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Packet Tracer - Configure CDP, LLDP, and NTP

Addressing Table

Device	Interface	IP Address
HQ	G0/0/0	192.168.1.1/24
	G0/0/1	192.168.2.1/24
	S0/1/0	192.168.3.1/30
Branch	G0/0/0	192.168.1.2
	S0/1/0	192.168.3.2/30
HQ-SW-1	VLAN 1	Not configured
HQ-SW-2	VLAN 1	Not configured
BR-SW-1	VLAN 10	192.168.4.250
BR-SW-2	VLAN 10	192.168.4.253
BR-SW-3	VLAN 10	192.168.4.254
NTP Server	NIC	192.168.1.254
PC1	NIC	192.168.2.10
PC2	NIC	192.168.4.10
PC3	NIC	192.168.4.20

Objectives

In this activity, you will configure a router to receive time information over NTP and configure devices with CDP and LLDP.

- Configure CDP to run globally on a device.
- Disable CDP on device interfaces where necessary.
- Configure LLDP to run globally on a device.
- Configure LLDP to send and receive messages according to requirements.
- Configure a router to use an NTP server.

Background / Scenario

A network administrator has been asked to investigate a new client's network. Documentation is incomplete for the network, so some information needs to be discovered. In addition, the NTP server needs to be configured on a router. Discovery protocols must also be adjusted to control traffic discovery protocol traffic and prevent information about the network from being received by potentially unauthorized hosts.

Some of the device IP addresses are unknown to you. You must determine what the IP addresses are so that you can connect to the devices over SSH in order to configure them. You can enter them into the Addressing Table as you discover them.

Instructions

Use the table below to logon to the Branch switches when you need to do so.

Device	Username	User Password	Enable Secret
BR-SW1	admin	SW1admin#	SW1EnaAccess#
BR-SW2	admin	SW2admin#	SW2EnaAccess#
BR-SW3	admin	SW3admin#	SW3EnaAccess#

Note: Click the **Fast Forward Time** button in the blue bar below the topology to speed up STP convergence. You can also click it several times to speed up the CDP update process.

