Lab Exam Documentation
By RA2211030050009

Objective
Set up and configure a network topology using RIP and OSPF routing protocols in Cisco Packet Tracer, and customize the network by assigning names and IP addresses based on the last three digits of the roll number.

1. Network Topology Design

Topology Overview
The network consists of:
- Two LANs (LAN 1 and LAN 2)
- Two switch (Switch 1 for LAN 1 and Switch 2 for LAN 2)
- Two routers (Router 1 with RIP, Router 2 with OSPF)
- WAN connection between the two routers

Device List
- Computers:
  - PC_001
  - PC_002
  - PC_003
  - PC_004
  - PC_005
  - PC_011
  - PC_012
  - PC_013
  - PC_014
  - PC_015
- Switches:
  - Switch 1
  - Switch 2
- Routers:
  - Router 1 (RIP)
  - Router 2 (OSPF)

2. IP Address Configuration

Subnets
- LAN 1: 192.168.1.0/24
  - PC_001: 192.168.1.1
  - PC_002: 192.168.1.2
  - PC_003: 192.168.1.3
  - PC_004: 192.168.1.4

  - PC_005: 192.168.1.5
  - Switch 1: 192.168.1.254 (Management IP)

- LAN 2: 192.168.2.0/24
  - PC_011: 192.168.2.11
  - PC_012: 192.168.2.12
  - PC_013: 192.168.2.13
  - PC_014: 192.168.2.14
  - PC_015: 192.168.2.15
  - Switch 2: 192.168.2.254 (Management IP)

3. Routing Protocols Configuration

Router 1 (RIP Configuration)
1. Access Router 1 CLI:

```
enable
configure terminal
```

2. Configure Interfaces:

```
interface FastEthernet0/0
ip address 192.168.1.1 255.255.255.0
no shutdown

interface Serial0/0/0  # Adjust based on WAN link
ip address [WAN_IP_R1] [WAN_Subnet_Mask]
no shutdown
```

3. Enable RIP:

```
router rip
version 1
network 192.168.1.0
netWork [WAN_Network_R1]  # e.g., 10.0.0.0
```

Router 2 (OSPF Configuration)
1. Access Router 2 CLI:
```
enable
configure terminal
```

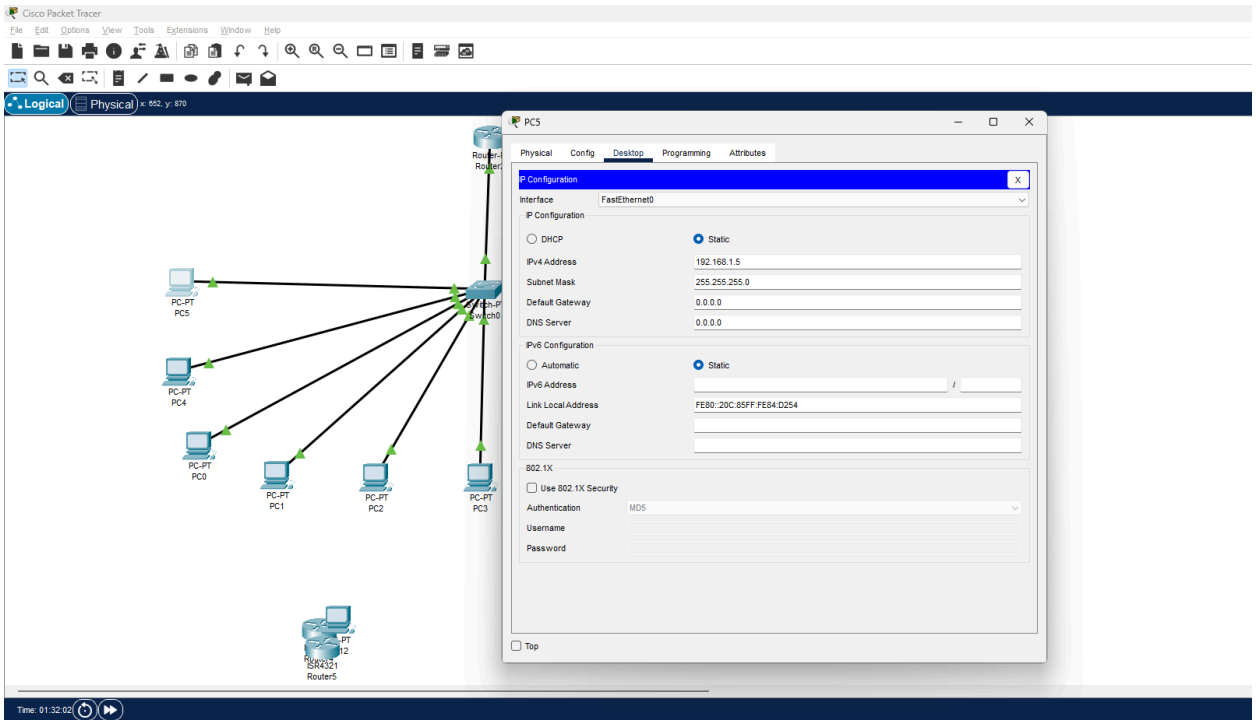
2. Configure Interfaces:
   ```
   interface FastEthernet0/0
   ip address 192.168.2.1 255.255.255.0
   no shutdown

   interface Serial0/0/0  # Adjust based on WAN link
   ip address [WAN_IP_R2] [WAN_Subnet_Mask]
   no shutdown
   ```
3. Enable OSPF:
   ```
   router ospf 1
   network 192.168.2.0 0.0.0.255 area 0
   network [WAN_Network_R2] 0.0.0.3 area 0  # e.g., 10.0.0.0
   ```

