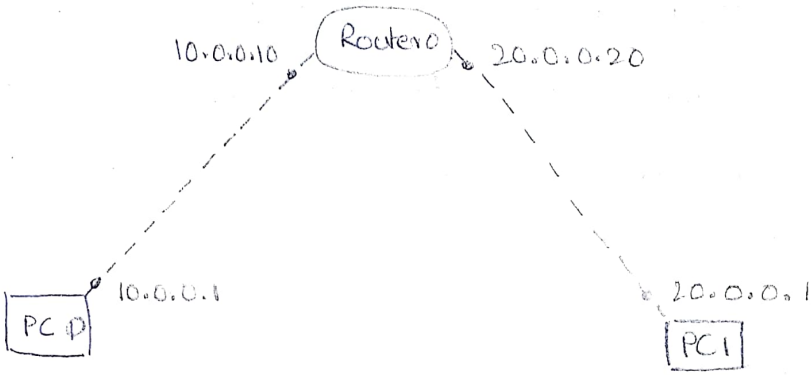
Experiment - 2

Name of the experiment: ~~Create~~ Configure IP address to routers in packet tracer. Explore the following messages: ping responses, destination unreachable, request timed out, reply.

2a:

Aim: To Configure IP address to routers in packet tracer and get ~~req~~ ping responses - request timed out, reply.

Topology:



Procedure:

- 2 PCs are connected to a router using copper cross over
- IP addresses are set for PCs and Router
- IP address for Router is set by giving following commands —

```
router > enable
router # config t
router(config)# ip address 10.0.0.10 255.0.0.0
router(config)# interface fastethernet 0/0
router (config-if)# ip address 10.0.0.10 255.0.0.0
router (config-if)# no shut
router (config-if)# exit
router(config)# interface fastethernet 1/0
router (config-if)# ip address 20.0.0.10 255.0.0.0
router (config-if)# no shut
router (config-if)# exit
```

- after all IPs are set, ping message is sent.

Result: PC> ping 20.0.0.1

pinging 20.0.0.1 with 32 bytes of data:

Request timed out.
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.1:
packets: sent = 4, received = 3, lost = 1 (25% loss), approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

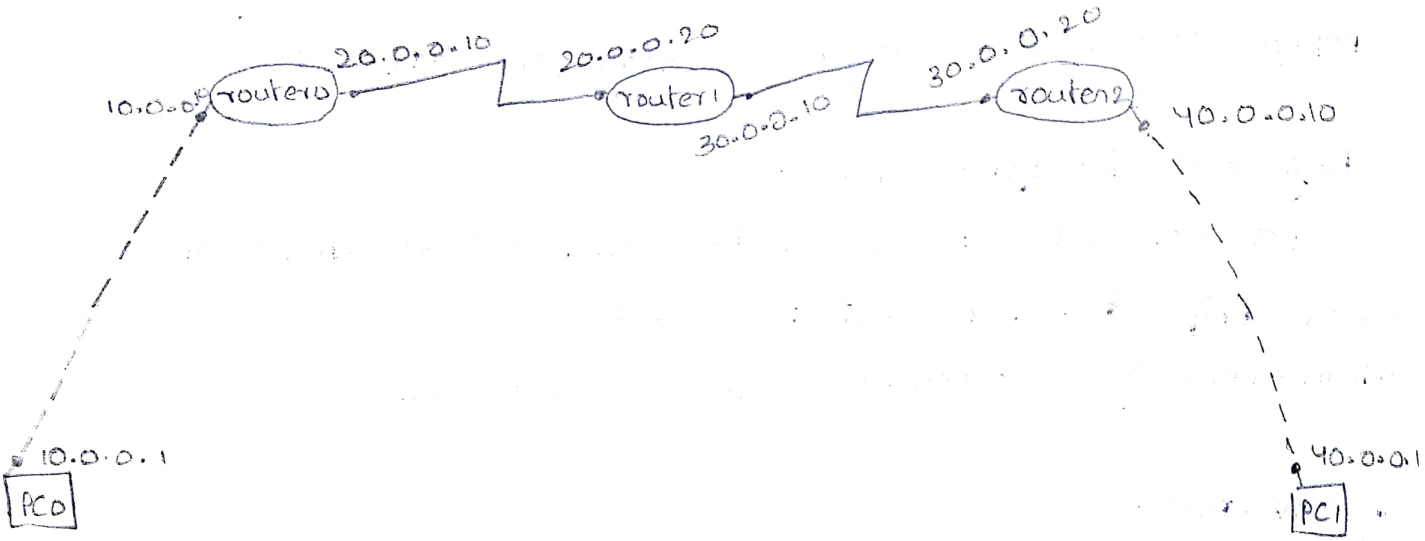
Observation:

PC 0 is in network 10.0.0.0 and PC1 is in 20.0.0.0. Hence we use router to connect them. when a ping message is sent from PC 10.0.0.1 to 20.0.0.1, the message reaches the destination through router. when a message is sent, the router captures it and sends to the distination PC which is in another network.