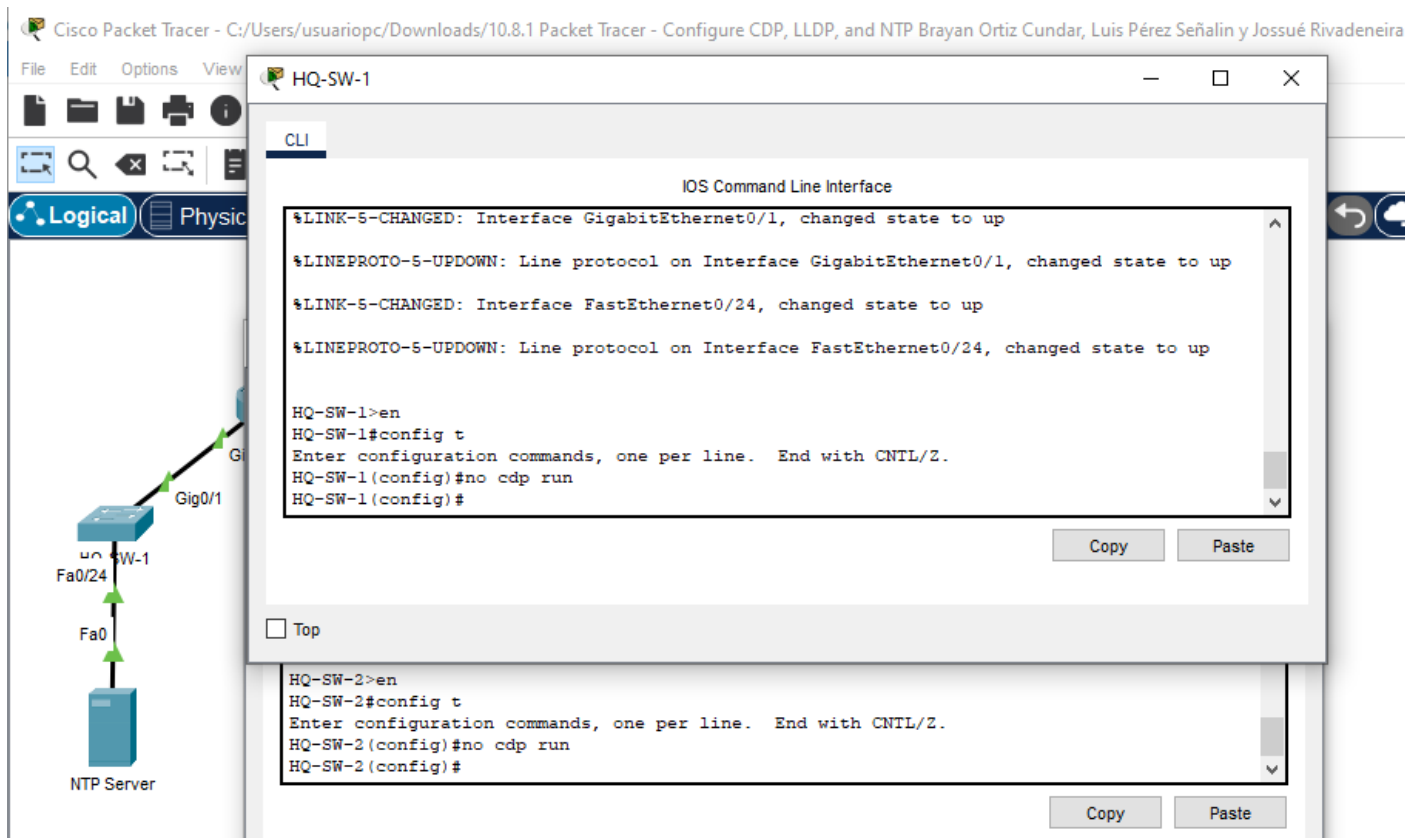
Configure LLDP as follows:

- Disable CDP on the HQ router.
- Enable LLDP globally on HQ.
- On HQ, configure the links to the switches to only receive LLDP messages.

The screenshot shows the Cisco Packet Tracer interface. On the left, a network topology is visible with a central HQ router connected to two branch switches, BR-SW1 and BR-SW2. BR-SW1 is connected to HQ via GigabitEthernet 0/0/1, and BR-SW2 is connected to HQ via GigabitEthernet 0/0/0. Both branch switches have a Fa0/24 interface connected to a PC. The HQ router has a Serial 0/0/0 interface connected to a PC. The right pane shows the CLI for the HQ router with the following configuration commands:

```
HQ>en
HQ#config t
Enter configuration commands, one per line. End with CNTL/Z.
HQ(config)#no cdp run
HQ(config)#lldp run
HQ(config)#int g0/0/0
HQ(config-if)#lldp receive
HQ(config-if)#no lldp transmit
HQ(config-if)#do wr
Building configuration...
[OK]
HQ(config-if)#int g0/0/1
HQ(config-if)#lldp receive
HQ(config-if)#no lldp transmit
HQ(config-if)#do wr
Building configuration...
[OK]
HQ(config-if)#
```

- Disable CDP on the HQ-SW-1 and HQ-SW-2 switches.