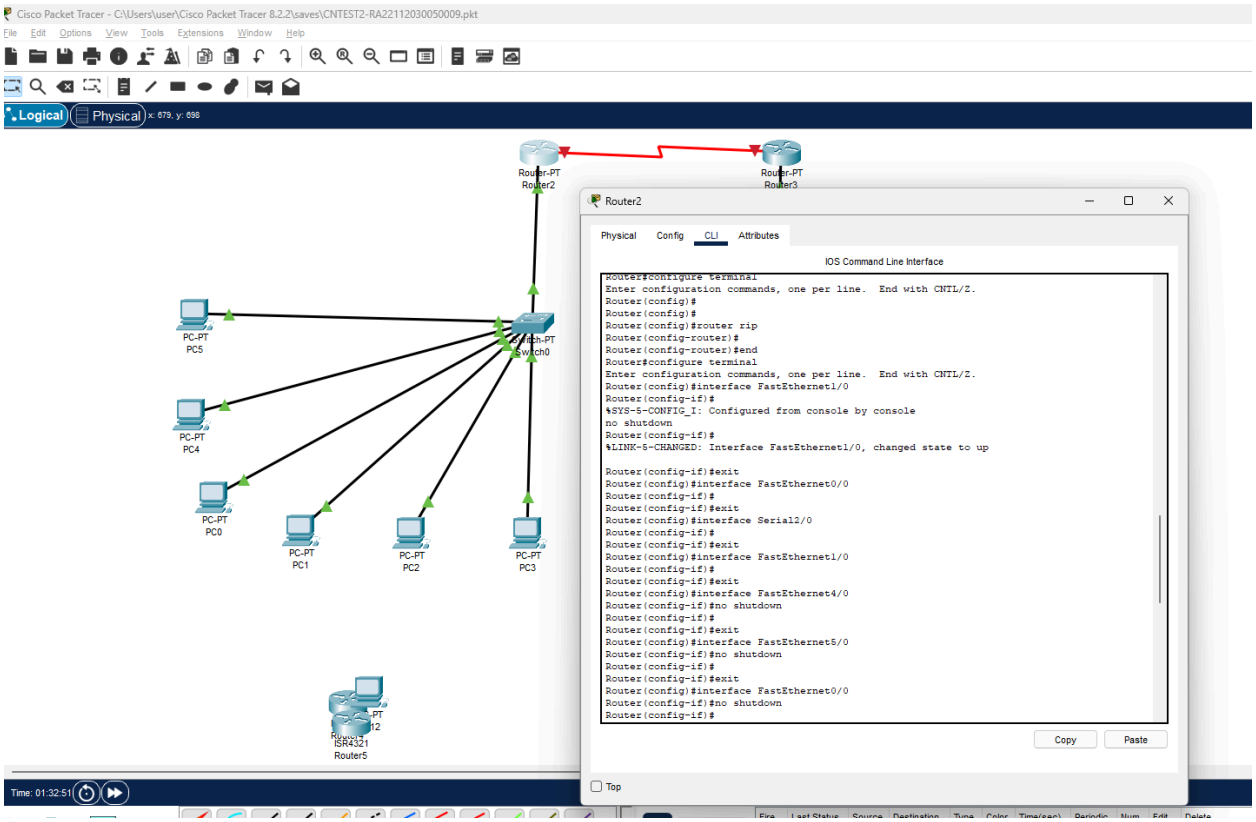
4. Testing and Simulation

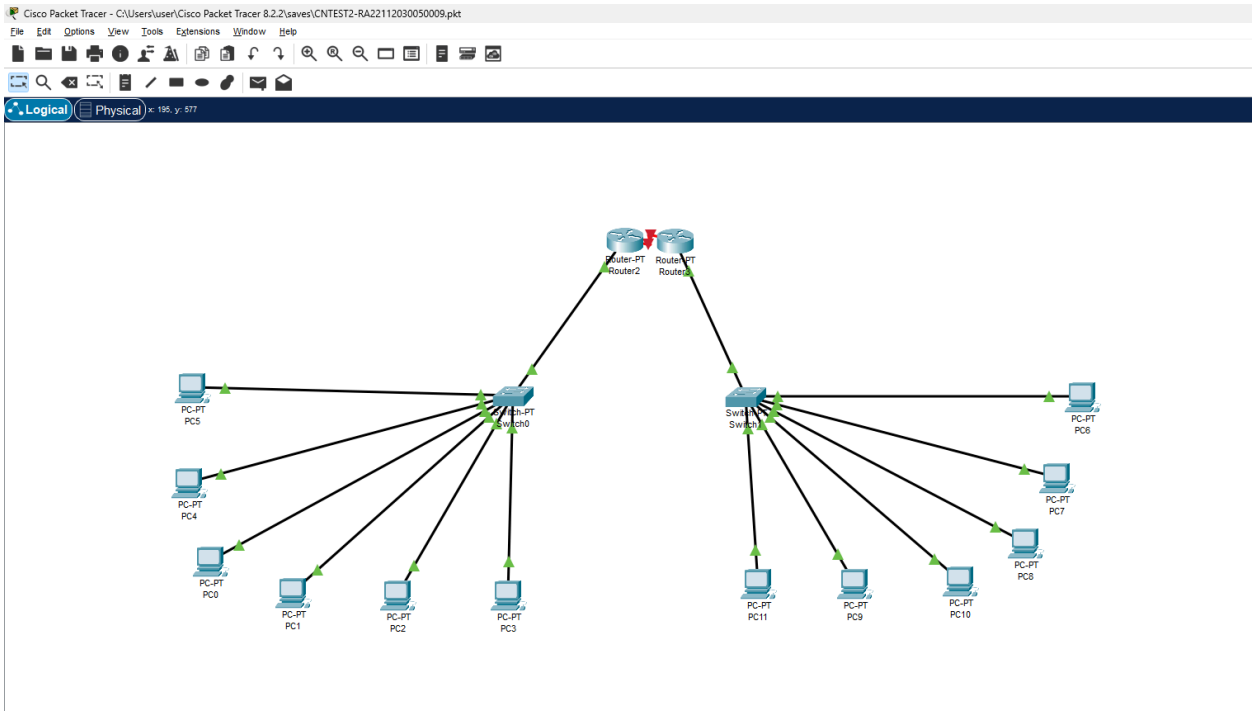
Testing Connectivity
1. Ping Test:
   - From PC_001 (192.168.1.1), open Command Prompt and ping PC_011 (192.168.2.11):

