CNTL/Z.		•
SW-BB#show	int trunk					
Port Fa0/1	Mode on	Encapsulation 802.1q	1 Status trunking	Native vlan 1		
Port Fa0/1	Vlans allow 1-1005	ed on trunk				
Port Fa0/1	Vlans allow 1	ed and active i	in management d	lomain		
Port Fa0/1 SW-BB#	Vlans in sp 1	anning tree for	warding state	and not pruned	1	T T
					Сору	Paste

Figura 32. SW-BB Configuracion *trunk*

6. Entre SW-AA y SW-CC configure un enlace "trunk" estático utilizando el comando *switchport mode trunk* en la interfaz F0/3 de SW-AA

SW-AA

SW-AA Nysical Config CLI IOS Command Line Interface Port Vlans allowed on trunk Fa0/1 1-1005 Port Vlans allowed and active in management domain Fa0/1 1 Port Vlans in spanning tree forwarding state and not pruned Fa0/1 1 SW-AA4 SW-AA4en SW-AA4en SW-AA4en SW-AA4configuration commands, one per line. End with CNTL/2. SW-AA4config+inf fa0/3 SW-AA(config+if)\$switchport mode trunk SW-AA(config+if)\$switchport mode trunk SW-AA(config+if)\$ *LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up SW-AA(config+if)\$exit SW				
hysical	Config	CLI		
			IOS Command Line Interface	
Port Fa0/1	Vlans 1-100	allowe 5	d on trunk	
Port Fa0/1	Vlans 1	allowe	d and active in management domain	
Port Fa0/1 SW-AA# SW-AA#en	Vlans 1	in spa	nning tree forwarding state and not pruned	
SW-AA‡COI Configur: Enter con SW-AA(con SW-AA(con	nr ing from nfigurati nfig)#int nfig-if)#	termina on comm fa0/3 switchp	l, memory, or network [terminal]? mands, one per line. End with CNTL/Z. wort mode trunk	
SW-AA (cor %LINEPRO: down	nfig-if)# TO-5-UPDO	WN: Lir	e protocol on Interface FastEthernet0/3, changed	i state to
%LINEPRO: up	TO-5-UPDO	WN: Lin	e protocol on Interface FastEthernet0/3, changed	state to
SW-AA (cor SW-AA (cor SW-AA (cor SW-AA SW-AA# %SYS-5-C(nfig-if)‡ nfig-if)‡ nfig)‡end ONFIG_I:	no shut exit Configu	down wred from console by console	
			Сору	Paste

Figura 33. SW-AA Configuracion switchport mode trunk.

SW-AA#en SW-AA#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-AA(config)#int fa0/3 SW-AA(config-if)#switchport mode trunk

SW-AA(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

SW-AA(config-if)#no shutdown SW-AA(config-if)#exit SW-AA(config)#end SW-AA# %SYS-5-CONFIG_I: Configured from console by console





Figura 34. SW-CC Configuracion switchport mode trunk.

SW-CC>en SW-CC#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)#int fa0/3 SW-CC(config-if)#switchport mode trunk

SW-CC(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

SW-CC(config-if)#exit SW-CC(config)#end SW-CC# %SYS-5-CONFIG_I: Configured from console by console

7. Verifique el enlace "trunk" el comando *show interfaces trunk* en SW-AA.

SW-AA	_	-	-	State State	- 0	X
Physical	Config CLI					
		IOS Comma	and Line In	terface		
SW-AA(CONI %LINEPROTO down	-5-UPDOWN: Li	ne protocol on 1	interface Fas	tEthernet0/3, chang	ed state to	*
%LINEPROTO up	D-5-UPDOWN: Li	ne protocol on]	interface Fas	tEthernet0/3, chang	ed state to	
SW-AA (conf SW-AA (conf SW-AA (conf SW-AA‡ \$SYS-5-CO	fig-if)‡no shu fig-if)‡exit fig)‡end NFIG I: Config	tdown	e hu console			
SW-AA#shov	v interfaces t	runk	a			
POIL T	Mode	Encapsulation	Status	Nacive Vian		
Fa0/3	on	802.1q	trunking	1		
Port	Vlans allow	ed on trunk				
Fa0/1	1-1005					
Fa0/3	1-1005					
Port	Vlans allow	ed and active in	management	domain		
Fa0/1	1		-			
Fa0/3	1					
Port	Vlans in sp	anning tree forw	arding state	and not pruned		_
Fa0/1	1					=
Fa0/3	1					
SW-AA#						-
				Cot	py Paste	e)

Figura 35. SW-AA verificacion Configuracion switchport mode trunk.