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File Edit Options View

Logical Physical

HQ-SW-1

CLI

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up

HQ-SW-1>en
HQ-SW-1#config t
Enter configuration commands, one per line. End with CNTL/Z.
HQ-SW-1(config)#no cdp run
HQ-SW-1(config)#
```

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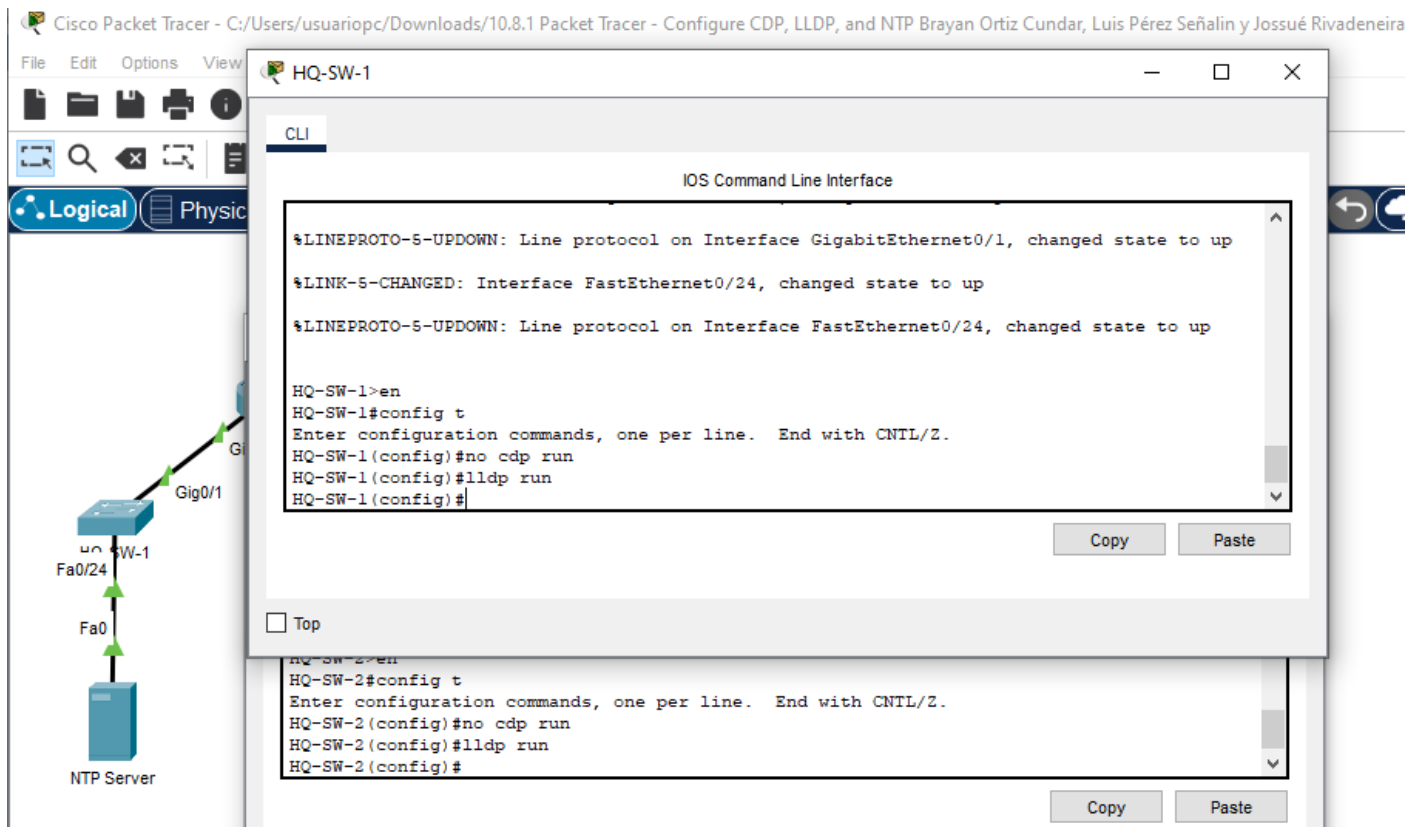
Top

```
HQ-SW-2>en
HQ-SW-2#config t
Enter configuration commands, one per line. End with CNTL/Z.
HQ-SW-2(config)#no cdp run
HQ-SW-2(config)#
```

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NTP Server

- Enable LLDP on the HQ-SW-1 and HQ-SW-2 switches.



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File Edit Options View

Logical Physical

HQ-SW-1

CLI

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/24, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/24, changed state to up

HQ-SW-1>en
HQ-SW-1#config t
Enter configuration commands, one per line. End with CNTL/Z.
HQ-SW-1(config)#no cdp run
HQ-SW-1(config)#lldp run
HQ-SW-1(config)#
```

