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2.2.2.5 lab - configuring ipv4 static and default routes pdf file pdf file

Práctica de laboratorio: configuración de los parámetros básicos de un switch

Topología



Tabla de direccionamiento

Dispositivo	Interfaz	Dirección IP	Máscara de subred	Gateway predeterminado
S1	VLAN 99	192.168.1.1	255.255.255.0	192.168.1.1
PC-A	NIC	192.168.1.10	255.255.255.0	192.168.1.1

Objetivos

Parte 1: Instalar el cableado de red y verificar la configuración predeterminada del switch.

Parte 2: Configurar los parámetros básicos de los dispositivos de red.

- Configurar los parámetros básicos del switch.
- Configurar la dirección IP de la consola.

Parte 3: Verificar y probar la conectividad de red.

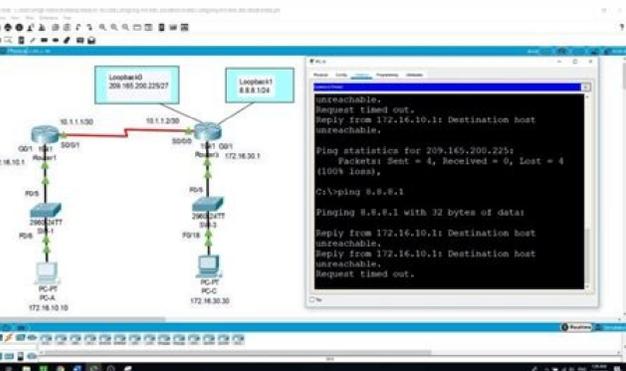
- Mostrar la configuración del dispositivo.
- Probar la conectividad de extremo a extremo con ping.
- Probar las capacidades de administración remota con Telnet.
- Quitar el ancho de configuración en ejecución del switch.

Parte 4: Administrar la tabla de direcciones MAC.

- Registrar la dirección MAC del host.
- Determinar las direcciones MAC que el switch ha aprendidas.
- Enumerar las opciones del comando show mac address-table.
- Configurar una dirección MAC estática.

Información básica de configuración

Los switches Cisco se pueden configurar con una dirección IP especial, conocida como "dirección virtual de switch" (SVI). La SVI es una dirección de administración que puede usar para el acceso remoto al switch a fin de ver o configurar predeterminados. Si se asigna una dirección IP a la SVI de la VLAN 1, de manera predeterminada, todos los puertos en la VLAN 1 tienen acceso a la dirección IP de administración de SVI.



1. A ____ of processing must be handled as a unit.
 - a. line
 - b. segment
 - c. critical region
 - d. semaphore
2. Lock and key synchronization must take place within a single ____.
 - a. instruction
 - b. computer
 - c. processor
 - d. machine cycle
3. A problem with test-and-set is that when many processes are waiting to enter a critical region, ____ could occur because the processes gain access in an arbitrary fashion.
 - a. starvation
 - b. synchronization
 - c. deadlock
 - d. an error
4. What are the two operations identified by Dijkstra to be performed on a semaphore?
 - a. P and V
 - b. WAIT and SIGNAL
 - c. Test-and-set
 - d. check and update
5. When using a semaphore, a value of ____ indicates that a critical region is in use.
 - a. -100
 - b. 0
 - c. 100
 - d. 9999
6. Operations on semaphore s enforce the concept of mutual exclusion, which is necessary to avoid having two operations attempt to execute at the same time. The name traditionally given to this semaphore in the literature is ____.
 - a. phore
 - b. exe
 - c. signal
 - d. mutex
7. Most current operating systems support the implementation of threads, or ____, which have become part of numerous application packages.
 - a. parallel processes
 - b. lightweight processes
 - c. heavyweight processes