8. Configure un enlace "trunk" permanente entre SW-BB y SW-CC.

PARA SW-BB

💐 SW-BB	
Physical Config CLI	
IOS Command Line Interface	
	*
Press RETURN to get started.	
SW-BB>en SW-BBteonf	
Configuring from terminal, memory, or network [terminal]?	
SW-BB (config) #int fa0/3 SW-BB (config) #int fa0/3	
SW-BB(config-if);switchpit hode trunk SW-BB(config-if);exit SW-BD(config-if);exit	
SW-BB(contrig);end SW-BB#	=
WIND-S-CONFIG_I: CONFIGURED FROM CONSOLE BY CONSOLE	-
C	opy Paste

Figura 36. SW-BB Configuracion trunk.

SW-BB>en SW-BB#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-BB(config)#int fa0/3 SW-BB(config-if)#switchport mode trunk SW-BB(config-if)#exit SW-BB(config)#end SW-BB# %SYS-5-CONFIG_I: Configured from console by console

PARA SW-CC

sw-cc		
Physical Config CLI		
IOS Command Line Interface		
<pre>SW-CC\$en SW-CC\$eonf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)\$int fa0/1 SW-CC(config-if)\$#switchport mode trunk SW-CC(config-if)\$# \$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, chan</pre>	ged state	to
down %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, chan up exit SW-CC(config) #exit	ged state	to
SW-CC# %SYS-5-CONFIG_I: Configured from console by console		
<pre>SW-CCten SW-CCtconf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)#int fa0/1 SW-CC(config-if)#switchport mode trunk</pre>		
SW-CC(config-if) #exit SW-CC(config-if) #exit SW-CC(config) #end SW-CC‡ %SYS-5-CONFIG_I: Configured from console by console		
Co	ру	Paste

Figura 37. SW-CC Configuracion trunk.

SW-CC#en SW-CC#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)#int fa0/1 SW-CC(config-if)#switchport mode trunk SW-CC(config-if)#exit SW-CC(config)#end SW-CC# %SYS-5-CONFIG_I: Configured from console by console

