DIPLOMADO DE PROFUNDIZACION CISCO PRUEBA DE HABILIDADES PRACTICAS CCNP

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UNIVERSIDAD NACIONAL ABIERTA Y A DISTANCIA - UNAD ESCUELA DE CIENCIAS BÁSICAS, TECNOLOGÍA E INGENIERÍA - ECBTI INGENIERÍA ELECTRONICA BUCARAMANGA 2020. DIPLOMADO DE PROFUNDIZACION CISCO PRUEBA DE HABILIDADES PRÁCTICAS CCNP

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NOTA DE ACEPTACION

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Firma del jurado

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Bucaramanga 18 de abril de 2020

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Dedico esta página a Dios que es mi guía para el desarrollo de todas mis metas y objetivos en la vida, además quiero agradecer a mi familia que son personas incondicionales.

Quiero aprovechar la oportunidad para agradecer también a la universidad quien me ha brindado la oportunidad de crecer no solo profesionalmente sino también personalmente, me ha ofrecido el apoyo necesario para cumplir todas mis metas y poder terminar mi pregrado.

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GLOSARIO

CISCO CCNP: La Certificación Cisco Certified Network Professional (CCNP) te aprueba la habilidad para planificar, implementar, verificar y resolver problemas de redes locales. De igual forma te permite trabajar en colaboración con especialistas en soluciones avanzadas de seguridad, voz, Wireless y video.

Digitization: Migrar del mundo físico al digital. Esto incluye no solamente documentos y procesos de negocio, sino el negocio en sí: mostrar y vender productos en una tienda en línea, tener el historial de sus clientes en tiempo real, ofrecer servicios en Internet.

EIGRP: es una versión mejorada de IGRP. La tecnología de vector de igual distancia que se usa en IGRP también se emplea en EIGRP. Además, la información de la distancia subyacente no presenta cambios

CONECTIVIDAD: Es la capacidad de establecer una conexión: una comunicación, un vínculo. El concepto suele aludir a la disponibilidad que tiene de un dispositivo para ser conectado a otro o a una red.

IGRP utiliza la tecnología de ruteo del vector de distancia. El concepto es que cada Router no necesita conocer todas las relaciones del Router/del link para toda la red. Cada Router anuncia destinos con una distancia correspondiente. Cada Router que escucha la información ajusta la distancia y la propaga a los Routers vecinos.

SWITCH: El switch es uno de los componentes fundamentales en el desarrollo de Internet. Funciona como lo hacían los conmutadores telefónicos: recibe paquetes de datos y los direcciona al destinatario correcto.

VTP: Se emplea para centralizar en un solo switch la administración de VLANS

VLAN: Red de área local virtual, hace referencia a una red de área local enlazada de manera lógica (no física) Enrutamiento

ACCESS POINT: Es un dispositivo que habilita la conexión inalámbrica. El módem que le ofrece su proveedor de Internet, es un Access Point.

PROTOCOLOS DE ENRUTAMIENTO: Conjunto de reglas utilizadas por el Router cuando se comunica con otro Router con el fin de compartir información y tablas de enrutamiento.

SERVER: Un servidor es una computadora con altos niveles de almacenamiento y procesamiento. En él, las organizaciones instalan y ejecutan sistemas y servicios como los de facturación, recursos humanos y aplicaciones de colaboración.

PACKET TRACER: es un software desarrollado por cisco que permite la simulación de redes.

ROUTER: Los switches conectan los dispositivos en una red, y los Routers conectan diferentes redes. Son dispositivos que crean los caminos para que viajen los datos y eligen las mejores rutas para que la información se transmita de forma rápida y segura.

RESUMEN

En el presente proyecto encontraremos el desarrollo de dos escenarios planteados para la prueba de habilidades prácticas de diplomado de profundización CISCO CCNP, con el fin y propósito de poner en práctica cada una de las actividades desarrolladas en el curso, y afianzar nuestro conocimiento.

El escenario 1 es una red para una empresa de confecciones que 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.

Y en el escenario 2 es una red para empresa de comunicaciones, presenta una estructura Core acorde a la topología de red, 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, etherchannels, VLANs y demás aspectos que forman parte del escenario propuesto.

PALABRAS CLAVE: Red, CCNP, Vlans, Cisco, conectividad, Switch, Router, enrutamiento, EBGP, VTP, Escenarios, Packet Tracer

ABSTRACT

In this project we will find the development of two scenarios proposed for the practical skills test of the CISCO CCNP deepening diploma, with the purpose and purpose of putting into practice each of the activities developed in the course, and strengthening our knowledge.

Scenario 1 is a network for a clothing company that has three branches distributed in the cities of Bogotá, Medellín and Bucaramanga, where the student will be the administrator of the network, which must configure and interconnect each of the devices that are part of the scenario, according to the established guidelines for IP addressing, routing protocols and other aspects that are part of the network topology.

And in scenario 2 it is a network for a communications company, it presents a Core structure according to the network topology, where the student will be the administrator of the network, which must configure and interconnect each of the devices that form part of the scenario, according to the established guidelines for

IP addressing, etherchannels, VLANs and other aspects that are part of the proposed scenario.

KEY WORDS: Network, CCNP, Vlans, Cisco, connectivity, Switch, Router, routing, EBGP, VTP, Scenarios, Packet Tracer.

INTRODUCCION

En el siguiente documento se encuentran desarrollados los dos escenarios planteados en la guía de habilidades prácticas del curso de profundización CISCO CCNP.

En el escenario 1 se trabajó en una red para una empresa de confecciones posee tres sucursales, se instalará los debidos equipos y enrutamientos necesarios para que esta funcione de acuerdo a el número de sedes trabajadas, y en el escenario 2 se trabajó en una red una empresa de comunicaciones presenta una estructura Core acorde a la topología de red, se instalará las medidas y dispositivos necesarios para que la red trabaje ejemplarmente.

1. DESARROLLO

1.1. Prueba de habilidades - Escenario 1

Una empresa de confecciones 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.

1.1.1. Topología de red 1



Ilustración 1. Topología de red E1



Ilustración 2. Topología de red E1 Software Packet Tracer

Configurar la topología de red, de acuerdo con las siguientes especificaciones.

Parte 1: Configuración del escenario propuesto

1. Configurar las interfaces con las direcciones IPv4 e IPv6 que se muestran en la topología de red.

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Ilustración 3. R1: Configuración

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Ilustración 4. R2: Configuración

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Ilustración 5. R3: Configuración

2. Ajustar el ancho de banda a 128 kbps sobre cada uno de los enlaces seriales ubicados en R1, R2, y R3 y ajustar la velocidad de reloj de las conexiones de DCE según sea apropiado.

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Ilustración 6. R1: Ajuste de banda

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Ilustración 7. R2: Ajuste de banda

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Ilustración 8. R3: Ajuste de banda

3. En R2 y R3 configurar las familias de direcciones OSPFv3 para IPv4 e IPv6. Utilice el identificador de enrutamiento 2.2.2.2 en R2 y 3.3.3.3 en R3 para ambas familias de direcciones.

USP The second Line			
ID'S Command En	le internace		1
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Building configuration			
Ba#conf t			
Enter configuration commands, one per	line. End with CNTL/3.		
R2(config): ipv6 unicast-routing			
R2(config) #router capf			
& Incomplete command.			
R2 (config) #router capf 3			
R2 (config-router) #exit			
R2(config) #router capfv			
A invalid input detected at market			
30 (config) \$router espfy 3			
+			
5 Invalid input detected at ''' marker			
R2 (config) #router capf 1			
R2[config-router) frough			
R2(config-router) #roue			
R2(config-router) frou			
R2(config-router) #router~id 2.2.2.2			
R2(config-router) #exit			
R2(config)#ipv6 router capf 1			
R2(config-rtr)#router-1d 2.2.2.2			
32 (config-rtr) #			~
		-	

Ilustración 9. R2: Configuración de direcciones OSPFv3

Physical Config CLI Attributes			
IOS Command Line Interface			
			1
R3>ENA			
R3#CONF T			
Enter configuration commands, one per line. End with CNTL/	Ζ.		
R3(config) #router ospf 1			
R3(config-router) #rout			
R3(config-router)#router-1d 3.3.3.3			
R3(config-router)#pass			
R3 (config-router)#passive-interface g0/0			
RS (config-fouter) #exit			
A The routing pot enabled			
S If the fourthy hot enabled			
A The routing not enabled			
R3(config) #ipvo			
R3(config) #ipv			
R3 (config) #ipv6 un			
R3(config)#ipv6 unicast-routing			
R3(config)#ipv6 router ospf 1			
R3(config-rtr)#router			
R3(config-rtr)#router-id 3.3.3.3			
R3(config-rtr)#pas			
R3(config-rtr)#passive-interface g0/0			
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Ilustración 10. R2: Configuración de direcciones OSPF

4. En R2, configurar la interfaz F0/0 en el área 1 de OSPF y la conexión serial entre R2 y R3 en OSPF área 0.



Ilustración 11. R2: Configuración de la interfaz F0/0

5. En R3, configurar la interfaz F0/0 y la conexión serial entre R2 y R3 en OSPF área 0.

R3	_		>
Physical Config CLI Attributes			
IOS Command Line Interface			
R3(config-if) #ospf l ipv6 area l			>
% Invalid input detected at '^' marker.			
R3(config-if)#ospf 1			
S Invalid input detected at '^' marker.			
R3(config-if) #os			
R3(config-if)#os			
R3(config-if)#os			
R3(config-if)#exit			
R3(config) #rou			
R3(config) #router ospf 1			
R3(config-router) #router			
R3(config-router)#router-id 3.3.3.3			
R3(config-router)#network 192.168.9.4 255.255.255.252	area 0.		
% Invalid input detected at '^' marker.			
R3(config-router)#netwo 192.168.9.4 255.255.255.252 ar	ea 0.		
% Invalid input detected at '^' marker.			
R3(config-router)#netwo 192.168.9.4 255.255.255.252 ar	ea 0		
R3(config-router)#netwo 192.168.3.0 255.255.255.0 area	0		
R3(config-router)#exit			
R3(config)#			>
Ctrl+F6 to exit CLI focus	Сору	Paste	

🗌 Тор

Ilustración 12. R3: Configuración de la interfaz F0/0

6. Configurar el área 1 como un área totalmente Stubby.

	CT3 POLICIUS		
	IDS Command Line Interface		
Fress RETURN to .	get started.		^
R3>ena R3Fecní t Farat configurat	ion commands, one per line. E	ad with CWTL/2.	
R2 (config) froute R2 (config-router R2 (config-router	r Gapt 1 #area 1 no #area 1 s		
A2 (config) fronts A2 (config) fronts A3 (config-ronter A2 (config-ronter A2 (config-ronter A2 (config-ronter A2 (config-ronter A3 (config) fipvd A3 (config-rtr) far A2 (config-rtr) far A2 (config-rtr) far	r capt 1 Sarea 1 no Ifarea 1 s Ifarea 1 stub no Ifarea 1 stub no-summary Ifaria 1 stub no-summary router capt 1 rea 1 stub no-summary mit		\$

Ilustración 13. R2: Configuración en A

7. Propagar rutas por defecto de IPv4 y IPv6 en R3 al interior del dominio OSPFv3. Nota: Es importante tener en cuenta que una ruta por defecto es diferente a la definición de rutas estáticas.

		\times
Physical Config CLI Attributes		
IOS Command Line Interface		
<pre>R3 (config-if) #os R3 (config-if) #os R3 (config-if) #rout R3 (config) #router ospf 1 R3 (config) #router) #router-id 3.3.3.3 R3 (config-router) #router-id 3.3.3.3 R3 (config-router) #network 192.168.9.4 255.255.255.252 area 0. * Invalid input detected at '^' marker. R3 (config-router) #netwo 192.168.9.4 255.255.255.252 area 0. * Invalid input detected at '^' marker. R3 (config-router) #netwo 192.168.9.4 255.255.255.252 area 0. * Invalid input detected at '^' marker. R3 (config-router) #netwo 192.168.3.0 255.255.255.252 area 0 R3 (config-router) #netwo 192.168.3.0 255.255.255.0 area 0 R3 (config-router) #exit R3 (config) #ROUTER OSFF 1 R3 (config) #ROUTER OSFF 1 R3 (config) #ROUTER OSFF 1 R3 (config-router) #default-information o R3 (config-router) #default-information originate R3 (config) #ipv6 routospf 1 * Ambiguous command: "ipv6 rou ospf 1" R3 (config-rtr) #default-information originate R3 (conf</pre>		Â
Ctrl+F6 to exit CLI focus Copy	Paste	

Ilustración 14. R3: Configuración de ru

 Realizar la configuración del protocolo EIGRP para IPv4 como IPv6. Configurar la interfaz F0/0 de R1 y la conexión entre R1 y R2 para EIGRP con el sistema autónomo 101. Asegúrese de que el resumen automático está desactivado.

🥐 R1	_		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>N1-SEA R1#COMF T Enter configuration commands, one per line. End with CM R1(config) #router wigep 101 R1(config-router) #netw 193.168.9.0 0.0.0.3 R1(config-router) #netw 193.168.110.0 0.0.0.368 R1(config-router) #sigep route R1(config-router) #sigep router-id 1.1.1.1 R1(config) #ipv% router eigep 101 % IPv% routing not enabled R1(config) #ipv% router eigep 101 R1(config) #</pre>	PTL/Z.	Paste	<
Ilustración 15. R1: configuración del protoco	olo El(GRP	

9. Configurar las interfaces pasivas para EIGRP según sea apropiado.

IDS Command Line Intern	ace	
RI (config-router) #exit		
R1(config)#ipv6 router eigrp 101		
IPv6 routing not enabled		
R1(config)#		
R1(config)#ipv6 unicast-routing		
Hilconfig) #ipve router eigrp 101		
Al(coning rts) #eigsp router id 1.1.1.1		
AL (CONING-ICE) #CHIC		
Di (confignif) dese		
Bl. (config-if) inactive.		
R1(config-if) doassive-interface		
Invalid input detected at '-' marker.		
RL(config-if)#exit		
R1(config)#pas		
R1 (config) #pass		
R1(config)#passi		
RL(config)#passive-interface g0/0		
energia en la companya de la company		
* invalid imput detected at marker.		
Ri(config) fronter eigrp 101		
Ri(config=router)#pass		
sticoniig-router(#passive-interface gu/)		
R1 (config fourer) pears		
AL (CONTIG) 4		

Ilustración 16. R1: Configuración de las interfaces EIGRP

10. En R2, configurar la redistribución mutua entre OSPF y EIGRP para IPv4 e IPv6. Asignar métricas apropiadas cuando sea necesario.



Ilustración 17. R2: Configuración entre OSPF y EIGRP

11. En R2, de hacer publicidad de la ruta 192.168.3.0/24 a R1 mediante una lista de distribución y ACL.

Physical Config CLI Attributes		
IOS Command Line Interface		
R2 con0 is now available		
Press RETURN to get started.		
R2>ENA R2#CONF T Enter configuration commands, one per line. End w R2(config)#access-list 1 deny 152.160.3.0 0.0.0.25 R2(config)#access-list 1 permit any P2(config)#access-list 1 permit any	ith CNTL/2.	

Ilustración 18. R2: Publicidad de la rut

Parte 2: Verificar conectividad de red y control de la trayectoria.

a) Registrar las tablas de enrutamiento en cada uno de los Routers, acorde con los parámetros de configuración establecidos en el escenario propuesto.