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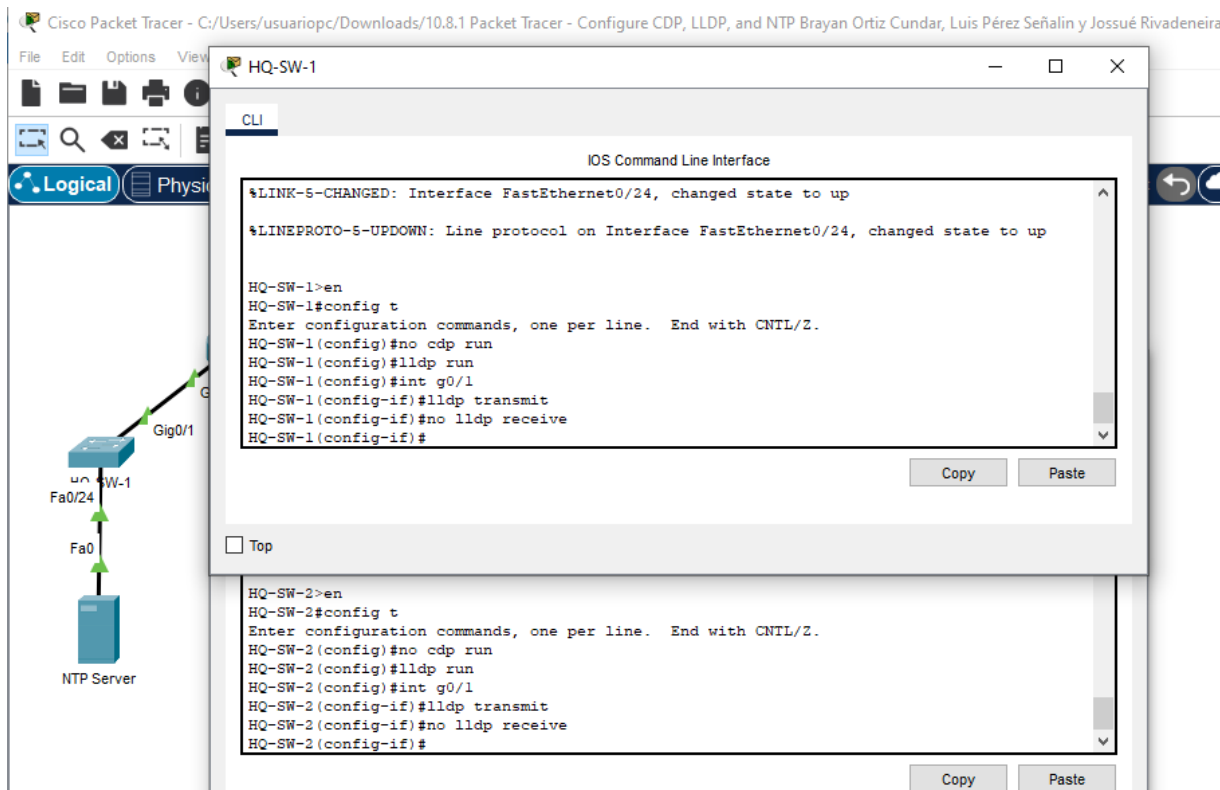
Top

```
HQ-SW-2>en
HQ-SW-2#config t
Enter configuration commands, one per line. End with CNTL/Z.
HQ-SW-2(config)#no cdp run
HQ-SW-2(config)#lldp run
HQ-SW-2(config)#
```