C. Agregar VLANs y asignar puertos.

9. En SW-AA agregue la VLAN 10. En SW-BB agregue las VLANS Compras (10), Personal (25), Planta (30) y Admon (99)

hysical Config CLI		
	IOS Command Line Interface	
Press RETURN to get star	rted.	
SW-AA>end Franslating "end" dom:	ain garvar (255 255 255 255)	
3W-AA≻end Translating "end"doma ↓ Unknown command or com	ain server (255.255.255.255) mputer name, or unable to find computer address	
SW-AA>end Franslating "end"domm & Unknown command or com SW-AA>en	ain server (255.255.255.255) mputer name, or unable to find computer address	
SW-AA>end Franslating "end"dom# & Unknown command or com SW-AA>en SW-AA\$conf	ain server (255.255.255.255) mputer name, or unable to find computer address	
SW-AA>end Translating "end"domm & Unknown command or com SW-AAPconf Configuring from terming	ain server (255.255.255.255) mputer name, or unable to find computer address al, memory, or network [terminal]?	
SW-AA>end Translating "end"domm & Unknown command or com SW-AA>en SW-AA>conf Configuring from terming Enter configuration com SM-AA(configitation com	ain server (255.255.255.255) mputer name, or unable to find computer address al, memory, or network [terminal]? mands, one per line. End with CNTL/Z.	
SW-AA>end Translating "end"domm % Unknown command or con SW-AA>en SW-AA>eonf Configuring from termine Enter configuration comm SW-AA (config) #vlan 10 TUP VLAN configuration r	ain server (255.255.255.255) mputer name, or unable to find computer address al, memory, or network [terminal]? mands, one per line. End with CNTL/Z. not allowed when device is in CLIENT mode.	
SW-AA>end Translating "end"domm SW-AA>en SW-AA>conf Configuring from termini Enter configuration comm SW-AA(config)‡vlan 10 VTP VLAN config)‡vlan 10 VTP VLAN config)‡vlan 10	ain server (255.255.255.255) mputer name, or unable to find computer address al, memory, or network [terminal]? mands, one per line. End with CNTL/Z. not allowed when device is in CLIENT mode.	
SW-AA>end Translating "end"domm & Unknown command or cor SW-AA2conf Configuring from terminn Enter configuration comm SW-AA(config)#vlan 10 VTP VLAN configuration r SW-AA(config)#exit SW-AA	ain server (255.255.255.255) mputer name, or unable to find computer address al, memory, or network [terminal]? mands, one per line. End with CNTL/Z. not allowed when device is in CLIENT mode.	
SN-AA>end Translating "end"domm & Unknown command or con SN-AA>en SN-AA>conf Configuring from terming Enter configuration comm SN-AA(config)#vlan lo VTP VLAN configuration r SN-AA(config)#exit SN-AA \$2SS-5-CONFIG_I: Configu	ain server (255.255.255.255) mputer name, or unable to find computer address al, memory, or network [terminal]? mands, one per line. End with CNTL/Z. not allowed when device is in CLIENT mode. ured from console by console	
SW-AA>end Translating "end"domm 4 Unknown command or cor SW-AA>en SM-AA\$conf Configuration comm SW-AA(config)#vlan 10 TP VLAN configuration r SW-AA(config)#exit SW-AA SYS-5-CONFIG_I: Configu SW-AA\$	ain server (255.255.255.255) mputer name, or unable to find computer address al, memory, or network [terminal]? mands, one per line. End with CNTL/Z. not allowed when device is in CLIENT mode. ured from console by console	

Figura 38. SW-AA VLANS.

SW-AA>en SW-AA#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-AA(config)#vlan 10 VTP VLAN configuration not allowed when device is in CLIENT mode. SW-AA(config)#exit SW-AA# %SYS-5-CONFIG_I: Configured from console by console

🖲 SW-BB		- 0 X
Physical Confer CLL	the second s	
Physical Config CLI		
	IOS Command Line Interface	
	103 Command Line Interface	
WTD Manadar		*
Configuration Devision	. 2	
Configuration Revision	: U	
Maximum VLANS Supported	10Cally : 255	
Number of existing VLAN	s : 5	
VIP Operating Mode	: Server	
VIP Domain Name	. Comp	
VIP Pruning Mode	: Disabled	
VIP V2 Mode	. Disabled	
VIP Iraps Generation	: Disabled	
MDS digest	: UXEC UXEE UX6B UX9F UX42 UX47 UXEU UX98	
Configuration last modi	ried by 0.0.0.0 at 0-0-00 00:00:00	
Local updater ID 15 0.0	.U.U (no Valid interface found)	
SW-BB‡en		
SW-BB#conr		
Configuring from termin	al, memory, or network [terminal]?	
Enter configuration com	mands, one per line. End with CNIL/2.	
SW-BB(config) #vian 10		
SW-BB(config-vian) #name	compras	
SW-BB (config-Vian) #Vian	25	
SW-BB(config-Vian) #name	persona	
SW-BB(config-Vian) #Vian	30	
SW-BB(config-vian) #name	planta	
SW-BB(config-Vian) #Vian	99	
SW-BB(conrig-vian) #name	acmon	
SW-BB(conrig-vian) #exit		
SW-BB(CONILG) #end		
ACVO 5 CONFIG To Confiden	and from energie by energie	
*515-5-CONFIG_1: Config	ned from console by console	*
L		
	Сору	Paste

.