🥐 R1	_		\sim
Physical Config CLI Attributes			
IOS Command Line Interface			
Codes: L - local, C - connected, S - static, R - RIP, M -	mobil	- n -	\sim
BGP			
D - EIGRP, EX - EIGRP AMBERNAL, D - OSPF, IA - OSP NI - OSPF NSSA external type 1, N2 - OSPF NSSA ext E1 - OSPF external type 1, E2 - OSPF external type i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2,	2, E	r area type 2 - ECP IS-IS	
inter area		P	
P - periodic downloaded static route			
Gateway of last resort is not set			
192.168.5.0/24 is variably subnetted, 2 subnets, 2 m C 192.168.5.0/30 is directly connected, Serial0/0/0 L 192.168.5.1/32 is directly connected, Serial0/0/0	asks		
R1>show ip protocols			
<pre>Routing Protocol is "eigrp 101 - Outgoing update filter list for all interfaces is not a not start the start of the start of the start of the start Redistributing: eigrp 101 Filter accepted from incoming updates Redistributing: eigrp 101 Bifter accepted from incoming updates Redistributing: eigrp 101 Bifter accepted form incoming updates Distance: internal 90 external 170 Maximum Path: 4 Maximum Loopeone 1 Bifter accepted form 100 Bifter acce</pre>			
Automatic Summarization: disabled			
Maximum path: 4			
Routing for Networks:			
192.168.110.0			
Passive Interface(s):			
Bouting Information Sources:			
Gateway Distance Last Opdate			
Distance: internal 90 external 170			~
Ctri+F8 to exit CLI focus Copy		Paste	
Top			

Ilustración 19. R1: Enrutamiento

<pre>bhysical Config C1 Attributes</pre>						
DS Command Line Interface Context, 1 - local, C - connected, S - statur, R - RIP, N - mobile, B - D - ElGDP EX - SIGDP conternal, O - OSPF ISA external type 3 i - ISOF MSSA external type 1, E1 - OSPF inter area i - ISOF MSSA external type 1, E1 - ISOF external type 3, I - ZSS i - ISOF MSSA external type 1, L = ISOF OSPF ISA external type 3 i - ISOF MSSA external type 1, L = ISOF OSPF ISA external type 3 i - ISOF MSSA external type 1, L = ISOF OSPF ISA external type 3 i - ISOF MSSA external type 1, L = ISOF OSPF ISA external type 3 i - ISOF MSSA external type 1, L = ISOF OSPF ISA external type 3 i - ISOF OSSA external type 1, L = ISOF OSPF ISA external type 3 i - ISOF OSSA external type 1, L = ISOF OSSA Sateway of last resort is not set 152.160.5.0/24 is variably submetted, 4 submets, 2 masks C 152.160.5.0/24 is variably submetted, 4 submets, 2 masks C 152.160.5.0/24 is variably connected, Settal0/0/0 I 152.160.5.0/24 is directly connected, Settal0/0/1 Rifehow ip protocols Souting Frotocol is "cigrp 1 " Outgoing update filter list for all Interfaces is not set Intering update filter list for all Interfaces is not set Intering update filter list for all Interfaces is not set Intering update filter list for all Interfaces is not set Intering update filter list for all Interfaces is not set Intering update filter list for set list Default networks flagged in outgoing updates Default networks flagged in outgoing updates Default networks flagged in outgoing updates Default networks flagged in Souteenel 170 Marinem into i isole0.2.1 Automatic summering isof external 100 Maximum metric variance 1 Automatic Summaring isof external 170 Maximum path. 4 Zouting for Mexoretx: SSE 226 227 226 227 228 228 228 228 229 229 229 220 220 220 220 220	hysice	Attributes				
<pre>Service L = local, C = connected, S = static, R = RIP, M = mobils, B = BOP D = EIGND, EX = EIGND external, 0 = 06DP, IA = 05DF inter area NI = 05DF MSSA external type 1, E2 = 05DF MSSA external type 2, E = 25D SI = 05DF MSSA external type 1, E2 = 05DF MSSA external type 2, E = 25D inter area = condicate default, U = per-user static route, o = 0DR D = periodic downloaded static route Gateway of last resort is not set = 152.160.5.0/24 is variably subnetted, 4 submets, 2 masks c = 152.160.5.0/30 is directly connected, Section/0/0 i = 152.160.5.0/30 is directly connected, Section/0/0/1 i = 152.160.5.0/30 is directly connected, Section/0/0 i = 152.160.5.0/30 is directly connected, Section/0/0 Native contex flagged in outgoing updates Default networks flagged in outgoing updates Redistributing: elegra 1. copf 1 i = 152.160.5.0/30 external 170 Maximum metric variance 1 Automatic address summariation: Maximum metric variance 1 Automatic summarization: Maximum path 4 Routing for Metworks: S24 S24 S24 S25 S24 S25 S25 S25 S25 S25 S25 S25 S25 S25 S25</pre>		IOS Command Line Interface				
<pre>BGF D - EIGNP, EX - EIGRP external, 0 - 0GPF, IA - 0SFF inter area HI - 0GPF wStA external type 1, HI - 0SFF WStA external type 3 I - 1F HS, 11 - 1F HS level-1, LI - 1F HS level-2, 14 - 15 HS inter area periodic downloaded static routs Gateway of last resort is not set 152.160.5.0/24 is variably subnetted, 4 submets, 2 masks C 152.160.5.0/24 is directly connected, Serial0/0/0 153.160.5.0/24 is directly connected, Serial0/0/0 153.160.5.0/26 is directly connected, serial0/0/1 153.160.5.0/26 is directly connecting updates Reducting update filter list for all interface is not set Tetal tetus networks accepted from incoming updates Reducting teta diagon is directly directed is not set NSF-aware route hold timer is 340 NSF-aware route hold timer is 340 Nationum path: 4 Nationum path: 4 Nationum hopecount 100 Nazionum is summarization: Mathematic Summarization: National for Networks: NSF 204 204 204 204 204 204 205 205 205 205 205 205 205 205</pre>	Coder	s: L - local. C - connected. S - statur. R	- BIP. M	and and		
<pre>D - EIGNP, EX - EIGNP external, 0 - OSPF, LA - OSPF inter area NI - OSPF MSSA external type 1, E2 - OSPF MSSA external type 2, 2 - E22 I - OSPF external type 1, E2 - OSPF MSSA external type 3, 2 - E22 I - Condidate default, T - per-user static route, c - ODA D - periodic downloaded extic rout Sateway of last resort is not set 192.168.5.0/24 is variably submetted. 4 submets, 2 maak 192.168.5.0/24 is variably submetted. 5 submets, 1 submet, 1 submet,</pre>	BGP					
<pre>SIL - OSDF MSSA external type 1, M2 - OSDF MSSA external type 3</pre>		D - EIGRP, EX - EIGRP external, O - OSP	F. IL - OSFF	1100	er area	
<pre>E1 - 00FF external type 1, E2 - 00FF external type 2, E - E3P inter a contribute default, U - per-user static route, c = 0DR F - periodic downloaded static route Gateway of last resort is not set 152.168.5.0/24 is variably submetted. 4 submets 2 masks (152.168.5.0/24 is variably submetted. 5 minit/0/0 1 152.168.5.4/30 is directly connected. Serial0/0/0 1 152.168.5.4/30 is directly connected. Serial0/0/0 1 152.168.5.6/32 is directly connected. Serial0/0/0 1 152.168.5.7 0 cutool 1 color 1</pre>		NI - OSDF NSSA external type 1, N2 - 05	DF MSSA exter	Lem	type 2	
<pre>1 - 18-18, 11 - 18-18 level-1, L2 - 18-18 level-2, 18 - 18-18</pre>		E1 - OSPF external type 1, E2 - OSPF ex	ternal type :	, E	- EGP	
<pre>inter area</pre>		1 - IS-IS, L1 - IS-IS level-1, L2 - IS-	IS level-2, 3		IS-IS	
<pre>p - construct downloaded static route p - periodic downloaded static route Stevay of last resort is not set</pre>	inter	r area		-		
<pre>Stevey of last resort is not set 152.160.5.0/24 is variably submetted, 4 submets, 2 masks 152.160.5.0/30 is directly connected, Serial0/0/0 192.160.5.0/30 is directly connected, Serial0/0/1 192.160.5.0/30 is directly connected, Serial0/0/1 2015 and the serial series of the series of t</pre>		- candidate default, 5 - per-user sta	tic route, o	- 01	1.44	
Gateway of last resort is not set 152.160.5.0/24 is variably subnetted, 4 subnets, 2 masks 152.160.5.0/30 is directly connected, Serial0/0/0 1 152.160.5.0/30 is directly connected, Serial0/0/1 152.160.5.0/30 is directly connected, Serial0/0/1 152.160.5.0/3		- periodic downloaded static forte				
192.160.5.0/24 is variably submetted, 4 submets, 2 marks 1 192.160.5.0/30 is directly connected, Serial0/0/0 1 192.160.5.0/30 is directly connected, Serial0/0/1 1 192.160.5.4/30 is directly connected, Serial0/0/1 1 192.160.5.4/30 is directly connected, Serial0/0/1 Elfshow up protocols Bouting Protocol is "clgrp 1 " Outgoing update filter list for all interfaces is not set Intering update filter list for all interfaces is not set Default networks flagged in nungeing updates Redult networks flagged in nungeing updates Redult networks flagged from incoming updates Redult networks flagged in Second 11 Elgebridy 2 protocol for AS(1) Matrix wight Ki-1, KI-0, KE-1, K4-0, K5-0 NSF-aware route hold timer is 340 Notive Timer 3 min Dative Timer 3 min Automatic summarization: disabled Automatic Summarization: disabled Automatic Summarization: disabled Automatic Summarization: disabled Mutomatic Summariz	Gates	way of last resort is not set				
C 152.160.5.0/30 is directly connected, Seri-10/0/0 1 192.160.5.0/30 is directly connected, Serial0/0/0 C 193.165.5.4/30 is directly connected, Serial0/0/1 192.165.5.6/32 is directly connected, Serial0/0/1 Rifehow ip protocol Bouting Protocol is "eigrp 1" Outgoing update filter list for all interfaces is not set Intening update filter list for all interfaces is not set Default networks accepted from incoming updates Default networks accepted from incoming updates Notific outped for is a set income		192.168.9.0/24 is variably submetted, 4 s	obnets, 2 mag	2.5		
L 192140.53/32 is directly connected. Serial0/0/0 C 192146.54/30 is directly connected. Serial0/0/1 E 192146.54/30 is directly connected. Serial0/0/1 E25thow up protocol E20thog Protocol is "elgrp 1 " Outgoing update filter list for all interfaces is not set Intering update filter list for all interfaces is not set Default networks flagged in outgoing updates Default networks flagged in outgoing updates Default networks flagged in Subconing updates Default networks is subconing in Subconing updates NSF-aware route hold timer is 340 Notive Timer is min Default networks is 90 external 170 Maximum path: 4 Zouting for Networks: Subconstic Submarization: disabled Automatic address Submarization: Subconstic Submarization: disabled Mutomatic Address Submarization: Subconstic Submarization: Subconstic Subconstic Submarization: Subconstic Submarization: Subbox Subconst	C	152.168.5.0/30 is directly connected,	Serial0/0/0			
C 193.168.5.4/30 is directly connected. Serial0/0/1 193.168.5.4/30 is directly connected. Serial0/0/1 Rifehow ip protocole Bouting Protocol is "eigrp 1 " Outgoing update filter list for all interfaces is not set Incoming update filter list for all interfaces is not set Default networks accepted from incoming updates Default networks accepted from incoming updates Notoerrip 192.168.3.1 Distance: internal 90 external 170 Maximum path: 4 Nutomatic address summarisation: Maximum path: 4 Default oddress summarisation: Default oddress summarisation: Default oddress	1.	192.160 5.2/33 is directly connected,	Serial0/0/0			
<pre>L 193.148.5.5/33 is directly connected, Serial0/0/1 Elifehow up protocol* Ending Protocol* Cotoping update filter list for all interfaces is not set Incoming update filter list for all interfaces is not set Default networks tlagged in outgoing updates Default networks tlagged from incoming updates Default networks flagged in outgoing in the flagged in outgoing in the flagged in the flagge</pre>	C	193.168.9.4/30 is directly connected,	Ser1a10/0/1			
<pre>R2#show ip protocols Recting Frotocols Recting Frotocols Recting update filter list for all interfaces is not set Introming update filter list for all interfaces is not set Default networks accepted from incoming updates Recting the set of the set</pre>	-	192.168.9.6732 is directly connected.	Serial0/0/1			
Restring Protocol is "elgyp 1 " Outdoing update filts for all interfaces is not set Default networks flagged in outgoing updates Default networks accepted from incoming updates Redistributing: elgrp 1, cospf 1 EIGRD-IDv4 Protocol for AS(1) Matrix weight Ki-1, KI=0, KN=1, K4=0, K5=0 NSF-aware route hold timer is 340 Router-ID: 192.186.3.1 T Active Timer: 3 min Distance: internal 90 external 170 Maximum path: 4 Maximum nopcount 100 Maximum setric variance 1 Automatic addmerization: disabled Automatic addmerization: disabled Reating for Networks: R2# R2# R2# R2# R2# R2# R2# R2#	82#+3	now ip protocol.				
Automatic Summarization: disables Automatic address summarization: Meximum path: 4 Routing for Networks: R2# R2# R2# R2# R2#	Det Det Rec ZIO	fault networks flagged in outgoing updates fault networks accepted from incoming updates listributing: elgrp 1, cepf 1 mpr-TPV4 Protocol for Ad(1) mpr-TPV4 Protocol for Ad(1) mpr-TPV4 Protocol for Ad(1) more avare route hold timer is 340 Mouter-TD: 152.168.3.1 Popology : 0 (base) Active Timer: 3 min Distance: internal 90 external 170 Maximum path: 4 Maximum hopcount 100 Maximum metric veriance 1	tes			
Automatic address summarization: Maximum path: 4 Routing for Networks: R2# R2# R2# R2# R2# R2# R2# R2#		comatic Summarization: disabled				
Maximum path: 4 Routing for Networks: R2# R2# R2# R2# R2# R2#	Aut	comatic address summarisation:				
Routing for Networks: R3# R3# R3# R3# R3# R3# R3# R3#	Aut	dimensional distances of the second s				
R3# R2# R2# R3# R3# R3#F6 to exit CLI focus Copy Paste	Aut Aut Mas					
R2# R2# R2# S2# 3/#+P6 to exit CLI focus Copy Paste	Aut Aut Has Ros	iting for Networks:				
N2# R2# R2# M+F6 to exit CLI focus Copy Paste	Aut Aut Mas Ros	uting for Networks:				
23# 3/1+F6 to exit CLI focus Copy Paste	Aut Aut Mas Rot R2# R2#	uting for Networks:				
3rl+F6 to exit CLI focus Copy Paste	Aut Aut Mas Rot R2# R2#	uting for Networke:				
Ctrl+F6 to exit CLI focus Eopy Paste	Aut Aut Mas Ros Ros Ros Ros Ros Ros Ros Ros Ros Ro	uting for Networks:				
	Aut Aut Mas Rot R2# R2# R2# R2# R2#	uting for Networks:				

Ilustración 20. R2: Enrutamiento 24



Ilustración 21. R2: Enrutamiento

b) Verificar comunicación entre Routers mediante el comando ping y traceroute





Ilustración 22.R1: Comprobando comunicación

c) Verificar que las rutas filtradas no están presentes en las tablas de enrutamiento de los Routers correctas.

Physical	Config CLI	Attributes					
		IOS Co	mmand Line Interf	ace			
Success	rate is 0 per	cent (0/5)					
Rl#ping	192.168.9.6						
Type es Sending	cape sequence 5, 100-byte 1	to abort. CMP Echos	to 192.168.9	.6, timeo	ut is 2	second	
Success	rate is 0 per	cent (0/5)	• · · · · · · · · · · · · · · · · · · ·				
R1#ping	192.168.3.1						
Type es Sending	cape sequence 5, 100-byte 3	to abort. ICMP Echos	to 192.168.3	.l, timeo	ut is 2	second	s:
Success	rate is 0 per	cent (0/5)					
R1#ping	2001:db8:acad	1:110::1					
Type es Sending seconds	cape sequence 5, 100-byte] :	to abort. ICMP Echos	to 2001:db8:	acad:110:	:l, time	out is	2
Success	rate is 0 per	cent (0/5)					
Rl#ping	2001:db8:acad	1:90::1					
Type es Sending seconds	cape sequence 5, 100-byte] :	to abort. ICMP Echos	to 2001:db8:	acad:90::	l, timeo	ut is	2
Success	rate is 100 p	percent (5)	(5), round-tr	ip min/av	g/max =	2/4/10	ms
R1#ping	2001:db8:acad	1:90::2					
Type es Sending seconds	cape sequence 5, 100-byte] :	to abort. ICMP Echos	to 2001:db8:	acad:90::	2, timeo	ut is	2
Success	rate is 100 p	percent (5,	(5), round-tr	ip min/av	g/max =	1/2/6	ms
R1#							
Ctrl+F6 to e	xit CLI focus				Сору	P	aste

Ilustración 23. R2: Comprobacione

1.1.2. ESCENARIO COMANDOS 1

router#ena router#conf t Enter configuration commands, one per line. End with CNTL/Z. router(config)#host R1 R1(config)#int g0/0 R1(config-if)#ip add 192.168.110.1 255.255.255.0 R1(config-if)#ipv6 add 2001:DB8:ACAD:110::1/64 R1(config-if)#NO SHUT R1(config-if)#EXIT R1(config)#INT S0/0/0 R1(config-if)#IP ADD 192.168.9.1 255.255.255.252 R1(config-if)#IPV6 ADD 2001:DB8:ACAD:90::1/64 R1(config-if)#NO SHUT R1(config-if)#EXIT R1(config)#INT S0/0/0 R1(config-if)#CLOC RATE 64000 R1(config-if)#BAND 128 R1(config-if)#EXIT R1(config)#ROUTER EIGRP 101 R1(config-router)#NETW 192.168.9.0 0.0.0.3

R1(config-router)#NETW 192.168.110.0 0.0.255

R1(config-router)#EIGRP ROUTE

% Incomplete command.