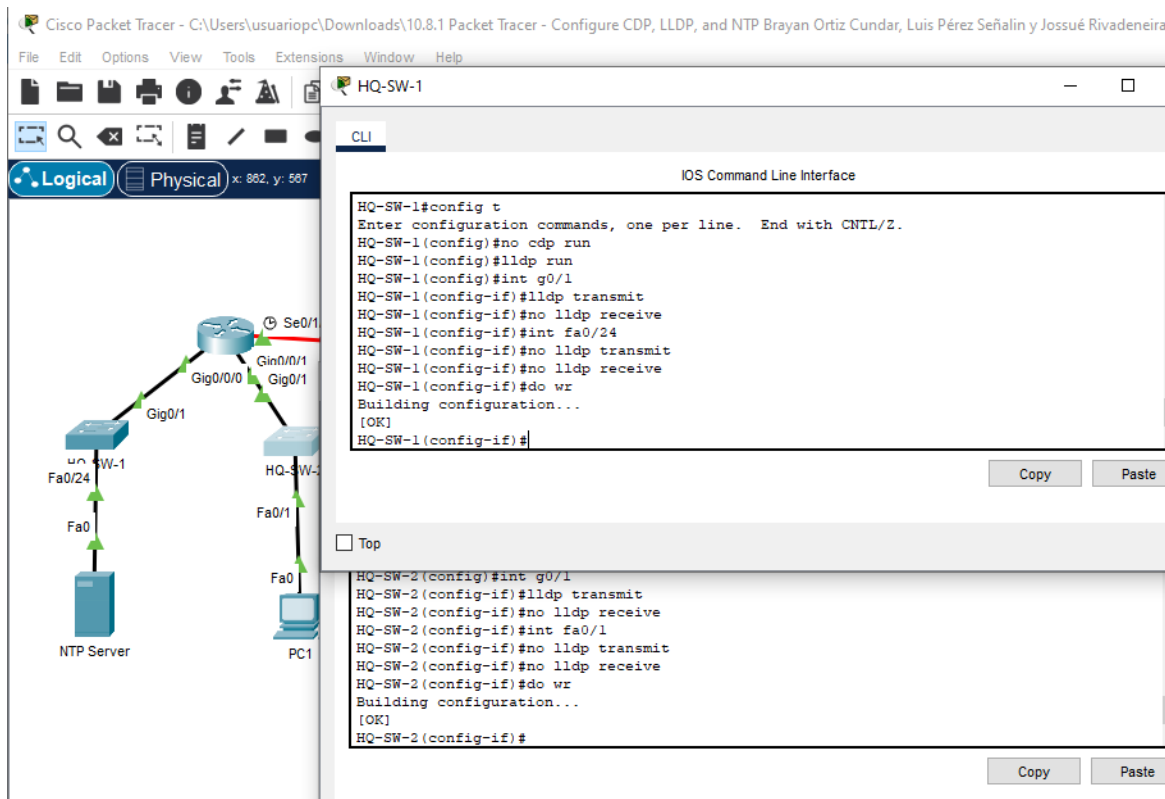
Copy Paste

NTP Server

- On the HQ-SW-1 and HQ-SW-2 switches, configure the links to the HQ router to only send, not receive, LLDP messages.



- Disable LLDP completely on the HQ-SW-1 and HQ-SW-2 access ports that are in use.



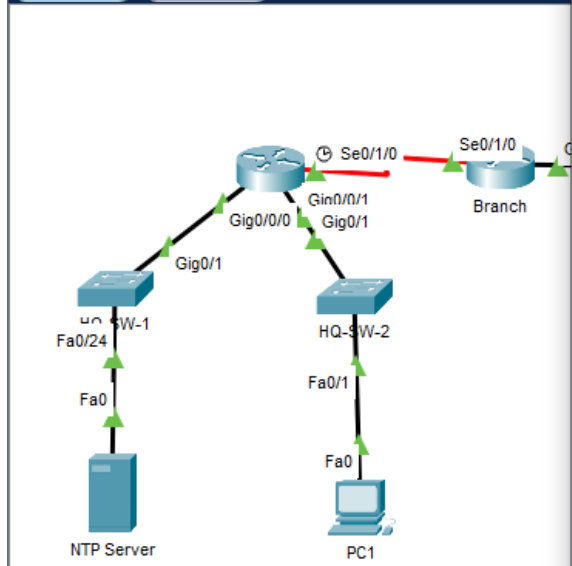
Configure CDP as follows:

- Activate CDP on the Branch router.