Figura 39. SW-BB VLANS.

SW-BB#en SW-BB#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-BB(config)#vlan 10 SW-BB(config-vlan)#name compras SW-BB(config-vlan)#vlan 25 SW-BB(config-vlan)#name persona SW-BB(config-vlan)#vlan 30 SW-BB(config-vlan)#name planta SW-BB(config-vlan)#vlan 99 SW-BB(config-vlan)#name admon SW-BB(config-vlan)#exit SW-BB(config)#end SW-BB# %SYS-5-CONFIG_I: Configured from console by console

10. Verifique que las VLANs han sido agregadas correctamente.

hysic	ai coniig					
			IOS Com	mand Lir	ne Interface	
SW-AP	A>show vlan bri	ef				
SW-AP	>show vlan bri	ef				
SW-A# VLAN	Name	ef		Status	Ports	
SW-A# VLAN	Name	ef		Status	Ports	
SW-AF VLAN 1	Name default	ef		Status 	Ports 	
SW-AF VLAN 1	Name default	.ef		Status active	Ports 	
SW-AF VLAN 1	Name default	.ef		Status active	Ports 	
SW-AF VLAN 1	Name default	.ef		Status active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/19, Fa0/18, Fa0/19	
SW-AF VLAN 1	A>show vlan bri Name default	.ef		Status active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/5, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/21, Fa0/18, Fa0/23 Fa0/22, Fa0/22, Fa0/23	
SW-A2 VLAN 1	Name default	.ef		Status active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gia/2	
SW-A2 VLAN 1	Name default Compras	.ef		Status active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/5, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2	
SW-AF VLAN 1 10 25	>show vlan bri Name default compras persona	.ef		Status active active active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/5, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2	
SW-AF VLAN 1 10 25 30	<pre>>show vlan bri Name default compras persona pelanta</pre>	ef		Status active active active active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/10, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2	
SW-AF VLAN 1 10 25 30 99	<pre>>show vlan bri Name default compras persona planta admon</pre>	.ef		Status active active active active active	Ports 	
SW-AF VLAN 1 10 25 30 99 1002	<pre>>show vlan bri Name </pre>	.ef		Status active active active active active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2	
SW-A2 VLAN 1 1 10 25 30 99 1002 1002	<pre>>show vlan bri default compras persona planta admon fddi-default token-ring-def</pre>	.ef		Status active active active active active active active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/10, Fa0/18, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2	
SW-AF VLAN 1 1 10 25 30 99 1002 1003 1004	<pre>>show vlan bri Name </pre>	.ef fault		Status active active active active active active active active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/5, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2	
SW-AF VLAN 1 10 25 30 99 1002 1003 1004	<pre>>show vlan bri default compras persona planta admon fddi-default token-ring-def fddinet-default trokt-default</pre>	.ef fault .t		Status active active active active active active active active active	Ports Fa0/4, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/10, Fa0/19, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2	

Figura 40. Verificar SW-AA VLANS.

Physio	cal Config CLI		
	IOS	Command Lir	ne Interface
а м -в.	B(conrid=visu) tusme bersous	4	
SW-B	B(config-vlan)‡vlan 30		
SW-B	B(config-vian)#name pianta B(config-vian)#vian 89		
SW-BI	B(config=vlan)#vlan 55 B(config=vlan)#name admon		
SW-BI	B(config-vlan) texit		
SW-BI	B(config) #end		
SW-B	B#		
SYS-	- -5-CONFIG I: Configured fro	om console by co	nsole
		-	
SW-B	B‡show vlan brief		
VLAN	Name	Status	Ports
1	default	active	
-	derault	acoive	Fa0/6 Fa0/7 Fa0/8 Fa0/9
			Fa0/10 Fa0/11 Fa0/12 Fa0/13
			Fa0/14, Fa0/15, Fa0/16, Fa0/17
			Fa0/18, Fa0/19, Fa0/20, Fa0/21
			Fa0/22, Fa0/23, Fa0/24, Gig0/1
			Gig0/2
	compras	active	
10		active	
10 25	persona		
10 25 30	persona planta	active	
10 25 30 99	persona planta admon	active active	
10 25 30 99 1002	persona planta admon fddi-default	active active active	ſ
10 25 30 99 1002 1003	persona planta admon fddi-default token-ring-default	active active active active	[
10 25 30 99 1002 1003 1004	persona planta admon fddi-default token-ring-default fddinet-default	active active active active active	
10 25 30 99 1002 1003 1004 1005	persona planta admon fddi-default token-ring-default fddinet-default trnet-default De	active active active active active active active	
10 25 30 99 1002 1003 1004 1005 SW-B	persona planta admon fddidefault token-ring-default fddinet-default trnet-default B‡	active active active active active active	