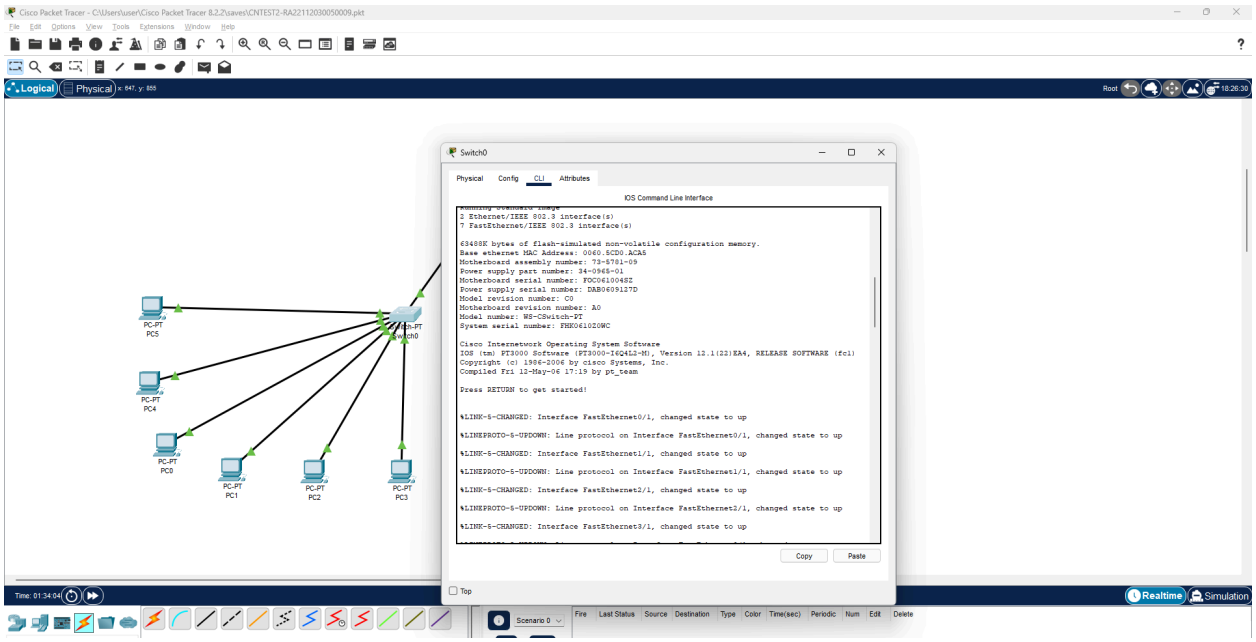
     ping 192.168.2.11
     ```
   - Verify successful responses to ensure communication between LANs.

Simulation Mode
- Switch to Simulation Mode
- Test message transmission between PCs in different LANs to verify the routing protocols' functionality.