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File Edit Options View Tools Extensions Window Help

Logical Physical x: 968, y: 423



Branch

CLI

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0, cha
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0/0.10,
up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1/0, changed stat

Branch>en
Branch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Branch(config)#cdp run
Branch(config)#exit
Branch#
%SYS-5-CONFIG_I: Configured from console by console

Branch#sh cdp neig
Branch#sh cdp neighbors detail

Device ID: BR-SW-1
Entry address(es):
  IP address : 192.168.4.250
Platform: cisco 2960, Capabilities: Switch
Interface: GigabitEthernet0/0/0.10, Port ID (outgoing port): GigabitEther
```

- Connect to switch BR-SW1 over SSH. You will not be able to open a CLI window by clicking the Branch switches.

```
Branch#ssh -l admin 192.168.4.250

Password:

BR-SW-1>en
Password:
BR-SW-1#
```

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File Edit Options View Tools Extensions

Logical Physical x: 1019, y: 700

Branch

CLI

IOS Command Line Interface

```
BR-SW-1>en
Password:
BR-SW-1#sh cdp nei
BR-SW-1#sh cdp neighbors detail

Device ID: BR-SW-2
Entry address(es):
  IP address : 192.168.4.253
Platform: cisco 2960, Capabilities: Switch
Interface: GigabitEthernet0/2, Port ID (outgoing port): GigabitEthernet0/2
Holdtime: 175

Version :
Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE
SOFTWARE (fcl)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

advertisement version: 2
Duplex: full
-----

Device ID: BR-SW-3
Entry address(es):
  IP address : 192.168.4.254
Platform: cisco 2960, Capabilities: Switch
Interface: FastEthernet0/24, Port ID (outgoing port): GigabitEthernet0/1
Holdtime: 175

Version :
Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE
SOFTWARE (fcl)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

BR-SW-1#
```

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- Connect to switches BR-SW2 and BR-SW3 over SSH. Configure the access ports that are in use to not send CDP messages out of the ports.

Branch

CLI

IOS Command Line Interface

```
BR-SW-1#ssh -l admin 192.168.4.253
Password:

BR-SW-2>en
Password:
BR-SW-2#sh cdp nei
BR-SW-2#sh cdp neighbors detail

Device ID: BR-SW-1
Entry address(es):
  IP address : 192.168.4.250
Platform: cisco 2960, Capabilities: Switch
Interface: GigabitEthernet0/2, Port ID (outgoing port): GigabitEthernet0/2
Holdtime: 122

Version :
Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE
SOFTWARE (fcl)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

advertisement version: 2
Duplex: full
-----

Device ID: BR-SW-3
Entry address(es):
  IP address : 192.168.4.254
Platform: cisco 2960, Capabilities: Switch
Interface: FastEthernet0/24, Port ID (outgoing port): FastEthernet0/24
Holdtime: 122

BR-SW-2#
```

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```
BR-SW-2>en
Password:
BR-SW-2#config t
Enter configuration commands, one per line. End with CNTL/Z.
BR-SW-2(config)#int fa0/1
BR-SW-2(config-if)#no cdp enable
BR-SW-2(config-if)#
```