Figura 41.verificar SW-AA VLANS.

11. Asocie los puertos a las VLAN y configure las direcciones IP de acuerdo con la siguiente tabla.

Interfaz	VLAN	Direcciones IP de los PCs
F0/10	VLAN 10	190.108.10.X / 24
F0/15	VLAN 25	190.108.20.X /24
F0/20	VLAN 30	190.108.30.X /24

Tabla 5. Puertos VLAN y direcciones ip.

X = número de cada PC particular

SW-AA

SW-AA								
Physical	Config	CLI						
			IOS Command Lin	e Interf	ace			
SW-AA≻en								
SW-AA#cor	nf							
Configuri	ng from t	termina	1, memory, or network [terminal]	2			
Enter cor	figuratio	on comm	ands, one per line. En	id with Ch	NTL/Z.			
SW-AA (COI	fig_if) #	irrace	Vian 10					
ST.TNK-5-0	HANGED-	Interfa	ce Vlan10 changed stat	e to up				
%LINEPROT	O-5-UPDO	WN: Lin	e protocol on Interface	Vlan10,	changed	state to	up	
SW-AA (cor	fig-if)#:	ip addr	ess 190.108.10.1 255.25	5.255.0				
SW-AA (cor	111g-11)#(exit	-1 25					
SW-AA (COI	fig=if)#	errace	Vian 25					
%LINK-5-0	HANGED:	Interfa	ce Vlan25, changed stat	e to up				
%LINEPROT	O-5-UPDO	WN: Lin	e protocol on Interface	Vlan25,	changed	state to	up	
SW-AA (cor	fig-if)#:	ip addr	ess 190.108.20.1 255.25	5.255.0				
SW-AA (cor	fig-if)#	exit						
SW-AA (cor	nfig) #inte	erface	vlan 30					
SW-AA (cor	nfig-if)‡							
%LINK-5-C	HANGED:	Interfa	ce Vlan30, changed stat	e to up				
ST. THE DOOT		JN - Trin	a protocol on Interface	Vlan30	changed	etate to	110	
*DIMEPROI	.0 0 02200		e protocor on interrace	· •14000,	changea	30202 00	up	
SW-AA (cor	fig-if)#:	ip addr	ess 190.108.30.1 255.25	5.255.0				
SW-AA (cor	nfig-if)‡	exit						
						Conv	Pac	-t-a
						Copy	Pas	ne.

Figura 42. SW-AA puertos VLAN y direcciones ip.

SW-AA>en SW-AA#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-AA(config)#interface vlan 10 SW-AA(config-if)# %LINK-5-CHANGED: Interface Vlan10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10, changed state to up

SW-AA(config-if)#ip address 190.108.10.1 255.255.255.0 SW-AA(config-if)#exit SW-AA(config)#interface vlan 25 SW-AA(config-if)# %LINK-5-CHANGED: Interface Vlan25, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan25, changed state to up

SW-AA(config-if)#ip address 190.108.20.1 255.255.255.0 SW-AA(config-if)#exit SW-AA(config)#interface vlan 30 SW-AA(config-if)# %LINK-5-CHANGED: Interface Vlan30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30, changed state to up