5. Documentation and Submission
     ```

Screenshots

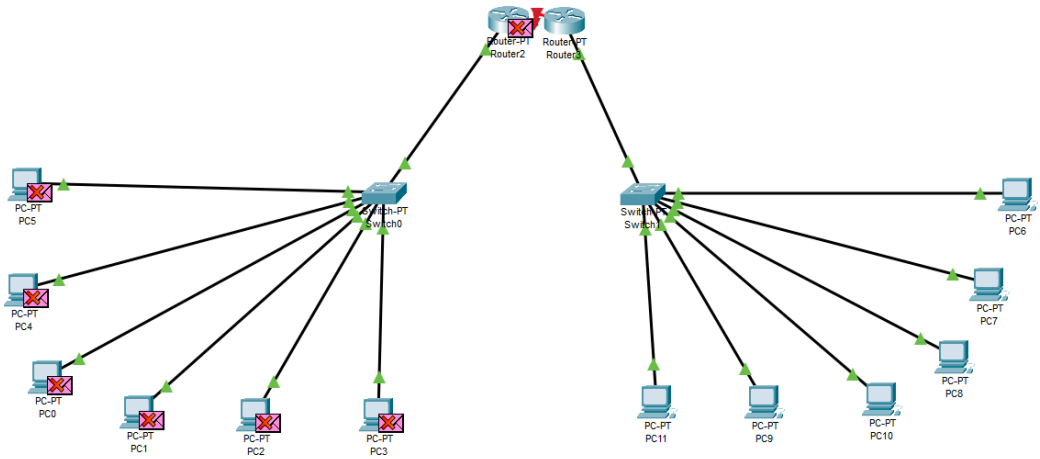


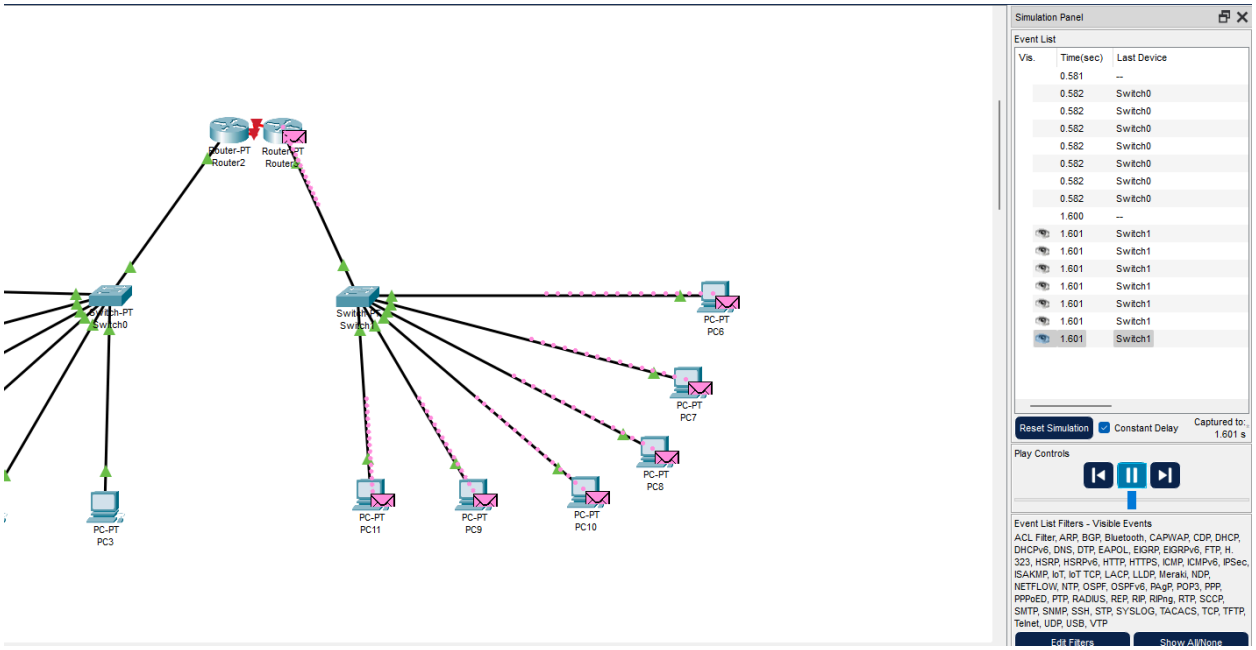

Cisco Packet Tracer - C:\Users\user\Cisco Packet Tracer 8.2.2\saves\CNTEST2-RA22112030050009.pkt
File Edit Options View Tools Extensions Window Help
Logical Physical x: 679, y: 898
Router-PT Router2
Router-PT Router3
PC-PT PC5
PC-PT PC4
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Switch-PT Switch0
ISR4321 Router5
Time: 01:32:51
Router2
Physical Config CLI Attributes
IOS Command Line Interface
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#
Router(config)#
Router(config)#router rip
Router(config-router)#
Router(config-router)#end
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet1/0
Router(config-if)#
%SYS-5-CONFIG_I: Configured from console by console
no shutdown
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet1/0, changed state to up
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial2/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet4/0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet5/0
Router(config-if)#no shutdown
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#no shutdown
Router(config-if)#
Copy
Paste
Top