R1(config-router)#eigrp router-id 1.1.1.1

R1(config-router)#exi

R1(config)#ipv6 router eigrp 101

R1(config-rtr)#eigrp router-id 1.1.1.1

R1(config-rtr)#exit

R1(config)#int g0/0

R1(config-if)#pass

R1(config-if)#passive

R1(config-if)#passive-interface

۸

% Invalid input detected at '^' marker.

R1(config-if)#passive-interfaceexit

۸

% Invalid input detected at '^' marker.

R1(config-if)#exit

R1(config)#router eigrp 101

R1(config-router)#pass

R1(config-router)#passive-interface g0/0

R1(config-router)#exit

R1(config)#

R1#SHOW IP ROU

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2 E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area * - candidate default, U - per-user static route, o - ODR P - periodic downloaded static route

Gateway of last resort is not set

192.168.9.0/24 is variably subnetted, 2 subnets, 2 masks C 192.168.9.0/30 is directly connected, Serial0/0/0 L 192.168.9.1/32 is directly connected, Serial0/0/0

R1#PING 192.168.110.1

Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 192.168.110.1, timeout is 2 seconds: Success rate is 0 percent (0/5)

R1#PING 192.168.9.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.9.1, timeout is 2 seconds: !!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 2/3/5 ms

ROUTER 2

ROUTER#CONF T Enter configuration commands, one per line. End with CNTL/Z. ROUTER(config)#HOSTNA R2 R2(config)#INT G0/0 R2(config-if)#IP ADD 192.168.2.1 255.255.255.0

R2(config-if)#IPV6 ADD 2001:DB8:ACAD:B::1/64

R2(config-if)#NO SHUT

R2(config-if)#EXIT

R2(config)#INT S0/0/0

R2(config-if)#IP ADD 192.168.9.2 255.255.255.252

R2(config-if)#IPV6 ADD 2001:DB8:ACAD:90::2/64

R2(config-if)#NO SHUT

R2(config-if)#EXIT

R2(config)#INT S0/0/1

R2(config-if)#IP ADD 192.168.9.5 255.255.255.252

R2(config-if)#IPV6 ADD 2001:DB8:ACAD:91::1/64

R2(config-if)#NO SHUT

R2(config-if)#EXIT

R2(config)#INT S0/0/0

R2(config-if)#BAND 128

R2(config-if)#EXIT

R2(config)#INT S0/0/1

R2(config-if)#BAND 128

R2(config-if)#CLOCK RAT 64000

R2(config-if)#EXIT

R2(config)#ROUTER OSPF 3

R2(config-router)#EXIT

R2(config)#ROUTER OSPF 1

R2(config-router)#ROUITER-ID 2.2.2.2

۸

% Invalid input detected at '^' marker.

R2(config-router)#ROUTER-ID 2.2.2.2

R2(config-router)#EXIT

R2(config)#IPV6 ROUTER OSPF 1

R2(config-rtr)#ROUTER-ID 2.2.2.2

R2(config-rtr)#EXIT

R2(config)#ROUTER OSPF 1

R2(config-router)#ROUTER-ID 2.2.2.2

R2(config-router)#NET 192.168.9.0 255.255.255.252 AREA 0

R2(config-router)#NET 192.168.110.0 255.255.255.0 AREA 0

R2(config-router)#EXIT

R2(config)#ROUTER OSPF 1

R2(config-router)#AREA 1 STUB NO-SUMMA

R2(config-router)#EXIT

R2(config)#IPV6 ROUTER OSPF 1

R2(config-rtr)#AREA 1 STUB NO-SUMM

R2(config-rtr)#EXIT

R2(config)#ROUTER OSPF 1

R2(config-router)#REDISTRIBUTE EIGRP 101 SUBN

R2(config-router)#EXIT

R2(config)#ROUTER EIGRP 1

R2(config-router)#REDISTRIBUTE OSPF 1 METRIC 10000 100 255 1 1500

R2(config-router)#EXIT

R2(config)#ROUTER EIGRP 101

R2(config-router)#REDISTRIBUTE OSPF 1 METRIC 10000 100 255 1 1500

R2(config-router)#EXI

R2(config)#IPV6 ROUTER EIGRP 101

R2(config-rtr)#REDISTRIBUTE OSPF 1 METRIC 10000 100 255 1 1500

R2(config-rtr)#EXIT

R2(config)#ACCESS-LIST 1 DENY 192.168.3.0 0.0.0.255

R2(config)#ACCESS-LIST 1 PERMIT ANY

R2(config)#EXIT

R2#

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

R2#SHOW IP ROUT

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP

D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area

N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2

- E1 OSPF external type 1, E2 OSPF external type 2, E EGP
- i IS-IS, L1 IS-IS level-1, L2 IS-IS level-2, ia IS-IS inter area
- * candidate default, U per-user static route, o ODR
- P periodic downloaded static route

Gateway of last resort is not set

192.168.9.0/24 is variably subnetted, 4 subnets, 2 masks
C 192.168.9.0/30 is directly connected, Serial0/0/0
L 192.168.9.2/32 is directly connected, Serial0/0/0
C 192.168.9.4/30 is directly connected, Serial0/0/1
L 192.168.9.5/32 is directly connected, Serial0/0/1

R2#SHOW IP PROTOCOL

Routing Protocol is "eigrp 1" Outgoing update filter list for all interfaces is not set Incoming update filter list for all interfaces is not set Default networks flagged in outgoing updates Default networks accepted from incoming updates Redistributing: eigrp 1, ospf 1 EIGRP-IPv4 Protocol for AS(1) Metric weight K1=1, K2=0, K3=1, K4=0, K5=0 NSF-aware route hold timer is 240 Router-ID: 192.168.2.1 Topology : 0 (base) Active Timer: 3 min Distance: internal 90 external 170 Maximum path: 4 Maximum hopcount 100 Maximum metric variance 1

Automatic Summarization: disabled Automatic address summarization: Maximum path: 4 Routing for Networks: Routing Information Sources:

ROUTER 3 router#conf t

Enter configuration commands, one per line. End with CNTL/Z. router(config)#int g0/0 router(config-if)#ip add 192.168.3.1 255.255.255.0 router(config-if)#ipv6 add 2001:DB8:ACAD:C::1/64 router(config-if)#NO SHUT router(config-if)#EXIT router(config)#HOST R3 R3(config)#INT S0/0/1 R3(config-if)#IP ADD 192.168.9.6 255.255.255.252

R3(config-if)#IPV6 ADD 2001:DB8:ACAD:91::2/64

R3(config-if)#N SHUT

R3(config-if)#EXIT

R3(config)#INT S0/0/1

R3(config-if)#BAND 128

R3(config-if)#EXIT

R3(config)#ROUTER OSPF 1

R3(config-router)#ROUTER-ID 3.3.3.3

R3(config-router)#PASSIVE-IN G0/0

R3(config-router)#EXIT

R3(config)#IPV6 ROUTER OSPF 1

R3(config-rtr)#ROUTER-ID 3.3.3.3

R3(config-rtr)#PASSIVE-IN G0/0

R3(config-rtr)#EXIT

R3(config)#ROUTER OSPF 1

R3(config-router)#ROUTER-ID 3.3.3.3

R3(config-router)#NET 192.168.9.4 255.255.255.252 AREA 0

R3(config-router)#NET 192.168.3.0 255.255.255.0 AREA 0

R3(config-router)#EXIT

R3(config)#ROUTER OSPF 1

R3(config-router)#DEFAUL

R3(config-router)#DEFAULt-information ORIGI

R3(config-router)#EXIT

R3(config)#IPV6 ROUTER OSPF 1

R3(config-rtr)#DEFAULt-information ORIGI

R3(config-rtr)#EXIT

R3(config)#

SHOW IP ROUTE

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP

D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area

N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2

E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP

- i IS-IS, L1 IS-IS level-1, L2 IS-IS level-2, ia IS-IS inter area
- * candidate default, U per-user static route, o ODR
- P periodic downloaded static route

Gateway of last resort is not set

192.168.9.0/24 is variably subnetted, 2 subnets, 2 masks C 192.168.9.4/30 is directly connected, Serial0/0/1 L 192.168.9.6/32 is directly connected, Serial0/0/1

R3#SHOW IP PROTOCO

Routing Protocol is "ospf 1" Outgoing update filter list for all interfaces is not set Incoming update filter list for all interfaces is not set Router ID 3.3.3.3 Number of areas in this router is 1. 1 normal 0 stub 0 nssa Maximum path: 4 Routing for Networks: 192.168.9.4 0.0.0.3 area 0 192.168.3.0 0.0.0.255 area 0 Passive Interface(s): GigabitEthernet0/0 Routing Information Sources: Gateway Distance Last Update 3.3.3.3 110 00:28:52 Distance: (default is 110
1.2. Prueba de Habilidades - Escenario 2

Una empresa de comunicaciones presenta una estructura Core acorde a la topología de red, 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, etherchannels, VLANs y demás aspectos que forman parte del escenario propuesto.





Ilustración 24. Topología de Red E2



Ilustración 25. Topología de red E2 Software Packet Tracer

Parte 1: Configurar la red de acuerdo con las especificaciones.

a) Apagar todas las interfaces en cada switch.

P DLS1	—		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>%LINK-5-CHANGED: Interface FastEthernet0/10, chang administratively down</pre>	ged state to	×	^
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Fa changed state to down</pre>	astEthernet(/10,	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/11, chang administratively down</pre>	ged state to	•	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Fa changed state to down</pre>	astEthernet(/11,	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/12, chang administratively down</pre>	ged state to	,	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Fa changed state to down</pre>	astEthernet(/12,	
<pre>DLS1(config-if-range)#int range f0/1-24, g0/1-2 DLS1(config-if-range)#shutdown</pre>			
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/1, cha administratively down</pre>	anged state	to	
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/2, cha administratively down DLS1 (config-if-range)#</pre>	anged state	to	~
Ctrl+F6 to exit CLI focus	Сору	Paste	

Ilustración 26. Switch DLS1: Apagando interfaces

R DLS2 — E	ı ×
Physical Config CLI Attributes	
IOS Command Line Interface	
Would you like to enter the initial configuration dialog? [yes/no]	- N ^
would you find to chose one intotal configuration dratog. (jes, no)	
Press RETURN to get started!	
Switch>	
Switch-EQNE TE	
Enter configuration commands, one per line. End with CNTL/Z.	
Switch(config) #int rang f0/1-24, g0/1	
Switch(config-if-range)#shutdown	
\$LINK-5-CHANGED: Interface FastEthernet0/1, changed state to	
administratively down	
*LINK-5-CHANGED: Interface FastEthernet0/2, changed state to	
administratively down	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to</pre>	
administratively down	
\$LINK-5-CHANGED: Interface FastEthernet0/4, changed state to	
administratively down	
administratively down	~
Ctrl+F6 to exit CLI focus Copy P	aste
ц юр	

Ilustración 27. Switch DLS2: Apagando interfaces

R ALS1 —		\times
Physical Config CLI Attributes		
IOS Command Line Interface		
Switch>ENA Switch=CONF T Enter configuration commands, one per line. End with CNTL/Z. Switch(config)#INT RANG F0/1-24, G0/1-2 Switch(config)#INT RANG F0/1-25, G0/1-25 Switch(config)#INT RANG F0/1-25, G0/1-25 Switch(config)#INT RANG F0/1-25 Switch(config)#INT RAN	Paste	~
П Тор		



R ALS2 -		\times
Physical Config CLI Attributes		
IOS Command Line Interface		
<pre>Switch>ENA Switch#CONF TE Enter configuration commands, one per line. End with CNTL/2. Switch(config)#INT RANGE F0/1-24, G0/1-2 Switch(config-if-range)#SHUTD</pre>		^
<pre>%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to administratively down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to administratively down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to administratively down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to administratively down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to administratively down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to</pre>		~
Ctrl+F6 to exit CLI focus Copy	Paste	
П Тор		

Ilustración 29. Switch ALS2: Apagando interfaces

b) Asignar un nombre a cada switch acorde al escenario establecido.



Ilustración 30. Switch DLS1: Establecido un nombre

VP DLS2 —		\times
Physical Config CLI Attributes		
IOS Command Line Interface		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down</pre>		^
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down</pre>		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to down</pre>		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down</pre>		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to down</pre>		
<pre>Switch(config-if-range)#INT G0/2 Switch(config-if)#SHUT</pre>		
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to administratively down Switch(config-if)#</pre>		
Switch(config-if)# Switch(config-if)#EXIT Switch(config)#HOST DLS2		
DLS2(config)#		~
Ctrl+F6 to exit CLI focus Copy	Paste	

Ilustración 31. Switch DLS2: Establecido un nombre

RALS1 —		\times
Physical Config CLI Attributes		
IOS Command Line Interface		
		<u>^</u>
administratively down		
%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to		
administratively down		
\$LINK-5-CHANGED. Interface FactEthernet()/21 changed state to		
administratively down		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to</pre>		
administratively down		
*LINK-5-CHANGED: Interface FastEthernet0/23, changed state to		
administratively down		
%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to		
administratively down		
-		
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to</pre>		
administratively down		
administratively down		
Switch (config-if-range)#		_
Switch (config-if-range) #		
Switch(config-if-range) #EXIT		
Switch(config) #HOST ALS1		
ALS1(config)#		\sim
Ctrl+F6 to exit CLI focus Copy	Paste	
-		

Ilustración 32. Switch ALS1: Establecido un nombre

	\times
Physical Config CLI Attributes	
IOS Command Line Interface	
	~
<pre>%LINK-5-CHANGED: Interface FastEthernet0/19, changed state to administratively down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/20, changed state to administratively down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/21, changed state to administratively down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/22, changed state to administratively down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/23, changed state to administratively down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to administratively down</pre>	
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to administratively down</pre>	
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed state to administratively down Switch(config-if-range)# Switch(config-if-range)#EXIT Switch(config)#HOST ALS2 ALS2(config)#</pre>	~
Ctrl+F6 to exit CLI focus Copy Paste	
🗌 Тор	

Ilustración 33. Switch ALS2: Establecido un nombre

- c) Configurar los puertos troncales y Port-channels tal como se muestra en el diagrama.
- 1. La conexión entre DLS1 y DLS2 será un EtherChannel capa-3 utilizando LACP. Para DLS1 se utilizará la dirección IP 10.12.12.1/30 y para DLS2 utilizará 10.12.12.2/30.