SW-AA(config-if)#ip address 190.108.30.1 255.255.255.0 SW-AA(config-if)#exit SW-AA(config)#end SW-AA# %SYS-5-CONFIG_I: Configured from console by console **SW-BB**



Figura 43. SW-BB puertos VLAN y direcciones ip

SW-BB>en SW-BB#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-BB(config)#interface vlan 10 SW-BB(config-if)# %LINK-5-CHANGED: Interface Vlan10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10, changed state to up

SW-BB(config-if)#ip address 190.108.10.2 255.255.255.0 SW-BB(config-if)#exit SW-BB(config)#interface vlan 25 SW-BB(config-if)# %LINK-5-CHANGED: Interface Vlan25, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan25, changed state to up

SW-BB(config-if)#ip address 190.108.20.2 255.255.255.0 SW-BB(config-if)#exit SW-BB(config)#interface vlan 30 SW-BB(config-if)# %LINK-5-CHANGED: Interface Vlan30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30, changed state to up

SW-BB(config-if)#ip address 190.108.30.2 255.255.255.0 SW-BB(config-if)#exit SW-BB(config)#end SW-BB# %SYS-5-CONFIG_I: Configured from console by console

SW-CC



Figura 44. SW-CC puertos VLAN y direcciones ip

SW-CC>en SW-CC#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)#interface vlan 10 SW-CC(config-if)# %LINK-5-CHANGED: Interface Vlan10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10, changed state to up

SW-CC(config-if)#ip address 190.108.10.3 255.255.255.0 SW-CC(config-if)#exit SW-CC(config)#interface vlan 25 SW-CC(config-if)#

%LINK-5-CHANGED: Interface Vlan25, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan25, changed state to up

SW-CC(config-if)#ip address 190.108.20.3 255.255.255.0 SW-CC(config-if)#exit SW-CC(config)#interface vlan 30 SW-CC(config-if)# %LINK-5-CHANGED: Interface Vlan30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30, changed state to up

SW-CC(config-if)#ip address 190.108.30.3 255.255.255.0 SW-CC(config-if)#exti ^ % Invalid input detected at '^' marker. SW-CC(config-if)#exit SW-CC(config)#end SW-CC# %SYS-5-CONFIG_I: Configured from console by console

12. Configure el puerto F0/10 en modo de acceso para SW-AA, SW-BB y SW-CC y asígnelo a la VLAN 10.

Configuración puerto Fa0/10 y asignación vlan 10

SW-AA

SW-AA>en SW-AA#config Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-AA(config)#interface fa0/10 SW-AA(config-if)#swithport mode access ^ % Invalid input detected at '^' marker. SW-AA(config-if)#switchport mode access SW-AA(config-if)#switchport access vlan 10 SW-AA(config-if)#switchport access vlan 10 SW-AA(config)#end SW-AA# %SYS-5-CONFIG_I: Configured from console by console

SW-BB

SW-BB>en SW-BB#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-BB(config)#interface fa0/10 SW-BB(config-if)#switchport mode access SW-BB(config-if)#switchport access vlan 10 ^ % Invalid input detected at '^' marker. SW-BB(config-if)#switchport access vlan 10 SW-BB(config-if)#exit SW-BB(config)#end SW-BB# %SYS-5-CONFIG_I: Configured from console by console

SW-CC

SW-CC>en SW-CC#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)#interface fa0/10 SW-CC(config-if)#switchport mode access SW-CC(config-if)#switchport access vlan 10 SW-CC(config-if)#exit SW-CC(config)#end SW-CC(config)#end SW-CC# %SYS-5-CONFIG_I: Configured from console by console

13. Repita el procedimiento para los puertos F0/15 y F0/20 en SW-AA, SW-BB y SW-CC. Asigne las VLANs y las direcciones IP de los PCs de acuerdo con la tabla de arriba.