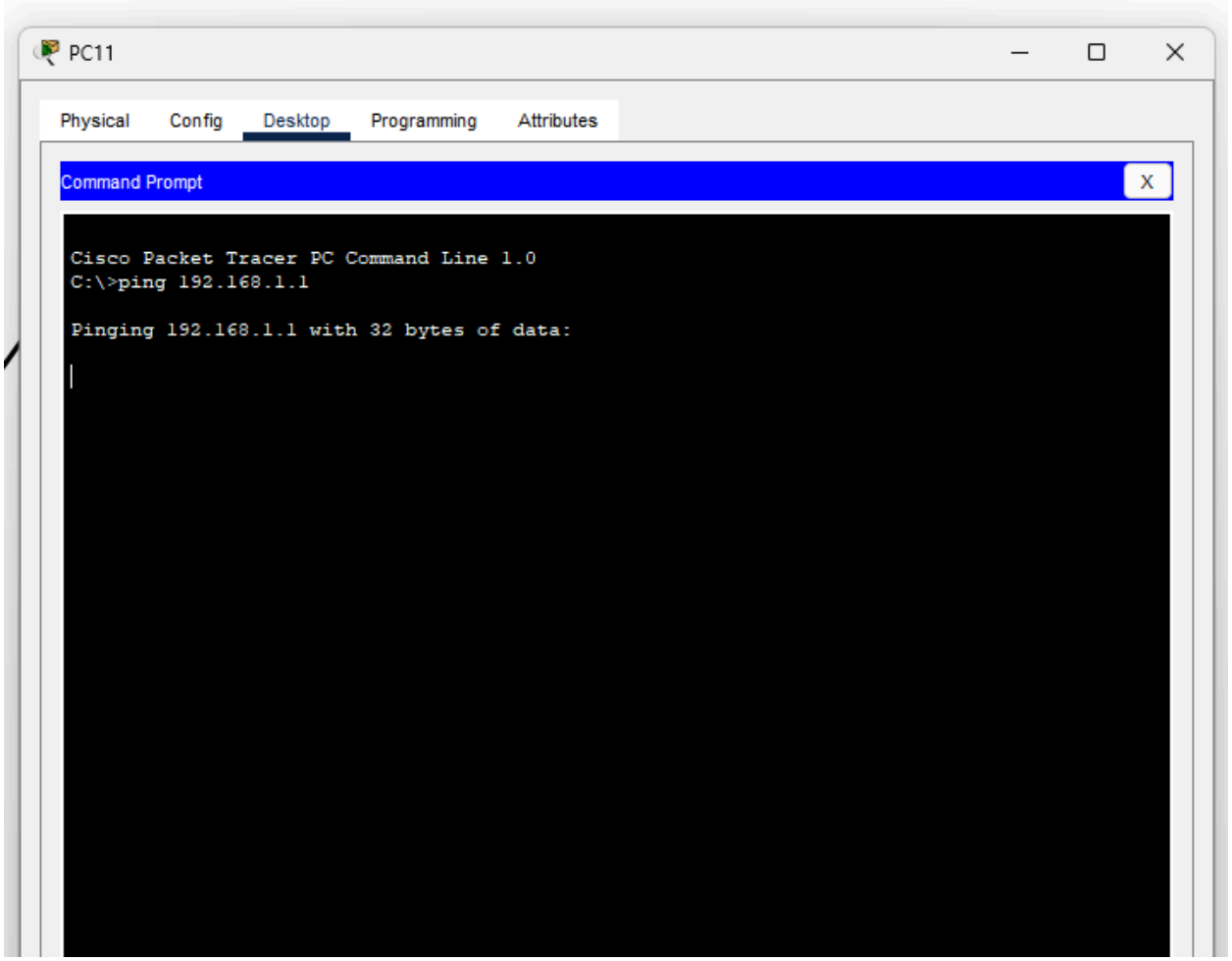

Cisco Packet Tracer - C:\Users\user\Cisco Packet Tracer 8.2.2\saves\CNTEST2-RA22112030050009.pkt
File Edit Options View Tools Extensions Window Help
Logical Physical x: 195, y: 577
Router-PT Router2
Router-PT Router3
PC-PT PC5
PC-PT PC4
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Switch-PT Switch0
Switch-PT Switch1
PC-PT PC6
PC-PT PC7
PC-PT PC8
PC-PT PC9
PC-PT PC10
PC-PT PC11


Switch0
Physical
Config
CLI
Attributes
IOS Command Line Interface
2 Ethernet/IEEE 802.3 interface(s)
7 FastEthernet/IEEE 802.3 interface(s)
63488K bytes of flash-simulated non-volatile configuration memory.
Base ethernet MAC Address: 0060.5CD0.ACA5
Motherboard assembly number: 73-5781-09
Power supply part number: 34-0965-01
Motherboard serial number: FOC06100A5Z
Power supply serial number: DAB0609127D
Model revision number: C0
Motherboard revision number: A0
Model number: WS-CSwitch-PT
System serial number: FHK0610Z0WC
Cisco Internetwork Operating System Software
IOS (tm) PT3000 Software (PT3000-I6Q4L2-M), Version 12.1(22)EA4, RELEASE SOFTWARE (fc1)
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Fri 12-May-06 17:19 by pt_team
Press RETURN to get started!