PC-C sends a ping reply back to PC-A. No From PC-A, is it possible to ping Lo0? No Were these pings successful? Page 3 of 15 Lab - Configuring IPv4 Static and Default Routes Step 4: Verify connectivity of the LANs. a. To communicate with distant networks, routes must be specified and added to the routing table. In this lab, you will manually configure a static route to a specified distant network based on a next-hop IP address or exit interface. All rPage 2 Lab - Configuring IPv4 Static and Default Routes Topology Addressing Table Device R1 Interface IP Address Subnet Mask Default Gateway G0/1 192.168.0.1 255.255.255.0 N/A S0/0/1 10.1.1.1 255.255.255.252 N/A G0/1 192.168.1.1 255.255.255.0 N/A S0/0/0 (DCE) 10.1.1.2 255.255.255.252 N/A Lo0 209.165.200.225 255.255.255.0 N/A PC-A NIC 192.168.0.10 255.255.255.0 N/A PC-A NIC 192.168.0.10 255.255.255.0 N/A R3 Objectives Part 1: Set Up the Topology and Initialize Devices Part 2: Configure Basic Device Settings and Verify Connectivity © 2013 Cisco and/or its affiliates. A default route is a type of static route that specifies a gateway to use when the routing table does not contain a path for the destination network. Note: This lab provides minimal assistance with the actual commands necessary to configure static routing. However, the required commands are provided in Appendix A. Test connectivity by pinging between the directly connected routers. Test your knowledge by trying to configure the devices without referring to the appendix. Configure the R1 router with a default route using the exit interface of S0/0/1. With a recursive static route, the next-hop IP address is specified. PC-C sends a ping reply back to PC-A. Page 2 of 8 Part 3: Configure Static Routes Configure a recursive static route. No. Because there was no ip route for PING, si these pings should fail. Page 2 of 15 Lab - Configuring IPv4 Static and Default Routes Step 1: Configure the PC interfaces. Step 2: Configure basic settings on the routers. a. Configure device names, as shown in the Topology and Addressing Table. b. Disable DNS lookup. c. Assign classes the enable password and assign ciscoas the console and vty password. d. Save the running configuration to the startup configuration file. Step 3: Configure IP settings on the routers. a. Configure the R1 and R3 interfaces with IP addresses according to the Addressing Table. b. The S0/0/0 connection is the DCE connection and requires the clock rate command. Step 3: Configure IP settings on the routers. Yes 3. To configure directly connected static routes with an exit interface specified, use the following syntax: Router(config)# ip route network-address subnet-mask exit-intfa. no ip route 198.133.219.0 255.255.255.0 N/AS0/0/1 10.1.1.1 255.255.255.0 N/AS0/0/0 (DCE) 10.1.1.2 255.255.255.252 N/ALo0 209.165.200.225 255.255.255.0 N/ALo1 198.133.219.1 255.255.255.0 N/APC-A NIC 192.168.0.10 255.255.255.0 192.168.1.10 255.255.255.0 192.168.1.1 Objectives Part 1: Set Up the Topology and Initialize Devices Part 2: Configure Basic Device Settings and Verify Connectivity 5/26/2018 6.2.2.5 Lab - Configuring IPv4 Static and Default Routes Lab Configuring IPv4 Static and Default Routes 2013 Cisco and/or its affiliates. To configure a default static route, use the following syntax: Router(config)# ip route 0.0.0.0 0.0.0.0 {ip-address or exit-intf} a. From PC-A, is it possible to ping the default gateway? To configure directly connected static routes with an exit interface specified, use the following syntax: Router(config)# ip route network-address subnet-mask exit-intfa. ip route 198.133.219.0 255.255.255.0 10.1.1.2 b. Test connectivity by pinging between the directly connected routers. From R1, is it possible to ping the S0/0/0 interface of R3? si If the answer is not any of these questions, troubleshoot the configurations and correct the error. c. Test connectivity between devices that are not directly connected. From PC-A, is it possible to ping PC-C? no From PC-A, is it possible to ping Lo0? View the routing table information for R1 using the show ip route command. What networks are present in the Addressing Table of this lab, but not in the routing table for R1? Loopback0, loopback1, y la 192.168.1.05/26/2018 6.2.2.5 Lab - Configuring IPv4 Static and Default Routes 2013 Cisco and/or its affiliates. No From PC-A, is it possible to ping Lo1? Current configuration: 1799 bytes !! Last configuration change at 20:37:52 UTC Tue Sep 3 2013 ! NVRAM config last updated at 20:45:41 UTC Tue Sep 3 2013 ! NVRAM config last updated at 20:45:41 UTC Tue Sep 3 2013 version 15.1 service timestamps debug datetime msec service timestamps log datetime msec no service password-encryption ! hostname R1 ! boot-start-marker boot-end-marker !! enable password class ! no aaa new-model ! memory-size iomem 10 ! no ipv6 cef © 2013 Cisco and/or its affiliates. On the R1 router, configure a static route to the 192.168.1.0 network using the IP address of the Serial 0/0/0 interface of R3 as the next-hop address. Page 10 of 15 Lab - Configuring IPv4 Static and Default Routes b. How many interfaces are activated on R3? Based on your network implementation and the output of the ipconfig/all