SW-AA

SW-AA>en SW-AA#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-AA(config)#interface fa0/15 SW-AA(config-if)#switchport mode acccess ٨ % Invalid input detected at '/' marker. SW-AA(config-if)#switchport mode access SW-AA(config-if)#switchport access vlan 20 SW-AA(config-if)#exit SW-AA(config)#interface fa0/20 SW-AA(config-if)#switchport mode access SW-AA(config-if)#switchport access vlan 30 SW-AA(config-if)#exit SW-AA(config)#end SW-AA# %SYS-5-CONFIG I: Configured from console by console

SW-BB

SW-BB>en SW-BB#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-BB(config)#interface fa0/15 SW-BB(config-if)#switchport mode access SW-BB(config-if)#switchport access vlan 25 SW-BB(config-if)#no shutdown SW-BB(config-if)#exit SW-BB(config)#interface fa0/20 SW-BB(config-if)#switchport mode access SW-BB(config-if)#switchport access vlan 30 SW-BB(config-if)#exit SW-BB(config)#end SW-BB# %SYS-5-CONFIG_I: Configured from console by console

SW-CC

SW-CC>en SW-CC#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)#interface fa0/10 SW-CC(config-if)#switchport mode access SW-CC(config-if)#switchport access vlan 10 SW-CC(config-if)#exit SW-CC(config)#interface fa0/15 SW-CC(config-if)#switchport mode access SW-CC(config-if)#switchport access vlan 20 SW-CC(config-if)#exit SW-CC(config)#interface fa0/20 SW-CC(config-if)#switchport mode access SW-CC(config-if)#switchport access vlan 30 SW-CC(config-if)#exit SW-CC(config)#end SW-CC# %SYS-5-CONFIG_I: Configured from console by console

D. Configurar las direcciones IP en los Switches.

14. En cada uno de los Switches asigne una dirección IP al SVI (*Switch Virtual Interface*) para VLAN 99 de acuerdo con la siguiente tabla de direccionamiento y active la interfaz.

Equipo	Interfaz	Dirección IP	Máscara
SW-AA	VLAN 99	190.108.99.1	255.255.255.0
SW-BB	VLAN 99	190.108.99.2	255.255.255.0
SW-CC	VLAN 99	190.108.99.3	255.255.255.0

Tabla 5. Direccionamiento y active la interfaz

SW-AA

SW-AA>en SW-AA#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-AA(config)#interface vlan99 SW-AA(config-if)# %LINK-5-CHANGED: Interface Vlan99, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan99, changed state to up

SW-AA(config-if)#ip address 190.108.99.1 255.255.255.0 SW-AA(config-if)#exit SW-AA(config)#end SW-AA# %SYS-5-CONFIG_I: Configured from console by console

SW-BB

SW-BB>en SW-BB#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-BB(config)#interface vlan99 SW-BB(config-if)# %LINK-5-CHANGED: Interface Vlan99, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan99, changed state to up

SW-BB(config-if)#ip address 190.108.99.2 255.255.255.0 SW-BB(config-if)#exit SW-BB(config)#end SW-BB# %SYS-5-CONFIG_I: Configured from console by console

SW-CC

SW-CC>en SW-CC#conf Configuring from terminal, memory, or network [terminal]? Enter configuration commands, one per line. End with CNTL/Z. SW-CC(config)#interface vlan99 SW-CC(config-if)# %LINK-5-CHANGED: Interface Vlan99, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan99, changed state to up

SW-CC(config-if)#ip address 190.108.99.3 255.255.255.0 SW-CC(config-if)#exit SW-CC(config)#end SW-CC# %SYS-5-CONFIG_I: Configured from console by console

E. Verificar la conectividad Extremo a Extremo

Si los equipos pertenecen en este caso la misma red vlan o red virtual la respuesta de ping es exitosa, pero en este caso como es contrario es erróneo.

15. Ejecute un Ping desde cada PC a los demás. Explique por qué el ping tuvo o no tuvo éxito.

Rpta:/ No se logra ejecutar el ping por que el tiempo de espera es muy corto.