Ilustración 34. Switch DLS1: Realizando Conexión

P DLS2	_		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state administratively down</pre>	to		^
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEther changed state to down</pre>	net0/8		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/9, changed state administratively down</pre>	to		
\$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEther changed state to down	net0/9		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/10, changed stat administratively down</pre>	e to		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEther changed state to down</pre>	net0/1	ο,	
Switch(config-if-range)#INT G0/2 Switch(config-if)#SHUT			
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed st administratively down Switch(config-if)# Switch(config-if)# Switch(config-if)#EXIT Switch(config)#HOST DLS2 DLS2(config)#</pre>	ate to		~
Ctrl+F6 to exit CLI focus Copy	Y	Paste	
] Тор			

Ilustración 35. Switch DLS2: Realizando Conexión

3. Los Port-channels en las interfaces Fa0/7 y Fa0/8 utilizarán LACP.

R DLS1	—		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>\$LINK-5-CHANGED: Interface FastEthernet0/12, changed stat DLS1(config-if-range)# DLS1(config-if-range)# \$LINK-5-CHANGED: Interface FastEthernet0/11, changed stat</pre>	te to d	iown 1p	^
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthe changed state to up</pre>	rnet0/1	11,	
%LINK-5-CHANGED: Interface FastEthernet0/12, changed stat	te to i	чр	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthe changed state to up</pre>	rnet0/1	12,	
%LINK-5-CHANGED: Interface Port-channel2, changed state	to up		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-chan changed state to up</pre>	nnel2,		
DLS1(config-if-range)#EXIT DLS1(config)#int rang f0/7-8 DLS1(config-if-range)#channel-protocol lacp DLS1(config-if-range)#channel-group 2 mode active DLS1(config-if-range)#no shut			
%LINK-5-CHANGED: Interface FastEthernet0/7, changed state	e to do	own	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state DLS1(config-if-range)#</pre>	e to do	own	~
Ctrl+F6 to exit CLI focus Cop	У	Paste	•
Тор			

Ilustración 36. Switch DLS1: Configuración de los Port-channels en las interfaces Fa0/7 y Fa0/8 utilizará LACP

₹ DLS2 — □ >	<
Physical Config CLI Attributes	
IOS Command Line Interface	
▲	
DLS2(config-if-range)# %LINK-5-CHANGED: Interface FastEthernet0/11, changed state to up	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/11, changed state to up</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to up</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/12, changed state to up</pre>	
<pre>%LINK-5-CHANGED: Interface Port-channel2, changed state to up</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up</pre>	
DLS2(config-if-range)#EXIT DLS2(config)#INT RANGE F0/7-8 DLS2(config-if-range)#CHANNEL-PROTOCOL LACP DLS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIVE DLS2(config-if-range)#NO SHUT	
%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to down	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to down DLS2(config-if-range)# </pre>	
Ctrl+F6 to exit CLI focus Copy Paste	
Тор	

Ilustración 37. Switch DLS1: Configuración de los Port-channels en las interfaces Fa0/7 y Fa0/8 utilizará LA

ALS1	_		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>\$LINK-5-CHANGED: Interface FastEthernet0/19, changed state administratively down</pre>	to		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/20, changed state administratively down</pre>	to		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/21, changed state administratively down</pre>	to		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/22, changed state administratively down</pre>	to		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/23, changed state administratively down</pre>	to		
<pre>%LINK-5-CHANGED: Interface FastEthernet0/24, changed state administratively down</pre>	to		
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed sta administratively down</pre>	te to		
<pre>%LINK-5-CHANGED: Interface GigabitEthernet0/2, changed sta administratively down Switch(config-if-range)# Switch(config-if-range)# Switch(config-if-range)# Switch(config)#HOST ALS1 ALS1(config)#</pre>	ite to		~
Ctrl+F6 to exit CLI focus Copy		Paste	

llustración 38. Switch ALS1: Configuración de los Port-channels en las interfaces Fa0/7 y Fa0/8 utilizará LACP

R ALS2 - C	×
Physical Config CLI Attributes	
IOS Command Line Interface	
<pre>IOS Command Line Interface ALS2>ENA ALS2#CONF TER Enter configuration commands, one per line. End with CNTL/2. ALS2(config)#INT RANG F0/7-8 ALS2(config)#INT RANG F0/7-8 ALS2(config-if-range)#CHANNEL-PROTOCOL LACP ALS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIVE ALS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIVE ALS2(config-if-range)# Creating a port-channel interface Port-channel 2 ALS2(config-if-range)#NO SHUT ALS2(config-if-range)# %LINEFROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up ALS2(config-if-range)#</pre>	~
Ctrl+F6 to exit CLI focus Copy Pi	iste
Тор	

Ilustración 39. Switch ALS1: Configuración de los Port-channels en las interfaces Fa0/7 y Fa0/8 utilizará

4. Los Port-channels en las interfaces F0/9 y fa0/10 utilizará PAgP.

R DLS1 — 🗆	\times
Physical Config CLI Attributes	
IOS Command Line Interface	
DLS1(config-if-range)#channel-group 2 mode active DLS1(config-if-range)#no shut	^
%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to down	
<pre>\$LINK-5-CHANGED: Interface FastEthernet0/8, changed state to down DLS1(config-if-range)# \$LINK-5-CHANGED: Interface FastEthernet0/7, changed state to up</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to up</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up</pre>	
DLS1(config-if-range)#EXIT DLS1(config)#INT RANGE F0/9-10 DLS1(config-if-range)#CHANNEL-PROTOCOL PAGP DLS1(config-if-range)#CHANNEL-GROUP 2 MODE DESIRABLE DLS1(config-if-range)#NO SHUT	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to down DLS1(config-if-range)# DLS1(config-if-range)#</pre>	~
Ctrl+F6 to exit CLI focus Copy Paste	
Птор	

Ilustración 40. Switch DLS1: Configuración de los Port-channels en las interfaces F0/9 y fa0/10 utilizará PAgP

🖲 DLS2 — 🗆	\times
Physical Config CLI Attributes	
IOS Command Line Interface	
DLS2(config-if-range)#CHANNEL-PROTOCOL LACP DLS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIVE DLS2(config-if-range)#NO SHUT	^
<pre>%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to down DLS2(config-if-range)# %LINK-5-CHANGED: Interface FastEthernet0/7, changed state to up</pre>	
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to up</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up</pre>	
DLS2(config-if-range)#EXIT DLS2(config)#INT RANG F0/9-10 DLS2(config-if-range)#CHANNEL-PROTOCOL PAGP DLS2(config-if-range)#CHANNEL-GROUP 2 MODE DESIRABLE DLS2(config-if-range)#NO SHUT	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to down</pre>	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to down DLS2(config-if-range)#</pre>	~
Ctrl+F6 to exit CLI focus Copy Paste	•
П Тор	

Ilustración 41. Switch DLS1: Configuración de los Port-channels en las interfaces F0/9 y fa0/10 utilizará PAgP



Ilustración 42. Switch ALS1: Configuración de los Port-channels en las interfaces F0/9 y fa0/10 utilizará PAgP

R ALS2	_		\times
Physical Config CLI Attributes			
IOS Command Line Interface			_
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEther changed state to up</pre>	rnet0/7	1.	^
<pre>%LINK-5-CHANGED: Interface FastEthernet0/8, changed state</pre>	e to up	>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEther changed state to up</pre>	rnet0/8		
ALS2(config-if-range)#EXIT ALS2(config)#int rang F0/5-10 ALS2(config-if-range)#CHANNEL-PROTOCOL PAGP ALS2(config-if-range)#CHANNEL-GROUP 2 MODE DESIRABLE ALS2(config-if-range)#NO SHUT			
ALS2(config-if-range)# %LINK-5-CHANGED: Interface FastEthernet0/9, changed state	e to up	\$	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEther changed state to up</pre>	rnet0/9	••	
<pre>%LINK-5-CHANGED: Interface FastEthernet0/10, changed stat</pre>	te to u	ıp	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEther changed state to up</pre>	rnet0/1	.0,	
ALS2(config-if-range)#			\sim
Ctrl+F6 to exit CLI focus Cop	У	Paste	
Тор			

Ilustración 43. Switch ALS1: Configuración de los Port-channels en las interfaces F0/9 y fa0/10 utilizará PAgP

 Todos los puertos troncales serán asignados a la VLAN 800 como la VLAN nativa.



Ilustración 44. Switch DLS1: Asignación

DLS1	_		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-chann changed state to down</pre>	el2,		^
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to down</pre>	et0/12		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to up</pre>	et0/12		
DLS1(config-if-range)# %LINK-5-CHANGED: Interface Port-channel2, changed state to	up		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-chann changed state to up</pre>	el2,		
DLS1(config-if-range)#switchport trunk native vlan 800 DLS1(config-if-range)#switchport mode trunk DLS1(config-if-range)#			
\$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to down	et0/7,		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to up</pre>	et0/7,		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to down</pre>	et0/7,		~
Ctrl+F6 to exit CLI focus Copy		Paste	
🗌 Тор			

Ilustración 45. Switch DLS1: Asignación

₹ DLS2 — □	\times
Physical Config <u>CLI</u> Attributes	
IOS Command Line Interface	
DLS2(config)#INT RAN F0/7-12 DLS2(config-if-range)#SWITCHPORT TRUNK ENCAP DOT1Q DLS2(config-if-range)# %LINEPROT0-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down	^
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/7 is not compatible with Fa0/11 and will be suspended (trunk encap of Fa0/7 is auto, Fa0/11 is dotlq)</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/7 is not compatible with Fa0/12 and will be suspended (trunk encap of Fa0/7 is auto, Fa0/12 is dotlq)</pre>	
\$EC-5-CANNOT_BUNDLE2: Fa0/7 is not compatible with Fa0/8 and will be suspended (trunk encap of Fa0/7 is auto, Fa0/8 is dotlq)	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/7 is not compatible with Fa0/9 and will be suspended (trunk encap of Fa0/7 is auto, Fa0/9 is dotlq)</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/7 is not compatible with Fa0/10 and will be suspended (trunk encap of Fa0/7 is auto, Fa0/10 is dotlq)</pre>	
<pre>\$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/8 is not compatible with Fa0/11 and will be suspended (trunk encap of Fa0/8 is auto, Fa0/11 is dot1q)</pre>	
%EC-5-CANNOT_BUNDLE2: Fa0/8 is not compatible with Fa0/12 and will be	~
Ctrl+F6 to exit CLI focus Copy Paste	
🗌 Тор	

Ilustración 46. Switch DLS2: Asignación

🔻 DLS2 – 🗆	\times
Physical Config CLI Attributes	
IOS Command Line Interface	
<pre>DLS2(config-if-range)#SWITCHPORT TRUNK NATIVE VLAN 800 DLS2(config-if-range)#SWITCHPORT MODE TRUNK DLS2(config-if-range)# %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down</pre>	^
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/7 is not compatible with Po2 and will be suspended (native vlan of Fa0/7 is 800, Po2 id 1)</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/8 is not compatible with Po2 and will be suspended (native vlan of Fa0/8 is 800, Po2 id 1)</pre>	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9,</pre>	~
Ctrl+F6 to exit CLI focus Copy Paste	;
П Тор	

Ilustración 47. Switch DLS2: Asignación



Ilustración 48.Switch DLS2: Asignación

R ALS1 –	-		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
ALSI(CONFIG-II-Fange)#Switchpoit trunk encap dotig			
S Invalid input detected at '^' marker.			^
ALS1(config-if-range)#switchport trunk encap dotlq			
<pre>% Invalid input detected at '^' marker.</pre>			
ALS1(config-if-range) #switchport trunk encap dot1 %CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/8 (1), with DLS1 FastEthernet0/7 (800).	i on		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/7 (1), with DLS1 FastEthernet0/7 (800).</pre>	lon		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/8 (1), with DLS1 FastEthernet0/8 (800).</pre>	ion		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/7 (1), with D ALS1(config-if-range)#exit</pre>	ion		
ALS1(config)#int range f0/7-10			
ALS1(config-if-range)#switchport trunk encap dotlq			
% Invalid input detected at '^' marker.			
ALS1(config-if-range)#switchport trunk native vlan 800 ALS1(config-if-range)#switchport mode trunk			~
Ctrl+F6 to exit CLI focus Copy		Paste	
Тор			

Ilustración 49. Switch ALS1: Asignación



Ilustración 50. Switch ALS1: Asignación

R ALS2 -			\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/8 (1), with DLS2 FastEthernet0/8 (800).</pre>	on		^
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/10 (1), with DLS1 FastEthernet0/10 (800).</pre>	on		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/9 (1), with DLS1 FastEthernet0/9 (800).</pre>	on		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/9 (1), with DLS1 FastEthernet0/9 (800).</pre>	on		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/10 (1), with DLS1 FastEthernet0/10 (800).</pre>	on		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/7 (1), with DLS2 FastEthernet0/7 (800).</pre>	on		
<pre>%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered FastEthernet0/8 (1), with DLS2 FastEthernet0/8 (800).</pre>	on		
ALS2>ENA ALS2#CONF TER Enter configuration commands, one per line. End with CNTL/2 ALS2(config)#int ran f0/7-10 ALS2(config-if-range)#	-		~
Ctrl+F6 to exit CLI focus Copy		Paste	
Пор			

Ilustración 51. Switch ALS2: Asignación



Ilustración 52. Switch ALS2: Asignación

R ALS2 —		<
Physical Config CLI Attributes		
IOS Command Line Interface		
changed state to up	^	
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up</pre>		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up</pre>		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up</pre>		
ALS2(config-if-range) #switchport mode trunk ALS2(config-if-range) #		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down</pre>		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up</pre>		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down</pre>		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up</pre>		
ALS2(config-if-range) #switchport nonegotiate ALS2(config-if-range) #no shut ALS2(config-if-range) #	~	
Ctrl+F6 to exit CLI focus Copy	Paste	ĺ
П Тор		

Ilustración 53. Switch ALS2: Asignación

- d) Configurar DLS1, ALS1, y ALS2 para utilizar VTP versión 3
- 1. Utilizar el nombre de dominio UNAD con la contraseña cisco123



Ilustración 54. Switch DLS1: Configuración de Nombre y dominio

2. Configurar DLS1 como servidor principal para las VLAN.

💘 DLS1 —		\times
Physical Config CLI Attributes		
IOS Command Line Interface		
Setting device VLAN database password to ciscol23 DLS1(config)#VTP VERSION 3		^
% Invalid input detected at '^' marker.		
DLS1(config) #vtp version 3		
% Invalid input detected at '^' marker.		
DLS1 (config) #vt		
DLS1(config) #vtp ?		
domain Set the name of the VTP administrative domain.		
mode Configure VTP device mode		
password Set the password for the VTP administrative domain		
version Set the adminstrative domain to VTP version		
DLS1(config) #vtp version		
% Incomplete command.		
DLS1(config) #vtp version 2		
DLS1(config) #vtp mode server mst		
~		
% Invalid input detected at '^' marker.		
DLS1(config) #vtp mode server ?		
<cr></cr>		
DLS1(config) #vtp mode server		
DLS1(config) #vtp mode server		
DLSI(config) #vtp mode server		
Device mode already VIP SERVER.		+
Ctrl+F6 to exit CLI focus Copy	Paste	• · · · ·
🛄 Тор		

Ilustración 55. Switch DLS1: Configuración del servidor

3. Configurar ALS1 y ALS2 como clientes VTP.

·₹ ALS1 —		\times
Physical Config CLI Attributes		
IOS Command Line Interface		
		^
AT CINENTA		
ALSI CONF TE		
Enter configuration commands, one per line. End with CNTL/Z.		
ALSI(Config)#spanning-tree mode mst		
% Invalid input detected at '^' marker.		
ALS1(config) #vtp vers 2		
ALS1 (config) #vtp mode cl		
ALS1(config) #vtp mode client mst		
· The state of the		
a invalid input detected at marker.		
ALS1 (config) #vtp mode client		
ALSI(config)#		\sim
Ctri+E6 to exit CLI focue	Daeta	
Copy	Tuste	
Тор		

Ilustración 56. Switch ALS1: Configuración ALS1 como clientes VTP

ALS2	—		>
Physical Config CLI Attributes			
IOS Command Line Interface			
			>
Press RETURN to get started.			
ALS2>ENA			
Enter configuration commands, one per line. End with CNTL	/Z.		
ALS2(config)#VTP VERSI 2 VTP mode already in V2.			
ALS2(config) #VTP MODE CLIEN Setting device to VTP CLIENT mode.			
ALS2 (config) #			\sim
Ctrl+F6 to exit CLI focus Copy		Paste	
] Тор			

Ilustración 57. Switch ALS2: Configuración ALS1 como clientes VTP.

e) Configurar en el servidor principal las siguientes VLAN:

Número de VLAN	Nombre de VLAN	Número de VLAN	Nombre de VLAN
800	NATIVA	434	ESTACIONAMIENTO
12	EJECUTIVOS	123	MANTENIMIENTO
234	HUESPEDES	1010	VOZ
1111	VIDEONET	3456	ADMINISTRACIÓN

Tabla 1. Configuración en el servidor principal las siguientes VLAN

R DLS1	—		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>VLAN_CREATE_FAIL: Failed to create VLANs llll : extended allowed in current VTP mode DLS1(config) #vlan llll VLAN_CREATE_FAIL: Failed to create VLANs llll : extended allowed in current VTP mode DLS1(config) #vlan lll DLS1(config-vlan) #name VIDEONET DLS1(config-vlan) #EXIT DLS1(config) #vlan123 * Invalid input detected at '^' marker. DLS1(config) #vlan123 DLS1(config-vlan) #name MANTENIMIENTO DLS1(config-vlan) #pame MANTENIMIENTO DLS1(config-vlan) #EXIT</pre>	ULAN(s)	not	^
DLS1(config) #VLAN 1010 VLAN_CREATE_FAIL: Failed to create VLANs 1010 : extended allowed in current VTP mode DLS1(config) #VLAN 101 DLS1(config-vlan) #name VOZ DLS1(config) #vlan 3456 VLAN_CREATE_FAIL: Failed to create VLANs 3456 : extended allowed in current VTP mode DLS1(config) #vlan 345 DLS1(config) #vlan 345 DLS1(config-vlan) #name ADMINISTRACION DLS1(config-vlan) #EXIT DLS1(config) # Ctrl+F6 to exit CLI focus Co	VLAN(s)	not not Paste	~
Птор			

Ilustración 58. Switch DLS1: Configuración del servidor principal

f) En DLS1, suspender la VLAN 434.





