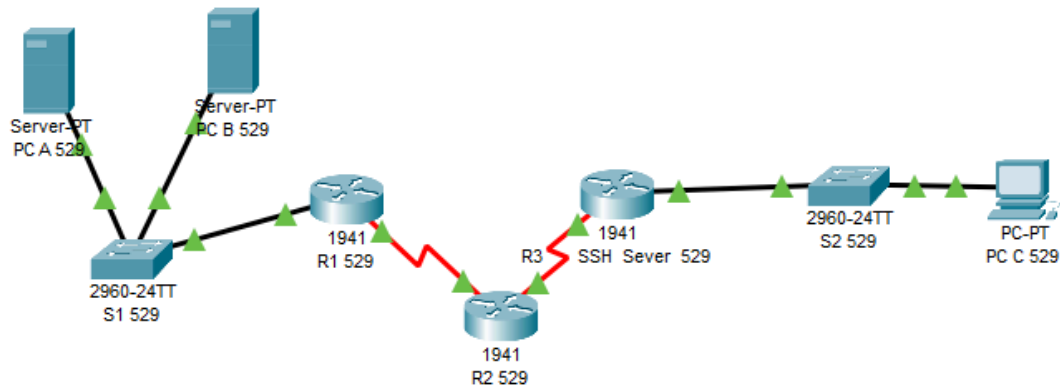


PRACTICAL 1

Packet Tracer - Configure Cisco Routers for Syslog, NTP, and SSH Operations

Topology:



Addressing Table

Device	Interface	IP Address	Subnet Mask	Default Gateway	Switch Port
R1	G0/1	192.168.1.1	255.255.255.0	N/A	S1 F0/5
	S0/0/0 (DCE)	10.1.1.1	255.255.255.252	N/A	N/A
R2	S0/0/0	10.1.1.2	255.255.255.252	N/A	N/A
	S0/0/1 (DCE)	10.2.2.2	255.255.255.252	N/A	N/A
R3	G0/1	192.168.3.1	255.255.255.0	N/A	S3 F0/5
	S0/0/1	10.2.2.1	255.255.255.252	N/A	N/A
PC-A	NIC	192.168.1.5	255.255.255.0	192.168.1.1	S1 F0/6
PC-B	NIC	192.168.1.6	255.255.255.0	192.168.1.1	S2 F0/18
PC-C	NIC	192.168.3.5	255.255.255.0	192.168.3.1	S3 F0/18

Part 1: Configure OSPF MD5 Authentication

The image displays the Cisco Packet Tracer interface. On the left, a network diagram shows two servers (Server-PT PCA 529 and Server-PT PC B 529) connected to a central router (2960-24TT S1 529). This router is connected to another router (R1 529), which is in turn connected to a third router (R2 529). The interface is set to 'Physical' mode.

Overlaid on the right is the CLI window for router R1 529. The window shows the following commands and output:

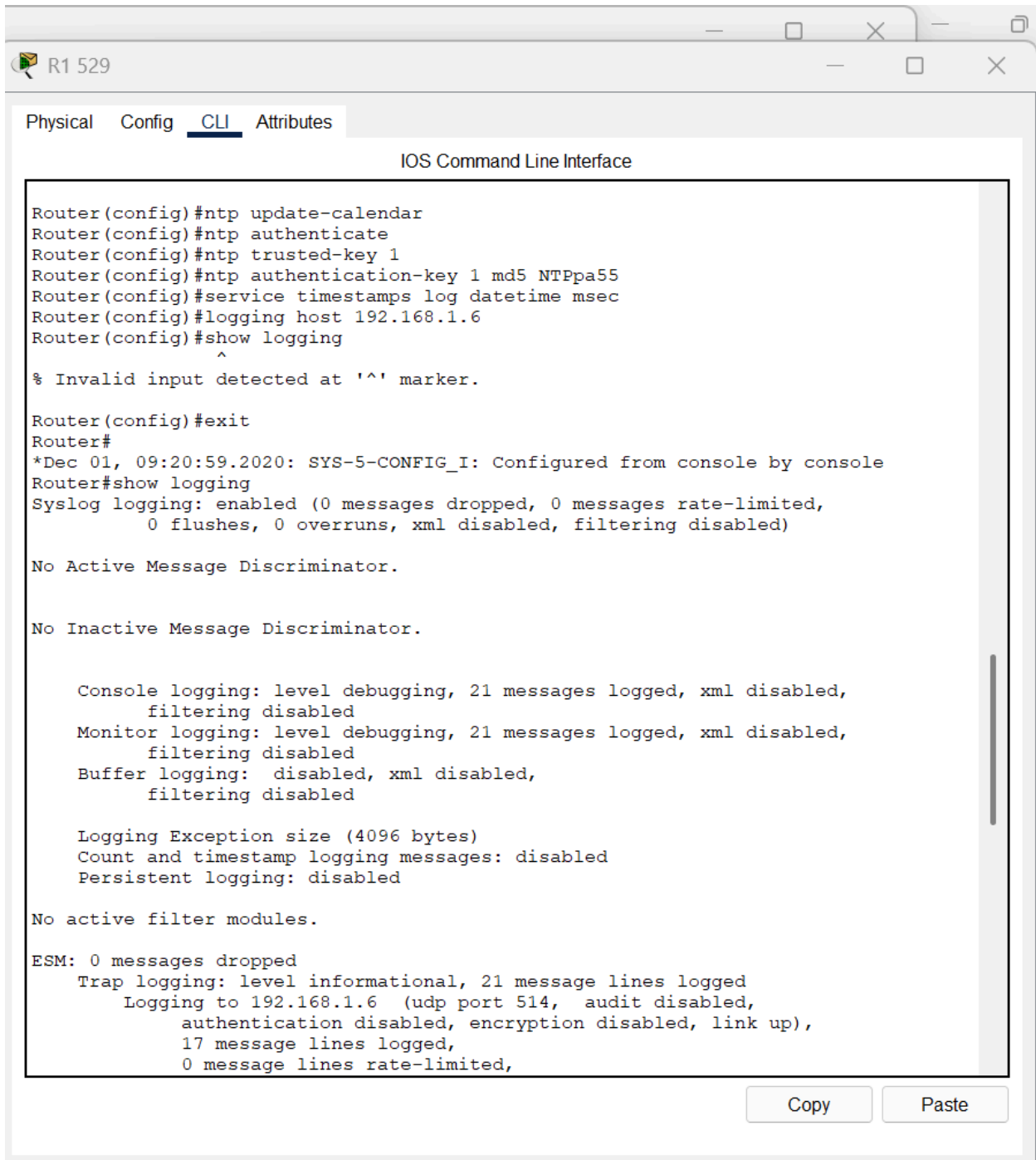
```
Router#config
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#area 0 authentication message-digest
Router(config-router)#interface Enter configuration commands, one per line. End with
CNTL/Z.
Router(config)#
Router(config)#interface Serial0/0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/1
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/0/0
Router(config-if)#interface s0/0/0
Router(config-if)#ip ospf message-digest-key 1 md5 MD5pa55
Router(config-if)#ntp server 192.168.1.5
Router(config)#show ntp status
Router#
% Invalid input detected at '^' marker.
Router#
Router#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show ntp status
Clock is unsynchronized, stratum 16, no reference clock
nominal freq is 250.0000 Hz, actual freq is 249.9990 Hz, precision is 2**24
reference time is 00000000.00000000 (00:00:00.000 UTC Mon Jan 1 1990)
clock offset is 0.00 msec, root delay is 0.00 msec
root dispersion is 0.00 msec, peer dispersion is 0.00 msec
loopfilter state is 'FSET' (Drift set from file), drift is - 0.000001193 s/s system poll
interval is 4, never updated.
Router#
```