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet1/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet2/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet3/1, changed state to up
Copy
Paste
Top
PC-PT PC5
PC-PT PC4
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Realtime
Simulation


Physical
x: 1302, y: 803


Router-PT Router2
Router-PT Router1
PC-PT PC5
Switch-PT Switch0
PC-PT PC4
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Switch-PT Switch1
PC-PT PC6
PC-PT PC7
PC-PT PC8
PC-PT PC10
PC-PT PC9
PC-PT PC11


Router-PT
Router2
Router-PT
Router1
Switch-PT
Switch0
Switch-PT
Switch1
PC-PT
PC3
PC-PT
PC11
PC-PT
PC9
PC-PT
PC10
PC-PT
PC8
PC-PT
PC7
PC-PT
PC6
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
0.581 --
0.582 Switch0
0.582 Switch0
0.582 Switch0
0.582 Switch0
0.582 Switch0
0.582 Switch0
0.582 Switch0
1.600 --
1.601 Switch1
1.601 Switch1
1.601 Switch1
1.601 Switch1
1.601 Switch1
1.601 Switch1
1.601 Switch1
Reset Simulation
Constant Delay
Captured to:
1.601 s
Play Controls
Event List Filters - Visible Events
ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP
Edit Filters
Show All/None


PC11
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1
Pinging 192.168.1.1 with 32 bytes of data: