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Q.1)

Problem Statement : There is an organisation X with multiple departments. Design a network for the HR department & size of the department is 10 users. Also show the communication b/w user number 1 & user number 5 of the network.

Objective : Need to create a visual LAN environment in Cisco Packet Tracer that will show communication b/w a users.

Steps

Step 1 : We will place nodes first : organisation X HR Department & user 1 to user 10.

Step 2 : Add routers & also add switch & connect them both at the top

Step 3 : Add 10 machine named from PC0 to PC9 & connect all machine to switch.

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Step 4: Assign IP address to every machine

Step 4(a): In our case we will assign IP 192.168.1.1 to PC0 & IP 192.168.1.5 to PC4 which is user 5.

Step 5: Now there are 2 ways to verify the connection b/w 2 users network.

First method: By Pinging by its system ID & if reply comes so its working state.

Second method: By sending PDU packets from 1 to user 5.

Step 6: we can now see both system are getting pinged through IP on other system & we also being send to both system.

Step 7: Hence we are able to communicate b/w 2 users User 1 & user 5 on HR Department.

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Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical Physical

```

graph TD
    Switch[2531-34T Switch0]
    PC0[PC-PT PC0]
    PC1[PC-PT PC1]
    PC2[PC-PT PC2]
    PC3[PC-PT PC3]
    PC4[PC-PT PC4]
    PC5[PC-PT PC5]
    PC6[PC-PT PC6]
    PC7[PC-PT PC7]
    PC8[PC-PT PC8]
    PC9[PC-PT PC9]
    Switch --- PC0
    Switch --- PC1
    Switch --- PC2
    Switch --- PC3
    Switch --- PC4
    Switch --- PC5
    Switch --- PC6
    Switch --- PC7
    Switch --- PC8
    Switch --- PC9
    
```

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device
	0.000	...	PC0

Reset Simulation Constant Delay Captured to: 0.000 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, PPPoE, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Time: 00:07:22.747 PLAY CONTROLS

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	In Progress	PC0	PC4	ICMP		0.000	N	0	(edit)	(delete)

Type here to search

33°C Haze 09:38 AM 22-06-2021

Cisco Packet Tracer

File Edit Options View Tools Extensions Window Help

Logical

Physical

1064, 361

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device
	0.001	PC0	Switch0
	0.002	Switch0	PC4
	0.003	PC4	Switch0
	0.004	Switch0	PC0

Reset Simulation Constant Delay Captured to: 0.004 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, PPPoE, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

hr department of A

Switch0

user1 PC-PT PC0

user2 PC-PT PC1

user3 PC-PT PC2

user4 PC-PT PC3

user5 PC-PT PC4

user6 PC-PT PC5

user7 PC-PT PC6

user8 PC-PT PC7

user9 PC-PT PC8

PC-PT PC9

Time: 00:07:36.315

PLAY CONTROLS

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC4	ICMP		0.000	N	0	(edit)	(delete)

Type here to search

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Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device
	0.001	PC0	Switch0
	0.002	Switch0	PC4
	0.003	PC4	Switch0
	0.004	Switch0	PC0

Reset Simulation ☒ Constant Delay Captured to: 0.004 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, PPPoE, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC4	ICMP		0.000	N	0	(edit)	(delete)