DEST	—		
Physical Config CLI Attributes			
IOS Command Line Interface			
allowed in surrent UTD mode			~
DLS1 (config) #VLAN 101			
DLS1(config-vlan)#name_VOZ			
DLS1 (config-vlan) #exit			
DLS1 (config) #vlan 3456			
VLAN CREATE FAIL: Failed to create VLANs 3456 : ex	tended VLAN(s) not	
allowed in current VTP mode			
DLS1(config)#vlan 345			
DLS1(config-vlan)#name ADMINISTRACION			
DLS1(config-vlan)#EXIT			
DLS1(config)#vlan 434			
DLS1(config-vlan)#name ESTACIONAMIENTO			
DLS1(config-vlan)#state suspend			
~			
% Invalid input detected at '^' marker.			
DLS1(config-vlan)#s			
DLS1(config-vlan)#sta			
DLS1(config-vlan)#state ?			
S Unrecognized command			
DLS1(config-vlan)#exit			
DLS1(config)#vlan 434			
DLS1(config-vlan) #state suspend			
% Invalid input detected at '^' marker.			
DLS1(config-vlan)#vlan 434			
DLS1(config-vlan)#state suspend			\sim
Ctrl+F6 to exit CLI focus	Сору	Paste	•

Ilustración 60. Switch DLS1: Suspender la VLAN 434

g) Configurar DLS2 en modo VTP transparente VTP utilizando VTP versión 2, y configurar en DLS2 las mismas VLAN que en DLS1.



Ilustración 61.Switch DLS2: Configuración DLS2 en modo VT

h) Suspender VLAN 434 en DLS2.

Physical Config CLI At	ttributes						
	IOS C	ommand Line In	terface				
							~
DLS2 (config-vlan) #name	NATIVA						
DLS2 (config) #wlap 12							
DLS2 (config-ylan) #name 1	RIECHT	VOS					
DLS2 (config-ylan) #exit	2020011						
DLS2(config)#vlan 234							
DLS2(config-vlan)#name	HUESPED	ES					
DLS2(config-vlan)#exit							
DLS2(config) #vlan 1111							
DLS2(config-vlan)#111							
~							
§ Invalid input detected	d at '^	' marker.					
DLS2(config-vlan)#exit							
DLS2(config)#vlan lll							
DLS2(config-vlan)#name '	VIDEONE	т					
DLS2(config-vlan)#exit							
DLS2(config)#vlan 123							
DLS2 (config-vian) #name I	MANTENI	MIENTO					
DLS2 (config-Vian) #exit							
DLS2 (config-wlan) frame	V07						
DLS2 (config-ylan) #evit	002						
DLS2 (config) #vlan 345							
DLS2(config-vlan)#name	ADMINIS	TRACION					
DLS2(config-vlan) #exit							
DLS2 (config) #							~
				-			
Ctrl+F6 to exit CLI focus				Cop	У	Paste	*

Ilustración 62. Switch DLS2: Suspendiendo VLAN



Ilustración 63. Switch DLS2: Suspendiendo VLAN

 i) En DLS2, crear VLAN 567 con el nombre de CONTABILIDAD. La VLAN de CONTABILIDAD no podrá estar disponible en cualquier otro Switch de la red.

R DLS2	_		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
			.
DLS2 (config) #vlan 111			\sim
DLS2(config-vian)#name VIDEONEI			
DLS2 (config) fuller 122			
DLS2 (config) #vian iza			
DLS2 (configuran) favit			
DLS2 (config) fular 101			
DLS2 (config.) trame V07			
DLS2 (config vian) favit			
DLS2 (config) #vlan 345			
DLS2 (config-vlan) #name ADMINISTRACION			
DLS2 (config-vlan) #exit			
DLS2 (config) #vlan 800			
DLS2 (config-vlan) #exit			
DLS2 (config) #vlan 434			
DLS2 (config-vlan) #name ESTACIONAMIENTO			
DLS2 (config-vlan) #state suspend			
~			
% Invalid input detected at '^' marker.			
DLS2 (config-vlan) #vlan 567			
DLS2 (config-vlan) #private-vlan isolated			
% Invalid input detected at '^' marker.			
DLS2 (configevlap) thame CONTABLIDAD			
DLS2 (config-ylan) #pr			
DLS2 (config-vlan) #			\sim
Ctrl+F6 to exit CLI focus Co	py	Paste	
— -			

Ilustración 64. Switch DLS2: Se crea el nombre de CONTABILIDAD

j) Configurar DLS1 como Spanning tree root para las VLAN 1, 12, 434, 800, 1010, 1111 y 3456 y como raíz secundaria para las VLAN 123 y 234.

Ø DLS1	—		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
Press RETURN to get started.			
DI Silvera			
DLSI#conf te			
Enter configuration commands, one per line. End with Ch	JTL/Z.		
DLS1(config)#spann			
DLS1(config)#spanning-tree vian 1 root primary DLS1(config)#spanning-tree vian 12 root primary			
DLS1(config) #spanning-tree vlan 434 root primary			
DLS1(config) #spanning-tree vlan 800 root primary			
DLS1(config) #spanning-tree vlan 101 root primary			
DLS1(config) #spanning-tree vlan 123 root primary			
DLS1(config)#spanning-tree vlan 234 root primary			
DLS1(config) #spanning-tree vlan 123 root secondary			
DLS1(config) #spanning-tree vlan 234 root secondary			
DLS1(config)#			\sim
Ctrl+F6 to exit CLI focus Co	ру	Paste	
Тор			

Ilustración 65. Switch DLS1: Configuración como Spanning tree root

k) Configurar DLS2 como Spanning tree root para las VLAN 123 y 234 y como una raíz secundaria para las VLAN 12, 434, 800, 1010, 1111 y 3456.

R DLS2			\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>DLS2(config-vlan)#name ADMINISTRACION DLS2(config-vlan)#exit DLS2(config-vlan)#exit DLS2(config-vlan)#exit DLS2(config-vlan)#state suspend</pre>			
DLS2(config)#spanning-tree vlan 345 root secondary DLS2(config)#			\sim
Ctrl+F6 to exit CLI focus	Сору	Paste	•
Top			

Ilustración 66. Switch DLS2: Configuración como Spanning tree root

 Configurar todos los puertos como troncales de tal forma que solamente las VLAN que se han creado se les permitirá circular a través de éstos puertos.



Ilustración 67. Switch DLS1: Configuración los puertos

R DLS2 - D	\times
Physical Config CLI Attributes	
IOS Command Line Interface	
state to down	~
%EC-5-CANNOT_BUNDLE2: Fa0/12 is not compatible with Po2 and will be suspended (native vlan of Fa0/12 is 800, Po2 id 1)	
DLS2(config-if-range) # switchport trunk native vlan 800 DLS2(config-if-range) #switchport mode trunk	
<pre>%EC-5-CANNOT_BUDLE2: Fa0/7 is not compatible with Po2 and will be suspended (native vlan of Fa0/7 is 800, Po2 id 1)</pre>	
\$EC-5-CANNOT_BUNDLE2: Fa0/8 is not compatible with Po2 and will be suspended (native vlan of Fa0/8 is 800, Po2 id 1)	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/9 is not compatible with Po2 and will be suspended (native vlan of Fa0/9 is 800, Po2 id 1)</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/10 is not compatible with Po2 and will be suspended (native vlan of Fa0/10 is 800, Po2 id 1)</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/11 is not compatible with Po2 and will be suspended (native vlan of Fa0/11 is 800, Po2 id 1)</pre>	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/12 is not compatible with Po2 and will be suspended (native vlan of Fa0/12 is 800, Po2 id 1)</pre>	11
DLS2(config-if-range)#EXIT DLS2(config)#	~
Ctrl+F6 to exit CLI focus Copy Paste	3
🗌 Тор	

Ilustración 68. Switch DLS2: Configuración los puertos



Ilustración 69. Switch ALS1: Configuración los puertos

RLS2	_		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
			<u>^</u>
ALS2>ena ALS2#conf te			
Enter configuration commands, one per line. End with CNTI	/Z.		
ALS2(config-if-range) #switchport trunk native vlan 800			
ALS2(config-if-range) #switchport mode trunk ALS2(config-if-range) #			
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to down</pre>	et0/7,		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to up</pre>	et0/7,		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to down</pre>	et0/8,		
<pre>%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern changed state to up</pre>	et0/8,		~
Ctrl+F6 to exit CLI focus Copy		Paste	
] Тор			

Ilustración 70. Switch ALS1: Configuración los puertos

m) Configurar las siguientes interfaces como puertos de acceso, asignados a las VLAN de la siguiente manera:

Interfaz	DLS1	DLS2	ALS1	ALS2
Interfaz	3456	12 , 1010	123, 1010	234
Fa0/6				
Interfaz	1111	1111	1111	1111
Fa0/15				
Interfaces		5	67	
F0 /16-18				

Tabla 2.	Configuraciones	de las	interfaces	сото	puertos	de	acceso
----------	-----------------	--------	------------	------	---------	----	--------

DLS1	—		\times
Physical Config CLI Attributes			
IOS Command Line Interface			
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/10 is not compatible with Po2 suspended (native vlan of Fa0/10 is 800, Po2 id 1)</pre>	and will	l be	^
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/11 is not compatible with Po2 suspended (native vlan of Fa0/11 is 800, Po2 id 1)</pre>	and will	l be	
<pre>%EC-5-CANNOT_BUNDLE2: Fa0/12 is not compatible with Po2 suspended (native vlan of Fa0/12 is 800, Po2 id 1)</pre>	and will	l be	
DLS1(config-if-range) #EXIT DLS1(config) # interface fastethernet 0/6 DLS1(config-if) #switchport access vlan 3456 % Access VLAN does not exist. Creating vlan 3456 DLS1(config-if) #switchport access vlan 345 DLS1(config-if) #no shut			
<pre>%LINK-5-CHANGED: Interface FastEthernet0/6, changed sta DLS1(config-if)# interface fastethernet 0/15 DLS1(config-if)#switchport access vlan 111</pre>	te to dou	wn	
% Invalid input detected at '^' marker.			
DLS1(config-if)#switchport access vlan lll DLS1(config-if)#no shut			
<pre>%LINK-5-CHANGED: Interface FastEthernet0/15, changed st DLS1(config-if)#</pre>	ate to do	own	~
Ctrl+F6 to exit CLI focus	ору	Paste	
Тор			

Ilustración 71. Switch DLS1: Configuración de interfaces

```
Red DLS2
                                                                                     \times
                                                                             _
  Physical
           Config CLI Attributes
                                   IOS Command Line Interface
   DLS2>ENA
   DLS2#CONF T
   Enter configuration commands, one per line. End with CNTL/2.
   DLS2(config-if)#switchport access vlan 12
DLS2(config-if)#switchport access vlan 12
   DLS2 (config-if) #NO SHUT
   %LINK-5-CHANGED: Interface FastEthernet0/6, changed state to down
   DLS2(config-if)#EXIT
DLS2(config)# interface f0/15
   DLS2(config-if) ##switchport access vlan 111
   S Invalid input detected at '^' marker.
   DLS2(config-if)#switchport access vlan 111
   DLS2(config-if) #NO SHUT
   %LINK-5-CHANGED:
                       Interface FastEthernet0/15, changed state to down
   DLS2(config)# int ran f0/16-18
DLS2(config)# int ran f0/16-18
DLS2(config-if-range)#switchport access vlan 567
DLS2(config-if-range)#NO SHUT
   %LINK-5-CHANGED: Interface FastEthernet0/16, changed state to down
   $LINK-5-CHANGED: Interface FastEthernet0/17, changed state to down
  Ctrl+F6 to exit CLI focus
                                                                      Copy
                                                                                    Paste
🗌 Тор
```

Ilustración 72. Switch DLS2: Configuración de interfaces

```
R ALS1
                                                                                               ×
               Config CLI Attributes
   Physical
                                        IOS Command Line Interface
    ALS1(config-if-range) # switchport trunk encap dotlq
    S Invalid input detected at '^' marker.
   ALS1(config-if-range)# switchport trunk native vlan 800
ALS1(config-if-range)# switchport mode trunk
ALS1(config-if-range)#
$LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
    changed state to down
    $LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7,
    changed state to up
    $LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8,
    changed state to down
    %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8,
    changed state to up
    ALS1(config-if-range)#EXIT
ALS1(config)#interface fastethernet 0/6
ALS1(config-if)#switchport access vlan 123
ALS1(config-if)#switchport access vlan 101
    ALS1 (config-if) #no shut
    $LINK-5-CHANGED: Interface FastEthernet0/6, changed state to down
    ALS1 (config-if) #xit
    % Invalid input detected at '^' marker.
    ALS1 (config-if) #exit
    ALSI(config-if) #switchport access vlan 111
ALSI(config-if) #switchport access vlan 111
ALSI(config-if) #no shut
    %LINK-5-CHANGED: Interface FastEthernet0/15, changed state to down
ALS1(config-if)#
                                                                                Сору
  Ctrl+F6 to exit CLI focus
                                                                                                Paste
П Тор
```

Ilustración 73. Switch ALS1: Configuración de interfaces



Ilustración 74. Switch ALS1: Configuración de interfaces

Parte 2: conectividad de red de prueba y las opciones configuradas.

 a) Verificar la existencia de las VLAN correctas en todos los switches y la asignación de puertos troncales y de acceso

							108.0	Command Line	interface.			
VLAN	Name				Stat	trus Po	643					
1	defeu	1.			acti	ive Po Fe Fe Fe Fe Fe Fe Fe	11, P 0/3, 3 0/14, 0/18, 0/22, 0/22,	014, Fe0/ Fe0/4, Fe Fe0/15, Fe0/15, Fe0/23,	1, Fe0/2 0/5, Fe0 Fe0/10, Fe0/20, Fe0/24,	0/13 Fe0/17 Fe0/21 Gig0/1		
10	402				acto	Linne .						
12	A1050	TINOS			acto	1.108						
54	ADMIN	ISTRACION			acto	Live Fe	0/6					
23	MANTE	NUMBERIO			acts	Linne						
34	NUSSE	2025			acts	1.178						
34	METTY	TOWAHIENTO			acto	1.178						
1002	fddin	default			acto	1110						
003	token	-ring-defeu	1.5		acts	Linne						
1004	fidin	et-default			acto	1.1.148						
1000	121101	-0618010			80003							
LAN	Type	SAID	HTU	Perent	RingNo	BridgeNo	Stp	BrdgNode	Trensl	Trans2		
1	enet	100001	1500	-	-	-	-	-	0	D		
0.1	enet	100010	1500	-	-	-	-	-	0	D		
1	enet	100011	1500	-	-	-	-	-	0	D		
1.2	enet	100012	1800	-	-	-	_	-	0	0		
123	enet	100123	1800	_	_	-	_	_	ě.	0		
234	enet	100234	1500	-	-	-	-	-	ō.	D		
434	enet	100434	1500	-	-	-	-	-	0	D		
0.00	enet	100800	1800	-	-	-	-	-	0	0		
1002	1001	101002	1800	-	-	-	-	-				
1004	diam'r.	101004	1.0.00	_	_			_				