The bottom of the interface shows a toolbar with various tools and a status bar indicating 'Serial DCE'.

Part 2: Configure NTP

Part 3: Configure Routers to Log Messages to the Syslog Server



The screenshot shows a Cisco IOS Command Line Interface (CLI) window for router R1 529. The window has tabs for Physical, Config, CLI (selected), and Attributes. The CLI shows the following commands and output:

```
Router(config)#ntp update-calendar
Router(config)#ntp authenticate
Router(config)#ntp trusted-key 1
Router(config)#ntp authentication-key 1 md5 NTPpa55
Router(config)#service timestamps log datetime msec
Router(config)#logging host 192.168.1.6
Router(config)#show logging
^
% Invalid input detected at '^' marker.

Router(config)#exit
Router#
*Dec 01, 09:20:59.2020: SYS-5-CONFIG_I: Configured from console by console
Router#show logging
Syslog logging: enabled (0 messages dropped, 0 messages rate-limited,
                0 flushes, 0 overruns, xml disabled, filtering disabled)

No Active Message Discriminator.

No Inactive Message Discriminator.

  Console logging: level debugging, 21 messages logged, xml disabled,
                    filtering disabled
  Monitor logging: level debugging, 21 messages logged, xml disabled,
                    filtering disabled
  Buffer logging:   disabled, xml disabled,
                    filtering disabled

  Logging Exception size (4096 bytes)
  Count and timestamp logging messages: disabled
  Persistent logging: disabled

No active filter modules.

ESM: 0 messages dropped
  Trap logging: level informational, 21 message lines logged
    Logging to 192.168.1.6 (udp port 514, audit disabled,
      authentication disabled, encryption disabled, link up),
      17 message lines logged,
      0 message lines rate-limited,
```

At the bottom of the window, there are 'Copy' and 'Paste' buttons.

Part 4: Configure R3 to Support SSH Connections

```
Router>enabl
Router#config ter
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#ip domain-name ccnasecurity.com
Router(config)#username SSHadmin privilege 15 secret ciscosshpa55
% Invalid input detected at '^' marker.

Router(config)#username SSHadmin privilege 15 secret ciscosshpa55
Router(config)#line vty 0 4
Router(config-line)#login local
Router(config-line)#transport input ssh
Router(config-line)#exit
Router(config)#crypto key zeroize rsa
% No Signature RSA Keys found in configuration.

Router(config)#crypto key generate rsa
% Please define a hostname other than Router.
Router(config)#hostname R3
R3(config)#crypto key generate rsa
The name for the keys will be: R3.ccnasecurity.com
Choose the size of the key modulus in the range of 360 to 4096 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

R3(config)#

R3 con0 is now available
```

Copy Paste

R3 SSH Sever 529

Physical Config CLI Attributes

IOS Command Line Interface

R3 con0 is now available

Press RETURN to get started.

*Mar 02, 02:09:21.099: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to down

*Mar 02, 02:09:21.099: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0/1, changed state to up

R3>ip ssh time-out 90

^

% Invalid input detected at '^' marker.

R3>enable

R3#config ter

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

R3(config)#ip ssh time-out 90

R3(config)#ip ssh authentication-retries 2

R3(config)#ip ssh version 2

R3(config)#end

R3#

*Mar 02, 03:41:54.4141: SYS-5-CONFIG_I: Configured from console by console

R3#show ip ssh

SSH Enabled - version 2.0

Authentication timeout: 90 secs; Authentication retries: 2

R3#

CopyPaste

☐ Top