command, did PC-A receive IPv6 addressing info 5/26/2018 6.2.2.5 Lab - Configuring IPv4 Static and Default Routes 2013 Cisco and/or its affiliates. Page 11 of 15 Lab - Configuring IPv4 Static and Default Routes Because it is more secure, test your knowledge by trying to configure the devices without referring to the appendix. Step 1: Configure a recursive static route. With a recursive static route, the next-hop IP address is specified. Refer to the Router Interface Summary Table at the end of this lab for the correct interface identifiers. Note: Make sure that the routers and switches have been erased and have no startup configurations. A new network 192.168.3.0/24 is connected to interface G0/0 on R1. Step 2: Configure basic settings on the routers. Gateway of last resort is not set 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks C 10.1.1.0/30 is directly connected, Serial0/1/0 L 10.1.1.2/32 is directly connected, Serial0/1/0 L 10.1.1.2/32 is directly connected, Serial0/1/0 L 10.1.1.2/32 is directly connected, GigabitEthernet0/1 L 192.168.1.1/32 is directly connected, GigabitEthernet0/1 L 198.133.219.0/24 is variably subnetted, 2 subnets, 2 masks C 198.133.219.0/24 is directly connected, Loopback1 L 198.133.219.1/32 is directly connected, Loopback1 209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks C 209.165.200.0/24 is directly connected, Loopback0 L 209.165.200.225/32 is directly connected, Loopback0 C 2013 Cisco and/or its affiliates. 198.133.219.0 209.165.200.224 192.168.1.0 d. Part 4: Configure and Verify a Default Route Background / Scenario A router uses a routing table to determine where to send packets. 2 la g0/1 y la serial 0/0/1. No These pings should fail. Note: It may be necessary to disable the PC firewall to ping between PCs. Step 5: Gather information. Note: The routers used with CCNA hands-on labs are Cisco 1941 Integrated Services Routers (ISRs) with Cisco IOS Release 15.2(4)M3 (universalk9 image). Initially, the routing table contains only directly connected networks. Configure a directly connected static route. d. Disable DNS lookup. no From PC-A, is it possible to ping Lo1? Gateway of last resort is not set 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks C 10.1.1.0/30 is directly connected, Serial0/1/1 L 10.1.1.1/32 is directly connected, Serial0/1/1 © 2013 Cisco and/or its affiliates. Depending on the model and Cisco IOS version, the commands available and output produced might vary from what is shown in the labs. On the R1 router, configure a static route to the 198.133.219.0 network using one of the static route configuration options from the previous steps. On the R3 router, configure a static route to the 192.168.0.0 network using S0/0/0 as the exit interface. ip route 209.165.200.224 255.255.255.224 10.1.1.2 c. From host PC-A, is it possible to ping the host PC-C? On the R1 router, configure a static route to the 209.165.200.224 network on R3 using the other static route configuration option from the previous steps. How many interfaces are activated on R1? Check the status of the interfaces on R1 with the show ip interface brief command. Because only the next-hop IP is specified, the router must perform multiple lookups in the routing table before forwarding packets. R3(config)# interface s0/0/0 R3(config)# ip address 10.1.1.2 255.255.252 R3(config)# clock rate 128000 R3(config)# no shutdown © 2013 Cisco and/or its affiliates. Save the running configuration to the startup configuration file. © 2013 Cisco and/or its affiliates. The R3 S0/0/0 configuration is displayed below. R3(config)# interface s0/0/0 R3(config)# ip address 10.1.1.2 255.255.252 R3(config)# clock rate 128000 R3(config)# no shutdown Step 4: Verify connectivity of the LANs. a. Test connectivity by pinging from each PC to the default gateway that has been configured for that host. From PC-A, is it possible to ping the default gateway? si From PC-C, is it possible to ping the default gateway? si b. Note: It may be necessary to disable the PC firewall to ping between PCs. Step 3: Configure a static route. View the routing table information for R3. Is there a benefit to configuring a directly connected static route instead of a recursive static route? View the routing table to verify the routes have been removed. From R1, is it possible to ping the S0/0/0 interface of R3? Step 2: Initialize and reload the router and switch. To communicate with distant networks, routes must be specified and added to the routing table. Check the status of the interfaces on R3. Page 15 of 15 However, the ping reply is discarded at R3 because R3 does not have a return route to the 192.168.0.0 network in the routing table. Step 2: Configure a directly connected static route. With a directly connected static route, the exit-interface parameter is specified, which allows the router to resolve a forwarding decision in one lookup. Gateway of last resort is not set 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks C 10.1.1.0/30 is directly connected, Serial0/1/0 © 2013 Cisco and/or its affiliates. Why or why not? No porque el router no concede la red Note: It may be necessary to disable the PC firewall to ping between