Ilustración 75. Switch DLS1: Verificación la existencia de las VLAN

						IOS Co	time nd	Une interfaces	65						
	See 24	VLAD											^		_
	dame.				1									_3(∞)(3(2 - X
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10	202						M022,	140724.	Wagt fee	Massie					
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44	63.03	- + 2 d			in the local division of the local divisiono	··· •	10.00								
24	AUTO	STORACTOR			100	574									
122	NAME	CONTRACTO:			1.00										
124	ALCOL	arce			20.4	1.26									
33	SATS.	3													
1002	A441-	der terte			200	iner .									
LUNG	Laws.	"Last Tables			ant										
1004	COGAR	at deterit.				114									
1007		-defaults													
فعب	-794	2823	ш	-	444.94	-	s stp	410,2.00	Titles	Tenanc					
1	-	1333312	1972	-	÷	-	-	- X	2						
40		233045	4946	-	-	-			- C	365 - C					
11	1000	-32284	1264						9	9					
14		333312	Here.	0	20. I	3 I	-2.10	15 - S	2	S					
ine.	1000	133364	18CC	1	•	5	-			5					
1.54	8345	33254	I.C.C.		58 P	2		20 8	0	6					
1.47	-	TRACE	1200			-	-		6	ě.,					
eve.		-33000	4955	-	-	÷ .			40	· · · ·					
10.52	D003.	131005	12.64							¥ .					
1002		111002	TREE						0	e					
1004	diam'r	131900	1942	-	· ·	5	- 44.00	CS 9	•						
	terr.		TARE	Sec.	51.0	in the second	abu	Surer?	(* .)	Sec					
-25	700	1915	MIL	Torres	MegCo	A-168-2	a dag	Antipited	Transf	Transi					
	1														
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See.	ese de	conducy Dep	•		Rooms										
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	4												V	S Realthro	O LE S
7.10	k ot 0	Li fecere									Operation	Page 2	2.		
100		2.035													

Ilustración 76. Switch DLS2: Verificación la existencia de las VLAN

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and a		10 (D)	Andreas											
-						55 Command	Unetr	der fanse						
LSI#	CEON 1	tas.											~	
LAN	l'anna				Sec.	Las Ma								
	de des d	-					100	2000 - 201		100				
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	105				ACT:									
	a secur	TINDE			-									
•	ALC: UR	CONTRACTOR!			acres (
20 1	PASTO	CINC INTO					avec.							
	h tradect	CONCLUSION PULL			-									
20 I	FREEW				Act:									
100														
124	100104	C-CREWLER			ACC.									
206		defeale			4.000									
	275.0	20120	arev.	Farmers	Party Pro	Secolys 1.	×	A subplication	Terrer	Teres				
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	C. C. C.	100010	1.000	-	-	-	-	-						
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•	1000	100351	1800	-	-	-	-	-	a	a				
	aret.	100222	1200	-	-	-	-	-	š –	3				
		100435	1000	-	-	-	-	-	ă.	á –				
22	the second second	100833	1800	-	-	-	-	-						
2012 - S 2022 - S	2001	161832	1000	-	-	-		-	2	2				
556 J	diam'r.	101231	1.800	-	-	-	terr	-	š	ă -				
226	Lange L	101036	1800	-	-	-	alone in the	-	2					
194	- 1	42.7D	HTT1	La recent	11 mgHz	Telder De	She	Tedallada	Trees 1	Tree 2				
		VIAN .												
r Lone:	ev Sec	conders Type			Points									
													*	🕒 Realtime) 🧔 San
нно	neal (2	The s								1	Lapy	Har	den .	
•														

Ilustración 77. Switch ALS1: Verificación la existencia de las VLAN

_						C5 3	Communication	d Link interfs	RC .				
					100	e						~	(A) (A)
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							2402						
	VILDO	TAN			-								
4	646.50	11100			445	20.0							
1	STHEFT	TOTES CROME				****							
15	10.11.0	HINCOMO			24.6	1914	19,553						
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274	indu-	decision			-								
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1.64	74-78	<u>en</u>	800	Falsare	atmetic	2et dess	1 220.	Tedetical	a Traral	T-u-u2			
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-		and any Tax			Para								
11,524	t-)												(Realting the line
IH-I	o enal la	i bas									4.40	PAR's	

Ilustración 78. Switch ALS2: Verificación la existencia de las VLAN

b) Verificar que el EtherChannel entre DLS1 y ALS1 está configurado correctamente

Physical	Config CLI	Attributes				
		IOS Co	ommand Line Interface			
DLS1#						^
DLS1#s	ho					
DLSI#s	now et					
DLS1#s	how etherchanne	al summary				
Flags:	D - down	P - in	port-channel			
	I - stand-ald	one s - sus	spended			
	H - Hot-stand	iby (LACP o	only)			
	R - Layer3	S - Lay	yer2			
	U - in use	f - fai	iled to allocate aggregator	-		
	u - unsuitab]	le for bund	ling			
	w - waiting t	to be aggre	egated			
	w - waiting t d - default p	o be aggre ort	egated			
	w - waiting t d - default g	o be aggre port	egated			
Number	w - waiting t d - default p of channel-gro	o be aggre port pups in use	egated			
Number Number	w - waiting t d - default p of channel-gro of aggregators	o be aggre port pups in use	egated ≥: 5 5			
Number Number	<pre>w - waiting t d - default p of channel-gro of aggregators</pre>	o be aggre port pups in use	egated			
Number Number Group	<pre>w - waiting t d - default j of channel-gro of aggregators Port-channel</pre>	be aggre port pups in use s: Protocol	Ports			
Number Number Group +	<pre>w - waiting t d - default y of channel-gro of aggregators Port-channel +</pre>	port port pups in use s: Protocol	Ports			
Number Number Group 	<pre>w - waiting t d - default i of channel-gro of aggregators Port-channel +</pre>	pups in use	Ports			
Number Number Group + 1	<pre>w - waiting t d - default j of channel-gro of aggregators Port-channel </pre>	Dups in use Protocol LACP	Fa0/7(P) Fa0/8(P) Fa0/9(1)	=)		
Number Number Group + 1 4 11	<pre>w - waiting t d - default j of channel-gro of aggregators Port-channel +</pre>	Dups in use Protocol LACP	Fa0/10(P)	D)		
Number Number Group + 1 4 11 12	<pre>w - waiting t d - default j of channel-grc of aggregators Port-channel +</pre>	Dups in use Protocol LACP LACP	Fa0/11(P) Fa0/12(P)	E)		
Number Number + 1 4 11 12 14	<pre>w - waiting t d - default j of channel-gro of aggregators Port-channel +</pre>	LACP	Fa0/11(P) Fa0/12(P)	=)		
Number Number Group + 1 4 11 12 12 14 DLS1#	<pre>w - waiting t d - default f of channel-gro of aggregators Port-channel +</pre>	Dups in use Protocol LACP LACP	Fa0/11(P) Fa0/12(P)	D		~
Number Number Group 1 4 11 12 14 DLS1#	<pre>w - waiting t d - default j of channel-grc of aggregators Port-channel +</pre>	LACP	Fa0/11(P) Fa0/12(P)	5		~
Number Number Group + 1 4 11 12 14 14 DLS1# Ctrl+F6 to	<pre>w - waiting t d - default j of channel-grc of aggregators Port-channel +</pre>	LACP	Fa0/11(P) Fa0/12(P)	r) Y	Paste	>

Ilustración 79. Switch DLS1: Verificación

```
Real ALS1
                                                                                                                     \times
                                                                                                          _
   Physical Config CLI Attributes
                                                  IOS Command Line Interface
      Transl Trans2
                                                                                                                               \sim
         _____
     Remote SPAN VLANs
          _____
     Primary Secondary Type Ports
  ALS1#show
ALS1#show e
ALS1#show etherchannel summ
ALS1#show etherchannel summary
Flags: D - down P - in port-channel
I - stand-alone s - suspended
H - Hot-standby (LACP only)
R - Layer3 S - Layer2
U - in use f - failed to allocate aggregator
u - unsuitable for bundling
w - waiting to be aggregated
d - default port
                                                       Ports
                Port-channel Protocol
    Group
                 _____
                                        _____
                               LACP Fa0/7(P) Fa0/8(P)
PAgP Fa0/9(I) Fa0/10(P)
    Pol(SU)
Po3(SU)
ALS1#
   Ctrl+F6 to exit CLI focus
                                                                                                  Сору
                                                                                                                     Paste
🗌 Тор
```

```
Ilustración 80. Switch DLS1: Verificación
```

c) Verificar la configuración de Spanning tree entre DLS1 o DLS2 para cada VLAN.

			105	Command Line Interface			
DLS145H SPan	ning-tree						
/LAN0001							
Spanning t	ree enabled	protocol .	ieee				
BOOD ID	Priority	34877					
	Address	0001.076	3.1584				
	Hello Time	2	ax Los 20 se	- Tormand Delay 1	5		
Bridge ID	Friority	24677 0	priority 246	76 systidtext 1)			
	Address	0001.076	8.1DA4		-		
	Aging Time	a see M	an nge 30 se	e sorward beray i	6 Sec		
	aging the						
Interface	Role St	Cost	Prio Mor	Type			
5m0/0	Dang 15	4D 15	120.5	22p			
201	Desig Fi	s da	125.28	Sha			
200	Desg Fi	RD 12	128.29	Shi			
T-ANDD10							
Spapping r	ree enabled	protocol	1000				
Root ID	Priority	24506					
	Addsess	0001.076	3.1084				
	Address This bridge	0001.070	3.1084 oot				
	Address This bridge Hello Time	2 sec M	3.10A4 oot ax Age 20 se	c Forward Delay 1	5 240		
Bridge ID	Address This bridge Hello Time Priority	2 sec M 34886 0	3.1DA4 oot ax Age 20 se priority 348	c Forward Delay 1 76 sys-id-cat 10)	5 sec		
Bridge ID	Address This bridge Hello Time Priority Address	2 sec M 24886 0 0001.076	3.1DA4 oot ax Age 20 se priority 348 3.1DA4	c Forward Delay 1 76 sys-id-ext 10)	5 sec		
Bridge ID	Address This bridge Hello Time Priority Address Hello Time	2 sec M 2 sec M 24886 0 0001.076 2 sec M	3.1084 oot ax Age 20 se priority 348 3.1084 ax Age 20 se	c Forward Delay 1 76 sys-id-cat 10) c Forward Delay 1	5 sec		
Bridge ID	Address This bridge Hello Time Priority Address Hello Time Aging Time	0001.070 18 the D 2 sec M 24686 (0001.076 2 sec M 20	3.1084 oot ax Age 20 se priority 348 3.1084 ax Age 20 se	c Forward Delay I 76 sys-id-ext 10) c Forward Delay 1	5 200		
Bridge ID	Address This bridge Hello Time Priority Address Hello Time Aging Time Role St	0001.070 10 the 2 2 sec M 34886 () 0001.076 2 sec M 20	3.1084 oot ax Age 20 se priority 348 3.1084 Ax Age 20 se Frio.5br	c Forward Delay I 76 Sys-id-ext 10) c Forward Delay 1 Type	5 980 5 680		
Bridge ID	Address This bridge Hello Time Priority Address Hello Time Aging Time Role St	0001.070 1 the p 2 sec M 34886 () 0001.076 2 sec M 20 to Cost 15	J.IDA4 pot ax Age 20 se priority 348 8.1DA4 hx Age 20 se <u>Prio.Bbr</u> 132 4	c Forward Delay I 76 sys-10-cmt 10) c Forward Delay 1 Type	5 980 5 880		
Bridge ID Interface Fa0/9 Fa0/10	Address This bridge Hello Time Priority Address Hello Time Aging Time Role St Desg Fi Desg Fi	0001.076 14 the D 2 sec M 34586 () 0001.076 2 sec M 20 15 20 15	J.IDA4 oot ax Age 20 se priority 348 2.IDA4 ax Age 20 se Prio.Bbr 138.5 138.5	<pre>c Perward Delay 1 76 sys-id-cat 10) c Perward Delay 1 Type 78 90 </pre>	5		
Bridge ID Interface Na0/9 Na10 Na1	Address This bridge Hello Time Priority Address Hello Time Aging Time Role St Desg F5 Desg F5 Desg F5	0001.076 14 the p 2 sec M 34586 () 0001.076 2 sec M 20 20 20 20 20 20 20 20 20 20	<pre>3.1DA4 oot ax Age 20 se priority 348 2.1DA4 ax Age 20 se Prio.Dbr 128.5 138.10 138.38</pre>	c Forward Delay 1 76 sys-10-cmt 10) c Forward Delay 1 Type 70p 70p	5 995 5 985		
Bridge ID Interface Rad/S Rad/1D Rad Rad	Address Hhis bridge Heilo Time Priority Address Heila Time Address Heila Time Role St Desg F5 Desg F5 Desg F5	0001.076 14 the p 2 sec M 34586 () 0001.076 2 sec M 20 15 20 15 20 15 20 15 20 12 12 12 12 12 15 12 12 12 12 12 15 15 15 15 12 12 12 15 15 15 15 15 15 15 15 15 15	3.1184 oot ax Age 20 se priority 245 8.1884 hx Age 20 se <u>Prio.55</u> 128.5 128.10 128.38 128.38 128.38	c Forward Delay I 76 sys-10-cat 10) c Forward Delay I Type 70p 80p 80r	5 sec 5 sec		
Reidge ID Interface Fa0/5 Fa0/1D Pa4 VLNHDD11	Address Priority Address Nails Time Address Nails Time Role Si Desg Fi Desg Fi Desg Fi Desg Fi	0001.076 14 the p 2 ave M 34586 () 0001.076 2 ave M 20 15 20 15 20 15 20 15 20 12 15 20 12 15 20 12 12 12 12 15 20 12 15 20 12 15 20 12 15 15 15 15 15 15 15 15 15 15	3.1184 oot mx Age 20 me griority 348 a.1884 ax Age 20 me <u>Prio.5br</u> 138.5 138.10 138.38 128.20	c Forward Delay 1 76 sys-id-cat 10) c Forward Delay 1 Type 76p 76p 76p	5		
Bridge ID Interface Fa0/9 Fa0/10 Fa1 Fa4 VIANDD11 Spenning t	Address This birdge Hello Time Priority Address Hello Time Adjng Time Role St Desp Fi Desp Fi Desp Fi Desp Fi Desp Fi	CCC1.C76 1 the p 2 are M 04586 (0 0601.C76 2 are M 2c the Cost ccst 2 are M 2c the Cost ccst 2 are M 2 are	3.1184 oot ax Age 20 se priority 348 3.1184 hx Age 20 se Prio.55br 128.5 128.5 128.3 128.3 128.3 128.3 128.3	c Forward Delay 1 76 sys-10-cmt 10) c Forward Delay 1 Type POp Shy Shy	5 285 5 460		
Bridge ID Interface Fa0/9 Fa0/10 Pa4 VLANDD11 Spenning t Root ID	Address This bridge Heilo Time Priority Address Heilo Time Role St Role St Desg Fr Desg Fr Desg Fr Desg Fr Desg Fr	0001.070 1 10 the p 2 acc M 34886 (0001.076 2 acc M 20 20 20 20 20 20 20 20 20 20	3.1184 oot mx Ape 20 se priority 348 a.1884 ax Age 20 se <u>Prio.556</u> 128.5 128.5 128.10 128.30 128.30 128.30	c Porward Delay 1 76 sys-id-car 10) c Forward Delay 1 Type 70 80 80 80 80 80 80 80 80 80 80 80 80 80	5		
Reidge ID Interface Fa0/5 Fa0/10 Pa1 Pa4 VIANOD11 Spenning t Root ID	Address This bridge Hello Time Priority Address Hello Time Aging Time Role 54 Desg FF Desg FF Desg FF Desg FF Desg FF Desg FF Desg FF Desg FF	0001.076 10 the p 2 acc M 34886 () 0001.076 3 cac M 20 15 ED 15 ED 15 ED 15 ED 12 Protocol 1 24897 0001.076	3.1184 oot ax Age 20 se priority 348 3.1184 ax Age 20 as <u>Prio.55br</u> 138.5 138.10 138.38 120.20 1488 8.1084	c Forward Delay 1 76 sys-10-cmt 10) c Forward Delay 1 Type 70p 70p 70p	5 sec 5 esc		
Bridge ID Interface Fa0/9 Fa0/10 Fa4 VIANOD11 Spanning t Root ID	Address This bridge Heilo Time Priority Address Heilo Time Role 54 Desg FF Desg FF D	cool.cre le the p 2 age M 24886 0 cool.cre 2 age M 2 c 2 c 2 c 2 c 2 c 2 c 2 c 2 c	3.1184 oot ax Ape 20 se priority 348 3.1884 ax Ape 20 se Prio.556 128.5 128.5 128.10 128.30	c Porward Delay 1 76 sys-id-car 10) c Forward Delay 1 Type 70p 80p 80p 80p	5		
Bridge ID Interface Fa0/5 Fa0/10 Fa1 Fa1 Fa4 VIANDD11 Spenning t Root ID	Address This bridge Hello Time Priority Address Rels St Desg Fi Desg	cool.cre le the p 2 aec M 34886 () cool.cre 2 c 2 Cost 2 D 15 2 B 15 2 B 12 Protocol. 3 see M 2 col.cre 2 c 2 Cost 2 c 2 Cost 2 c 2 c 2 c 2 c 2 c 2 c 2 c 2 c	3.1184 oot mx Age 20 me priority 348 %.1184 %x Age 20 me <u>Prio.55</u> 138.5 138.5 138.10 138.38 120.25 .128.4 oot ax Age 30 se	c Forward Delay 1 76 sys-id-cat 10) c Forward Delay 1 Type Tap Tap Shy Shy c Forward Delay 1	5 sec		
Bridge ID Interfere Fa0/9 Fa0/10 Fa1 Bridge ID Bridge ID	Address This bridge Hello Time Priority Address Hello Time Role St Desg Fi Desg Fi D	cool.cre la the p 2 asc M 24884 0 cool.cre 2 asc M 20 20 20 20 20 20 20 20 20 20	3.1184 oot ax Ape 20 se priority 348 3.1884 ax Age 20 se - Prio.556 128.9 128.9 128.10 128.38 128.30 128.3	c Porward Delay 1 76 sys-id-cat 10) c Forward Delay 1 Type Pop Shy c Forward Delay 1 76 sys-id-st 11)	5 5 5		