💐 SW-AA				x
Physical	Config	CLI		
			IOS Command Line Interface	
	,			*
SW-AA>pir	ng 190.108	8.99.2		
Type esca Sending S	ape sequer 5, 100-byt	nce to te ICMP	abort. Echos to 190.108.99.2, timeout is 2 seconds:	
Success 1	rate is 60) perce	nt (3/5), round-trip min/avg/max = 0/0/0 ms	
SW-AA> SW-AA>pir	ng 190.108	8.99.3		
Type esca Sending S	ape sequer 5, 100-byt	te ICMP	abort. Echos to 190.108.99.3, timeout is 2 seconds:	
Success 1	rate is 60) perce	nt (3/5), round-trip min/avg/max = 0/0/0 ms	=
SW-AA>				-

Figura 45. Ejecuta ping con switch. SW-BB.

C:\>ping 190.108.30.1 Pinging 190.108.30.1 with 32 bytes of data: Request timed out. Request timed out. Request timed out. Request timed out. Ping statistics for 190.108.30.1: Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

16. Ejecute un Ping desde cada Switch a los demás. Explique por qué el ping tuvo o no tuvo éxito.

Rpta:/ El ping se ejecuta con éxito porque el tiempo de ejecución es de 2 segundos es suficiente para tener una tasa 100% 5/5.



Figura 46. Ejecuta ping con switch. SW-BB.

SW-BB>ping 190.108.99.2

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 190.108.99.2, timeout is 2 seconds: IIIII

Success rate is 100 percent (5/5), round-trip min/avg/max = 0/3/7 ms

SW-BB>ping 190.108.99.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 190.108.99.1, timeout is 2 seconds: !!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

SW-BB> ping 190.108.99.3

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 190.108.99.3, timeout is 2 seconds:

Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

17. Ejecute un Ping desde cada Switch a cada PC. Explique por qué el ping tuvo o no tuvo éxito.

Rpta:/ El ping se ejecuta con éxito porque el tiempo de ejecución es de 2 segundos es suficiente para tener una tasa 100% 5/5.

💐 sw-cc	x
Physical Config CLI	
IOS Command Line Interface	
SW-CC>ping 190.108.99.3	*
Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 190.108.99.3, timeout is 2 seconds: !!!!!	
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/36/165 ms SW-CC>ping 190.108.99.2	
Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 190.108.99.2, timeout is 2 seconds: !!! Success rate is 60 percent (3/5), round-trip min/avg/max = 0/0/0 ms	
SW-CC>pimg 190.108.99.1	
<pre>% Invalid input detected at '^' marker.</pre>	
SW-CC>pimg 190.108.99.1	
% Invalid input detected at '^' marker.	
SW-CC>ping 190.108.99.1	
Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 190.108.99.1, timeout is 2 seconds: !!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms	4
Copy Past	e

Figura 47. Ejecuta ping con switch. SW-CC.

SW-CC>ping 190.108.99.3

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 190.108.99.3, timeout is 2 seconds: !!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 3/36/165 ms

SW-CC>ping 190.108.99.2

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 190.108.99.2, timeout is 2 seconds: ..!!!

Success rate is 60 percent (3/5), round-trip min/avg/max = 0/0/0 ms

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 190.108.99.1, timeout is 2 seconds: !!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms

CONCLUSIONES

En esta prueba de habilidades practicas cisco CCNP, se logró desarrollar los conocimientos adquiridos en el diplomado de profundización cisco CCNP, por lo anterior se establecen la funcionalidad de los comandos detallados pasa a paso, lo cual hemos desarrollado tales como el registro de los procesos de verificacion de conectividad mediante el uso de comandos ping, traceroute, show ip route, entre otros.

Mediante el desarrollo de los escenarios, donde se utiliza el funcionamiento de las VLANs las cuales son compuertas lógicas de dispositivos donde nos permite administrar los swichest implementamos los protocolos VTP para su importante administración de cada Swicht y llevar cada ip a su respectivo pc.

Nos brinda los conocimientos prácticos y teóricos, en la utilización de herramientas como el software Packet Tracer, que permite entender mejor las redes y los protocolos de enrutamiento. Por lo cual se adquieren habilidades fundamentales para el análisis, en solución de fallas y desarrollo de proyectos de redes de comunicación.

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