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Branch

CLI

IOS Command Line Interface

```
BR-SW-2#ssh -l admin 192.168.4.254

Password:

BR-SW-3>en
Password:
BR-SW-3#sh cdp nei
BR-SW-3#sh cdp neighbors detail

Device ID: BR-SW-1
Entry address(es):
  IP address : 192.168.4.250
Platform: cisco 2960, Capabilities: Switch
Interface: GigabitEthernet0/1, Port ID (outgoing port): FastEthernet0/24
Holdtime: 142

Version :
Cisco IOS Software, C2960 Software (C2960-LANBASE-M), Version 12.2(25)FX, RELEASE
SOFTWARE (fcl)
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Wed 12-Oct-05 22:05 by pt_team

advertisement version: 2
Duplex: full
-----

Device ID: BR-SW-2
Entry address(es):
  IP address : 192.168.4.253
Platform: cisco 2960, Capabilities: Switch
Interface: FastEthernet0/24, Port ID (outgoing port): FastEthernet0/24
Holdtime: 142

BR-SW-3#
```

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```
BR-SW-3>en
Password:
BR-SW-3#config t
Enter configuration commands, one per line. End with CNTL/Z.
BR-SW-3(config)#int fa0/1
BR-SW-3(config-if)#no cdp enable
BR-SW-3(config-if)#
```

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Configure NTP:

- Configure HQ to use the device at 192.168.1.254 as an NTP server.

```
HQ>en
HQ#config t
Enter configuration commands, one per line. End with CNTL/Z.
HQ(config)#ntp server 192.168.1.254
HQ(config)#do wr
Building configuration...
[OK]
HQ(config)#
```

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Captura de pantalla de completitud:

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Activity Results

Time Elapsed: 00:38:46

Congratulations Brayan Ortiz Cundar, Luis Pérez Señalín y Jossué Rivadeneira Ordóñez! You completed the activity.

Overall Feedback **Assessment Items** Connectivity Tests

Expand/Collapse All Show Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
Branch		0	Other	
CDP		0	Other	
CDP Enabled	Correct	5	Configure CDP	
BR-SW-2		0	Other	
Ports		0	Other	
FastEthernet0/1		0	Other	
CDP Enabled	Correct	7	Configure CDP In...	
BR-SW-3		0	Other	
Ports		0	Other	
FastEthernet0/1		0	Other	
CDP Enabled	Correct	7	Configure CDP In...	
HQ				
CDP		0	Other	
CDP Enabled	Correct	5	Configure CDP	
LLDP		0	Ip	
Enabled	Correct	5	Configure LLDP	
NTP		0	Other	
NTP Server Information		0	Other	
Address0	Correct	8	Configure NTP S...	
Ports				
GigabitEthernet0/0/0				
LLDP Receive	Correct	4	Configure LLDP I...	
LLDP Transmit	Correct	4	Configure LLDP I...	
GigabitEthernet0/0/1				
LLDP Receive	Correct	4	Configure LLDP I...	
LLDP Transmit	Correct	4	Configure LLDP I...	
HQ-SW-1				
CDP		0	Other	
CDP Enabled	Correct	5	Other	
LLDP		0	Ip	
Enabled	Correct	5	Configure LLDP	
Ports				
FastEthernet0/24				
LLDP Receive	Correct	4	Configure LLDP I...	
LLDP Transmit	Correct	4	Configure LLDP I...	
GigabitEthernet0/1		0	Other	
LLDP Receive	Correct	8	Configure LLDP I...	
HQ-SW-2				
CDP		0	Other	
CDP Enabled	Correct	5	Other	
LLDP		0	Ip	
Enabled	Correct	5	Configure LLDP	
Ports				
FastEthernet0/1				
LLDP Receive	Correct	4	Configure LLDP I...	
LLDP Transmit	Correct	4	Configure LLDP I...	
GigabitEthernet0/1		0	Other	
LLDP Receive	Correct	8	Configure LLDP I...	

Score : 105/105

Item Count : 20/20

Component	Items/Total	Score
Configure CDP	2/2	10/10
Configure CDP Interfaces	2/2	14/14
Configure LLDP	3/3	15/15
Configure LLDP Interfaces	10/10	48/48
Configure NTP Server	1/1	8/8
Other	2/2	10/10