Ilustración 81. Switch DLS1: Configuración de Spanning tree

olar.			
hysical Conf	G CU Adhibutes		
		IDS Command Line Interface	
Bridge ID	Address 24587 (Address 0001.076 Hello Time 3 see H Aging Time 30	priority 24596 aya-id-ext 11: 8.1884 An Age 30 sec Porward Delay 18 sec	~
Interface	Role Ste Cost	Pris.Mar Type	
Ca0/0	Deep FWD 10	120.0 F2p	
C1140a1	Deeg FMD 15	128.10 \$2p	
201	Desg FWD C	128.25 Shr	
Doc	Desg FWD 12	128.35 SEX	
T.AMOD1.5			
Spanning t	ree enabled protocol	inne	
Roop ID	Priority 24000		10
	Address DOCL.C70	3.1064	
	This bridge is the r	000	
	Hello ILDa 2 sec 7	ax age 10 sec Joiward Delay 10 sec	
Bridge 1D	Priority 24688 Address 0001.076	priority 34576 sys-id-ont 13) 8.1DA4	
	Hello Time 3 sec 8 Aging Time 30	an Age 20 sec Forward Delay 16 sec	
Interface	Role Ste Coet	Frio.Mor Type	
CADID	Deeg FWD 15	128.5 ¥2p	
Ew0/10	Desg EWD 15	128.10 P2p	
Pol	Desy FWD 8	128.38 SEL	
Pot	Desg FWD 13	138.39 Skr	
T.ANDOR4			
Spanning t	ree enabled protocol	1	
Root ID	Frierity 24410		
	Address 0001.070	3.1054	
	Hailo Time 2 sec 2	eet Ax Ade 30 sec. Forward Delay 15 sec.	
22020			
H53036 10	Address 0001 C74	8 1DR4	
	Hello Time 1 sec 3 Aging Time 20	ax Age 10 sec Forward Delay 15 sec	
Interface	Role Ste Cost	Frie.Mor Type	<u> </u>
6407E	Daving EWD 17	128.8 P2p	
Fa0/5	Desg FWD 19	128.9 P2p	~
5-0.010	Dodg FMD 15	158 10 000	22



	IOS Command Line Interface		
LARODOL	ming-sree		
Spanning t	ree enabled protocol ieee		
BOOD ID	Priority 34677		
	Address OD01-CVes-IDA4		
	Port 38(Fort-channel2)		
	Rello Time 2 sec Han Age 20 sec Forward Delay 15 sec		
Bridge ID	Priority 28678 (priority 28672 sys-id-ext 1)		
100000000000000000000000000000000000000	Address ODEC DOCE D173		
	Hello Time 3 see Max Age 30 see Ferward Delay 16 see		
	Aging Time ID		
nterface	Dole Sta Cost - Pric.Mbr Type		
03	Root FWD 8 128.39 Shr		
63	Desg SWD 12 128.25 She		
80/9	ALLA HIA 19 120 0 PAP		
LABODIO			
Spanning t	ree enabled protocol ieee		
Nooe ID	Address 0001 CTC3 1054		
	Cost 17		
	Port 25(Port-channel2)		
	Fello Time 2 sec Max Age 20 sec Forward Delay 15 sec		
Bridge ID	Priority 20602 (priority 20672 sys-id-ext 10)		
	Address 00E0.B068.D178		
	Hello Time I sec Max Age 20 sec Forward Delay 15 sec Aging Time 20		
	Role Ste Cost Drie Mar Type		
-7	Deve SWD 9 128.25 Sam		
a0/9	Alto BLK 19 128.9 P2p		
TAPOD11			
Scot ID	Priority 24507		
	Address 0001.0768.1DA4		
	Cost 17		
	Port 39 (Port-channel3) Fill Ford 2 and We have 30 and Data 15 and		
	nerio ille i sec nai age io sec intrate berej to sec		
Bridge 7D	Priority 28688 (priority 28672 sys-id-out 11)		
CONTRACTOR OF L	Participa -	Corner	Discos

Ilustración 83. Switch DLS2: Configuración de Spanning tree

			IOS Command Line Interface	 	
Biloge ID	Address	COND.BOS).D173		-
	Bello Time	3 sec M	x Age 20 sec Forward Delay 15 sec		
	Aging Time	20			
Interface	Bole St	a Cost	Prio Mbr Type		
Po2	Root SW	nd s	128.28 Shr		
Po3	Deng PR	D 12	120.29 Shr		
24075	ALCON BU	a. 19	120.5 120		
VLANCOIZ					
Spanning t	ree enabled	protocol :	eee		
Root ID	Priority	24588			
	Cost	17			
	Port	28 (Dort-	channel2)		
	Sello Time	2 sec B	m Age 20 sec Forward Delay 15 sec		
	-				
Bridge ID	Eddeese	28680 1	Piority 20072 Sys-id-ext 12)		
	Hello Time	2 sec M	x Are 20 sec Forward Delay 15 sec		
	Aging Time	30	,		
Toportono	Role St		Prio Mbr Tune		
Po2	Root FW	id s	128.28 Shr		
Pol	Deng Di	D 12	120.29 Shr		
Fa0/S	alto Bi	E 19	138.6 Pap		
			1000		
VL5N0034					
Spanning t	ree enabled	protocol :	eee		
Root ID	Priority	24810			
	Corr	17	1044		
	Post	28 (Port-	thennel2)		
	Hello Time	2 sec H	x Age 20 sec Forward Delay 15 sec		
Bridge ID	Priority	32802 (1	riority 32765 sys-id-ext 36)		
	Bello Time	3 sec M	W Age 20 sec Forward Delay 18 sec		
	Aging Time	20			
			Terie Mar Trees		
incertace	0010 00		EXTOTION TABLE		
	Root SW	n s	128.28 Shr		
Poz			129.29 Shr		
Po2 Po3	Desg FX	12 10		 	



Physical Cont	Q CL Attr	utes		
		IOS Command Line Interface		
at State borr at	inerchannel au			3
Flags: D -	deen I	- in port-channel		
I -	stand-alone s	- suspended		
н –	Hot-standby I	Secrembry		
u –	in use i	- failed to allocate appregator		
u -	unsuitable fo	bundling		
d -	default port	altreater		
Number of ch	annel-groups	in these 2		- 10
Number of ag	gregators:	2		
Group Barr-	shannal Dece	and Barre		
stoup Porc-	Chamber Proi	A COLORADO A		
	-			
3 Do3/S	(D)	2007 Fa0/9(1) Fa0/10(1)		
ALS1#SH SPan	ning-tree			
VLANODC1				
Root ID	Priority	24577		
8 (C.S.S.) (S.) (S.)	Address	0001.C768.1DA4		
	Port			
	Rello Time	see Max Age 10 sec Forward Delay 15 sec		
Delder TD	Bert Contanta	1776		
arrage	Address	1001.96BD.116D		
	Hello Time	S see Max Age 30 sec Forward Delay 16 sec		
	aging time	10		
Interface	Role Sta	Cost Pric.flbr Type		
Fa0/9	Desg FWI	19 138.9 23p		
Fol	BOOD FNI	9 136.37 Sbr		
Pell	Desg INI	5 126.20 KH		
VLAN0010				
Spanning t	ree enabled p	rotocol leee		
NOOP ID	Address	1001.0763.1064		
	Cost			
	Hello Time	(Yort-channell) 2 sec Max Ame 20 sec Forward Delay 15 sec		
	CARGE CONTRACTOR			- 24
Circle FR In and Circle	lama	Com	Description	
CONTRACTO BOD CD	0000	Copy	Paste	1

Ilustración 85. Switch ALS1: Configuración de Spanning tree

Bridge ID	Priority	20770 /0					
	Contraction of the second second	CODI SEPD	FIORITY 33	768 sys-id-est 10)		,	~
	Hello Time	2 sec Ma	x 3ge 20 s	ec Forward Delay 15 sec			
	Aging Time	20					
Interface	Role St.	e Cost	Prio.Hor	Type			
740/9	Desg FK	0.19	126.9	Pap	0.0000000000000000000000000000000000000		
Pol	ROOT IN	0 0	120.27	Shr			
203	Desg FW	D 5	128.28	Shr			
LINCOLL							
Spanning t	ree enabled ;	protocol 1	eee				
NOOG 10	address	0001 (7753	11164				
	Cost	5					
	DORT	27 (Dort-c	hannell!				
	Hello Time	3 see Ma	n Age 30 s	ec Forward Delay 15 sec			
Bridge ID	Priority	32775 (p	riority 33	Teo sys-id-ext 11)			
	Address	0001.56BD	.116D	-			
	Hello Time	2 sec Ma	a lge 20 s	ec Forward Delay 16 sec			
	Aging Time	20					
Interface	Role St	s Cost	Prio Hor	туре			
F#0/9	Dang FW	D 19	128.9	P2p			
Pol	Root FW	D 9	128.27	Shz			
763	Desg FW	09	138.28	Shr			
ANOD12							
Spanning t	ree enabled ;	protocol 1					
SCOP ID	Pricerty	24588					
	Cost	9	- Linders				
	Port	STIPOTE-C	hannell!				
	Rello Time	2 eec He	z Age 20 s	ee Forward Delay 15 sec			
Bridge ID	Priority	82780 (p	riority 32	768 sys-id-ext 12)			
	Address	0001.96BD	.116D				
	Hello Time	2 sec Mar	z Age 20 s	ec Forward Delay 15 sec			
Interface	Role St.	e Cost	Prio.Mor	Type			
Fa0/9	Desg FW	0 19	136.9	83p			
	Root FN	C	126.27	Shr			1.00



			IOS Command Line Interface	
ALS2>SHow SP	ANN			
VLANOOOL				
Spanning t	ree enabled	protoc	lieee	
Root ID	Priority	24577		
	Cost	9	/63.1DA4	
	Port	28 (Po)	t-channel4)	
	Hello Time	2 sec	Max Age 20 sec Forward Delay 15 sec	
Desides TD	Destandard		1-11-11-11-11-11-11-11-11-11-11-11-11-1	
Bridge ID	Address	0000	(priority 32/00 sys-id-ext I)	
	Hello Time	2 sec	Max Age 20 sec Forward Delay 15 sec	
	Aging Time	20		
Interface	Role St	- Cost	Pric Nor Type	
Fa0/9	Altn BL	K 19	128.9 P2p	
Po2	Desg FW	D 9	128.27 Shr	
Po4	Root FW	D 9	128.28 Shr	
VI.ANOOIO				
Spanning t	ree enabled	protoc	lieee	
Root ID	Priority	24586		
	Address	0001.0	763.1DA4	
	Cost	9		
	Port	28 (Po:	t-channel4)	
	Hello Time	2 sec	Max Age 20 sec Forward Delay 15 sec	
Bridge ID	Priority Address	32778 00D0.	(priority 32768 sys-id-ext 10) 877.C66C	
	Hello Time	2 sec	Max Age 20 sec Forward Delay 15 sec	
	Aging Time	20		
Interface	Role St	s Cost	Prio.Nbr Type	
Fa0/9	Alto BL	K 19	128.9 P2p	
Po2	Desg FW	D 9	128.27 Shr	
Po4	Root FW	D 9	128.28 Shr	
VLANGOIL				
Spanning t	ree enabled	protoc	l leee	
ROOT ID	Address	24557	262 1004	
	Cost	9		
	Port	28 (Po:	t-channel4)	
	Hello Time	2 sec	Max Age 20 sec Forward Delay 15 sec	
-				2

Ilustración 87. Switch ALS2: Configuración de Spanning tree

```
Real ALS2
                                                                                                                                       ____
                                                                                                                                             \times
   Physical Config CLI Attributes
                                                               IOS Command Line Interface
        Bridge ID Priority 32779 (priority 32768 sys-id-ext 11)
Address 0000.5877.C66C
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Aging Time 20
                                                                                                                                                              >
     Interface
                                    Role Sts Cost
                                                                        Prio.Nbr Type
                                                              _____
                                                                                                                      _____
                          Altn BLK 19 128.9
Desg FWD 9 128.27
Root FWD 9 128.28
     Fa0/9
                                                                                          P2p
     Po2
                                                                                          Shr
     Po4
                                                                                          Shr
     VLAN0012
         RN0012
Spanning tree enabled protocol ieee
Root ID Priority 24588
Address 0001.C763.1DA4
Cost 9
        Root ID

    Address
    001107031Day

    Cost
    9

    Port
    28(Port-channel4)

    Hello Time
    2 sec

    Max Age
    20 sec

      Bridge ID Priority 32780 (priority 32768 sys-id-ext 12)
Address 00D0.5877.C66C
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Aging Time 20
                            Role Sts Cost
     Interface
                                                                        Prio.Nbr Type
                                                      -----
             _____
                                                                                                        _____
                                                                                  ____

        Altn BLK 19
        128.9

        Desg FWD 9
        128.27

        Root FWD 9
        128.28

                                                                                         P2p
Shr
     Fa0/9
     Po2
Po4
                                                                                         Shr
     VLAN0034
        Spanning tree enabled protocol ieee
Root ID Priority 24610
Address 0001.C763.1DA4
Cost 9
Port 28/Port-change
                                                   28(Port-channel4)
2 sec Max Age 20 sec Forward Delay 15 sec
                             Port 28(Por
Hello Time 2 sec
       Bridge ID Priority 32802 (priority 32768 sys-id-ext 34)
Address 00D0.5877.C66C
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Aging Time 20

        Interface
        Role Sts Cost
        Prio.Nbr Type

        Fa0/9
        Altn BLK 19
        128.9
        P2p

        Po2
        Desg FWD 9
        128.27
        Shr

                                                                                                                        Copy Paste
   Ctrl+F6 to exit CLI focus
```

🗌 Тор

Ilustración 88. Switch ALS2: Configuración de Spanning tree

1.2.2. ESCENARIO COMANDOS 2

DLS1

swtich>ena swtich#conf t Enter configuration commands, one per line. End with CNTL/Z. swtich(config)#int rang f0/1-24, g0/1-2 swtich(config-if-range)#shutdown

swtich(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINK-3-UPDOWN: Interface Port-channel1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel1, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/11, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/12, changed state to down

swtich(config-if-range)#exit

swtich(config)#host DSL1

DSL1(config)#

DSL1(config)#INT RANG F0/7-8

DSL1(config-if-range)#CHANNEL-PROTOCOL LACP

DSL1(config-if-range)#CHANNEL-GR

DSL1(config-if-range)#CHANNEL-GRoup 2 MODE ACTIV

DSL1(config-if-range)#NO SHUT

DSL1(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

%LINK-5-CHANGED: Interface Port-channel2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up

DSL1(config-if-range)#EXIT

DSL1(config)#INT RANGE F0/9-10

DSL1(config-if-range)#CHANNEL-PROTOCOL PAGP

DSL1(config-if-range)#CHANNEL-GRoup 2 MODE DESIRA

DSL1(config-if-range)#NO SHUT

DSL1(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to up

DSL1(config-if-range)#EXIT

DSL1(config)#INT RANG F0/7-12

DSL1(config-if-range)#SW

DSL1(config-if-range)#SWitchport TRUNK ENCAP D

DSL1(config-if-range)#SWitchport TRUNK ENCAP Dot1q

% Interface range command failed for FastEthernet0/11

% Command failed on interface FastEthernet0/11. Aborting

DSL1(config)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to up%LINK-3-UPDOWN: Interface Port-channel2, changed state to down %LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

DSL1(config)#

%LINK-5-CHANGED: Interface Port-channel2, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up

DSL1(config-if-range)#SWitchport TRUNK NATIVE VLAN 800

DSL1(config-if-range)#SWitchport MODE TRUNK

DSL1#ENA

DSL1#CONF T

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

DSL1(config)#VTP DOMAIN UNAD

Domain name already set to UNAD.

DSL1(config)#VTP PASS cisco123

Password already set to cisco123

DSL1(config)#VTP MODE SERVER

Device mode already VTP SERVER.

DSL1(config)#

DSL1#ENA DSL1#CONF T

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

DSL1(config)#VTP DOMAIN UNAD

Domain name already set to UNAD.

DSL1(config)#VTP PASS cisco123

Password already set to cisco123

DSL1(config)#VTP MODE SERVER

Device mode already VTP SERVER.

DSL1(config)#

DSL1(config)#

DSL1(config)#VLAN 111

DSL1(config-vlan)#NAME VIDEONET

VLAN #11 and #111 have an identical name: VIDEONET

DSL1(config-vlan)#VLAN 123

DSL1(config-vlan)#NAME MANTENIMIENTO

DSL1(config-vlan)#VLAN 101

DSL1(config-vlan)#NAME VOZ

VLAN #10 and #101 have an identical name: VOZ

DSL1(config-vlan)#VLAN 345 DSL1(config-vlan)#NAME ADMINISTRACION VLAN #34 and #345 have an identical name: ADMINISTRACION DSL1(config-vlan)#VLAN 800 DSL1(config-vlan)#NAME NATIVA DSL1(config-vlan)#VLAN 12 DSL1(config-vlan)#NAME EJECUTIVOS DSL1(config-vlan)#VLAN 234 DSL1(config-vlan)#NAME HUESPEDES DSL1(config-vlan)#VLAN 434 DSL1(config-vlan)#NAME ESTACIONAMIENTO DSL1(config-vlan)#STATE SUSPEND DSL1(config)#SPAN DSL1(config)#SPANning-tree VLAN 1 ROOT PRIMARY DSL1(config)#SPANning-tree VLAN 12 ROOT PRIMARY DSL1(config)#SPANning-tree VLAN 434 ROOT PRIMARY DSL1(config)#SPANning-tree VLAN 800 ROOT PRIMARY DSL1(config)#SPANning-tree VLAN 101 ROOT PRIMARY DSL1(config)#SPANning-tree VLAN 123 ROOT PRIMARY DSL1(config)#SPANning-tree VLAN 234 ROOT PRIMARY DSL1(config)#SPANning-tree VLAN 123 ROOT SECONDARY DSL1(config)#SPANning-tree VLAN 234 ROOT SECONDARY DSL1(config)# DSL1(config)#INT F0/6 DSL1(config-if)#SWITCHPORT ACCES VLAN 345 DSL1(config-if)#NO SHUT DSL1(config-if)# %LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to up DSL1(config-if)#INT F0/15 DSL1(config-if)#SWITCHPORT ACCES VLAN 111 DSL1(config-if)#NO SHUT %LINK-5-CHANGED: Interface FastEthernet0/15, changed state to down DSL1(config-if)#SHOW VLAN DSL1#SHOW ETHErchannel SUMMAry DSL1#SHO SPanning-tree

DLS2 switch>ena switch#conf t Enter configuration commands, one per line. End with CNTL/Z. switch(config)#int rang f0/1-24, g0/1-2 switch(config-if-range)#shut

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to administratively down

%LINK-5-CHANGED: Interface FastEthernet0/12, changed state to administratively down

switch(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINK-3-UPDOWN: Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to down

switch(config-if-range)#EXIT

switch(config)#INT G0/2

switch(config-if)#SHUT

switch(config-if)#EXIT

switch(config)#HOST DLS2

DLS2(config)#

%LINK-3-UPDOWN: Interface Port-channel3, changed state to down %LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel3, changed

state to down

DLS2(config)#INT RANG F0/7-8

DLS2(config-if-range)#CHANNEL-PROTOCOL LACP

DLS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIVE

DLS2(config-if-range)#NO SHUT

DLS2(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

%LINK-5-CHANGED: Interface Port-channel2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up

DLS2(config-if-range)#

DLS2(config-if-range)#INT RANG F0/9-10

DLS2(config-if-range)#CHANNEL-PROTOCOL PAGP

DLS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIVE

Command rejected (the interface Fa0/9 is): is already part of a channel with a different type of protocol enabled

Command rejected (the interface Fa0/10 is): is already part of a channel with a different type of protocol enabled

DLS2(config-if-range)#NO SHUT

DLS2(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to up

%LINK-5-CHANGED: Interface Port-channel3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel3, changed state to up

DLS2(config-if-range)#INT RANG F0/9-10

DLS2(config-if-range)#CHANNEL-PROTOCOL PAGP

DLS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIVE

Command rejected (the interface Fa0/9 is): is already part of a channel with a different type of protocol enabled

Command rejected (the interface Fa0/10 is): is already part of a channel with a different type of protocol enabled

DLS2(config-if-range)#NO SHUT

DLS2(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to up

%LINK-5-CHANGED: Interface Port-channel3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel3, changed state to up

DLS2(config-if-range)#EXIT

DLS2(config)#INT RAN F0/7-12

DLS2(config-if-range)#SWITCHPORT TRUNK ENCAP D

DLS2(config-if-range)#SWITCHPORT TRUNK ENCAP Dot1q

% Interface range command failed for FastEthernet0/11

% Command failed on interface FastEthernet0/11. Aborting

DLS2(config)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

%LINK-3-UPDOWN: Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

%LINK-3-UPDOWN: Interface Port-channel3, changed state to down %LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel3, changed state to down DLS2(config)#

DLS2#

%SYS-5-CONFIG I: Configured from console by console

%LINK-5-CHANGED: Interface Port-channel3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel3, changed state to up

%LINK-5-CHANGED: Interface Port-channel2, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed

state to up

DLS2#ENA

DLS2#CONF T

Enter configuration commands, one per line. End with CNTL/Z. DLS2(config)#INT RAN F0/7-12

DLS2(config-if-range)#SWITCHPORT TRUNK NATIVE VLAN 800

% Interface range command failed for FastEthernet0/11

% Command failed on interface FastEthernet0/11. Aborting

DLS2(config)#INT RAN F0/7-12

DLS2(config-if-range)#SWITCHPORT MODE TRUNK

% Interface range command failed for FastEthernet0/11

% Command failed on interface FastEthernet0/11. Aborting

DLS2(config)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

%LINK-3-UPDOWN: Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

%LINK-3-UPDOWN: Interface Port-channel3, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel3, changed state to down

DLS2(config)#

%LINK-5-CHANGED: Interface Port-channel3, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel3, changed state to up

DLS2(config)#INT RAN F0/7-12

DLS2(config-if-range)#SWITCHPORT NO

DLS2(config-if-range)#SWITCHPORT NOnegotiate

% Interface range command failed for FastEthernet0/11

% Command failed on interface FastEthernet0/11. Aborting

DLS2(config)#NO SHUT

% Invalid input detected at '^' marker.

DLS2(config)#INT RAN F0/7-12

DLS2(config-if-range)#

%LINK-5-CHANGED: Interface Port-channel2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up

NO SHUT

%LINK-5-CHANGED: Interface FastEthernet0/11, changed state to down %LINK-5-CHANGED: Interface FastEthernet0/12, changed state to down DLS2(config-if-range)#

DLS2(config)#VTP VERSION 2

DLS2(config)#VTP MODE TRANSPA

Device mode already VTP TRANSPARENT.

DLS2(config)#VLAN 800

DLS2(config-vlan)#NAME NATIVA

DLS2(config-vlan)#VLAN 12

DLS2(config-vlan)#NAME EJECUTIVOS

DLS2(config-vlan)#VLAN 234

DLS2(config-vlan)#NAME HUESPEDES

DLS2(config-vlan)#VLAN 111

DLS2(config-vlan)#NAME VIDEONET

VLAN #11 and #111 have an identical name: VIDEONET

DLS2(config-vlan)#VLAN 123

DLS2(config-vlan)#NAME MANTENIMIENTO

DLS2(config-vlan)#VLAN 101

DLS2(config-vlan)#NAME VOZ

VLAN #10 and #101 have an identical name: VOZ

DLS2(config-vlan)#VLAN 345

DLS2(config-vlan)#NAME ADMINISTRACION

VLAN #34 and #345 have an identical name: ADMINISTRACION

DLS2(config-vlan)#VLAN 434

DLS2(config-vlan)#NAME ESTACIONAMIENTO

DLS2(config-vlan)#STATE SUSPEND

DLS2(config-vlan)#VLAN 567

DLS2(config-vlan)#NAME CONTABILIDAD

DLS2(config-vlan)#

DLS2#CONF TER

Enter configuration commands, one per line. End with CNTL/Z. DLS2(config)#SPAN

DLS2(config)#SPANning-tree VLAN 123 ROOT PRIMARY

DLS2(config)#SPANning-tree VLAN 234 ROOT PRIMARY

DLS2(config)#SPANning-tree VLAN 12 ROOT PRIMARY

DLS2(config)#SPANning-tree VLAN 12 ROOT SECONDARY

DLS2(config)#SPANning-tree VLAN 434 ROOT SECONDARY

DLS2(config)#SPANning-tree VLAN 800 ROOT SECONDARY

DLS2(config)#SPANning-tree VLAN 101 ROOT SECONDARY

DLS2(config)#SPANning-tree VLAN 111 ROOT SECONDARY DLS2(config)#SPANning-tree VLAN 345 ROOT SECONDARY

DLS2(config)#INT F0/6

DLS2(config-if)#SWITCHPORT ACCESS VLAN 12

DLS2(config-if)#SWITCHPORT ACCESS VLAN 101

DLS2(config-if)#NO SHUT

DLS2(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to up

DLS2(config-if)#INT F0/15

DLS2(config-if)#SWITCHPORT ACCESS VLAN 111

DLS2(config-if)#NO SHUT

%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to down DLS2(config-if)#EXIT

DLS2(config)#INT RANG F0/16-18

DLS2(config-if-range)#SWITCHPORT ACCESS VLAN 567

DLS2(config-if-range)#NO SHUT

%LINK-5-CHANGED: Interface FastEthernet0/16, changed state to down %LINK-5-CHANGED: Interface FastEthernet0/17, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/18, changed state to down DLS2#SHOW VLAN DLS2#SHOW SPAnning-tree

ALS1

SWITCH>EN

SWITCH#CONF T

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

SWITCH(config)#INT RAN F0/1-24, G0/1-2

SWITCH(config-if-range)#SHUT

SWITCH(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINK-3-UPDOWN: Interface Port-channel1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel1, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to down

SWITCH(config)#HOST ALS1

ALS1(config)#INT RAN F0/9-10

ALS1(config-if-range)#CHANNEL-PROTOCOL PAGP

ALS1(config-if-range)#CHANNEL-GROUP 2 MODE DESIRABL

ALS1(config-if-range)#NO SHUT

ALS1(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to up

%LINK-5-CHANGED: Interface Port-channel2, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up

ALS1(config)#INT RAN F0/7-10

ALS1(config-if-range)#SWITCHPORT TRUNK native vlan 800

ALS1(config-if-range)#SWITCHPORT MODE TRUNK

ALS1(config-if-range)#

%LINK-3-UPDOWN: Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down ALS1(config-if-range)#EXIT

ALS1(config)#VTP VER 2

Cannot modify version in VTP client mode

ALS1(config) #VTP MODE CLIE

Device mode already VTP CLIENT.

ALS1(config)#INT RAN F0/7-10

ALS1(config-if-range)#SWITCHPORT TRUNK native vlan 800

ALS1(config-if-range)#SWITCHPORT MODE TRUNK

ALS1(config-if-range)#

%LINK-3-UPDOWN: Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down

ALS1(config-if-range)#

%LINK-5-CHANGED: Interface Port-channel2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up

ALS1(config-if-range)#EXIT

ALS1(config)#INT F0/6

ALS1(config-if)#SWI

ALS1(config-if)#SWItchport ACCES VLAN 123

ALS1(config-if)#SWItchport ACCES VLAN 101

ALS1(config-if)#NO SHUT

ALS1(config-if)#

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to up

ALS1(config-if)#EXIT

ALS1(config)#INT F0/15

ALS1(config-if)#SWItchport ACCES VLAN 111

ALS1(config-if)#NO SHUT

%LINK-5-CHANGED: Interface FastEthernet0/15, changed state to down

ALS1(config-if)#SHOW VLAN

ALS1(config-if)#SHOW ETHERCHANNEL SUMMARY

ALS2

swtich>ENA

swtich#CONF TERM

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

swtich(config)#INT

swtich(config)#INTerface RANG

swtich(config)#INTerface RANGe F0/1-24, G0/1-2

swtich(config-if-range)#SHUT

swtich(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/6, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/6, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINK-3-UPDOWN: Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to administratively down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to down

swtich(config-if-range)#EXIT

swtich(config)#HOST ALS2

ALS2(config)#

ALS2#ENA

ALS2#CONF T

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

ALS2(config)#INT RANG F0/7-8

ALS2(config-if-range)#CHANNEL-PROTOCOL LACP

ALS2(config-if-range)#CHANNEL-GROUP 2 MODE ACTIV

ALS2(config-if-range)#NO SHUT

ALS2(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/7, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/8, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

%LINK-5-CHANGED: Interface Port-channel2, changed state to up %LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to up

ALS2(config-if-range)#EXIT

ALS2(config)#INT RANG F0/9-10

ALS2(config-if-range)#CHANNEL-PROTOCOL PAGP

ALS2(config-if-range)#CHANNEL-GROUP 2 MODE DESIRABLE

ALS2(config-if-range)#NO SHUT

ALS2(config-if-range)#

%LINK-5-CHANGED: Interface FastEthernet0/9, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/10, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to up

ALS2(config)#INT RANG F0/7-10

ALS2(config-if-range)#SWITCH TRUNK NATIVE VLAN 800

ALS2(config-if-range)#SWITCH MODE TRUNK

ALS2(config-if-range)#

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/7, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/9, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/10, changed state to up

%LINK-3-UPDOWN: Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channel2, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up

ALS2(config-if-range)#SWITCH NONEGOTIAT

ALS2(config-if-range)#NO SHUT ALS2#ENA ALS2#CONF T Enter configuration commands, one per line. End with CNTL/Z. ALS2(config)#VTP VERSION 2 Cannot modify version in VTP client mode ALS2(config)#VTP MODE CLIENT Device mode already VTP CLIENT ALS2>ena ALS2#conf te Enter configuration commands, one per line. End with CNTL/Z. ALS2(config)#int f0/15 ALS2(config-if)#switc ALS2(config-if)#switchport access vlan 234 ALS2(config-if)#no shut %LINK-5-CHANGED: Interface FastEthernet0/15, changed state to down ALS2(config-if)#exit ALS2(config)#int f0/15 ALS2(config-if)#switchport access vlan 111 ALS2(config-if)#no shut ALS2(config-if)#SHOW VLAN ALS2#SHOW SPanning-tree

CONCLUSIONES

Durante el desarrollo de este diplomado CCNP se logró adquirir conocimientos prácticos y teóricos no solo para el desarrollo de esta prueba de habilidades en los dos escenarios propuestos, sino para cualquier otro escenario en el que se puedan administrar equipos tales como routers y enrutadores en diferentes topologías.

Se logró interconectar varias sedes como lo haríamos en un entorno real configurando equipos marca CISCO aprovechando la simulación con el software packet tracer el cual es una muy buena herramienta para entender mejor el funcionamiento de las redes y sus protocolos de enrutamiento como lo son EIGRP Y OSPF, DCHP, comprendiendo mejor los límites y necesidades planteadas en cualquier esquema de configuración o topología. También mediante el Switching y el Routing se logró aumentar la velocidad de acceso a la información administrándola de forma más eficiente.

A partir de las configuraciones básicas en los dispositivos de comunicación cisco se pueden implementar las configuraciones mejorando el envío, transporte y recepción de datos en redes locales y llevarlas a topologías más grandes, mediante este tipo de tecnologías se pueden optimizar y mejorar las pequeñas y grandes empresas, usando por ejemplo las VLANS, las cuales son bastante útiles ofreciendo mayor seguridad a la red implementada.

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