2b:

Aim: To configure IP address to routers in packet tracer and get ping responses, destination host unreachable, replies.

Topology:



Procedure:

- Connect ~~corresponding~~ PC to corresponding routers using copper cross-over
- connect routers using serial - DCE.
- set IP address for PCs.
- configure IP address to routers by giving commands in CLI
- After all IPs are set, ping PC to get distination host unreachable message
- route the IPs to the adjacent IPs using following command -

for router0 — router(config)# ip route 30.0.0.0 255.0.0.0 20.0.0.20

router(config)# ip route 40.0.0.0 255.0.0.0 20.0.0.20

for router 1– router(config)# ip route 10.0.0.0 255.000
20.0.0.10

router(config)# ip route 40.0.0.0 255.0.0.0
30.0.0.20

for router 2– router(config)# ip route 10.0.0.0 255.0.0
30.0.0.10

router(config)# ip route 20.0.0.0 255.0.0.0
30.0.0.10

- After this is done, ping PC to get reply messages.

Result :

① PC> ping 40.0.0.1

pinging 40.0.0.1 with 32 bytes of data:

Reply from 10.0.0.10: Destination host unreachable
Reply from 10.0.0.10: Destination host unreachable
Reply from 10.0.0.10: Destination host unreachable
Reply from 10.0.0.10: Destination host unreachable

Ping statics for 40.0.0.1:

packets: sent = 4, Received = 0, lost = 4 (100% loss),

PC> ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.10: bytes=32 time=16ms TTL=128
Reply from 10.0.0.10: bytes=32 time=1ms TTL=128
Reply from 10.0.0.10: bytes=32 time=2ms TTL=128
Reply from 10.0.0.10: bytes=32 time=4ms TTL=128

ping statics for 10.0.0.1:

Packets: sent=4, Received=4, Loss=0, (0% loss)

Approximate round trip times in milli-seconds:

Minimum=1ms, maximum=16ms, average=6ms

Observation:

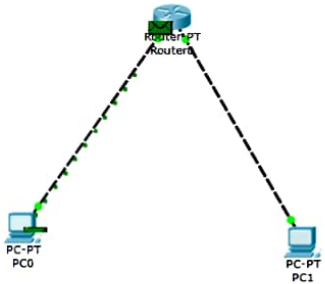
PC0 is in network 10.0.0.0 and PC1 is in network 40.0.0.0. There the 3 routers in between which initially directly connects 10.000, 20.0.0.0, 30.0.0.0 and 40.0.0.0. Hence when a ping message is sent from 40.0.0.1 to 40.0.0.1, it doesn't reach the destination. Instead it only reaches the first router and gives destination host unreachable message.

After letting the routers know about other adjacent networks, (next hops) we send a ping message from 40.0.0.1 to 10.0.0.1 to get desired result. The message reaches the destination.

Cisco Packet Tracer Student - E:\4th sem\CN lab\expt 2a.pkt

File Edit Options View Tools Extensions Help

Logical [Root] New Cluster Move Object Set Tiled Background Viewport



Simulation Panel

Event List

Vis.	Time(sec)	Last Devi	At Devic	Type	Info
	0.000	--	PC1	ICMP	
	0.001	PC1	Router0	ICMP	
	0.002	Router0	PC0	ICMP	

Reset Simulation | Constant Delay | Captured to: 0.002 s

Play Controls

Back | Auto Capture / Play | Capture / Forward

Event List Filters - Visible Events

ACL Filter, ARP, BGP, CDP, DHCP, DHCPv6, DNS, DTP, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, LACP, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, RADIUS, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, VTP

Edit Filters | Show All/None

Time: 00:03:10.452 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward Event List Simulation

Routers

1841 1941 2620XM 2621XM 2811 2901 2911 819 Generic Generic

(Select a Device to Drag and Drop to the Workspace)

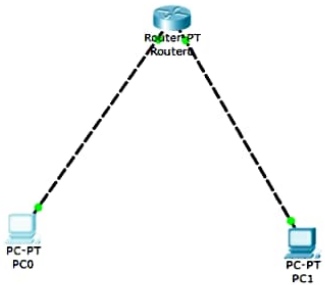
Scenario 0 New Delete Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(se	Periodic	Num	Edit	Delete
	In Progress	PC1	PC0	ICMP		0.000	N	0	(edit)	(delete)

Cisco Packet Tracer Student - E:\4th sem\CN lab\expt 2a.pkt

File Edit Options View Tools Extensions Help

Logical [Root] New Cluster Move Object Set Tiled Background Viewport



PC0

Physical Config Desktop Custom Interface

Command Prompt X

```
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=1ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127
Reply from 20.0.0.1: bytes=32 time=0ms TTL=127

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>
```

Time: 00:08:14 Power Cycle Devices Fast Forward Time Realtime

Routers

1841 1941 2620XM 2621XM 2811 2901 2911 819 Generic Generic

(Select a Device to Drag and Drop to the Workspace)

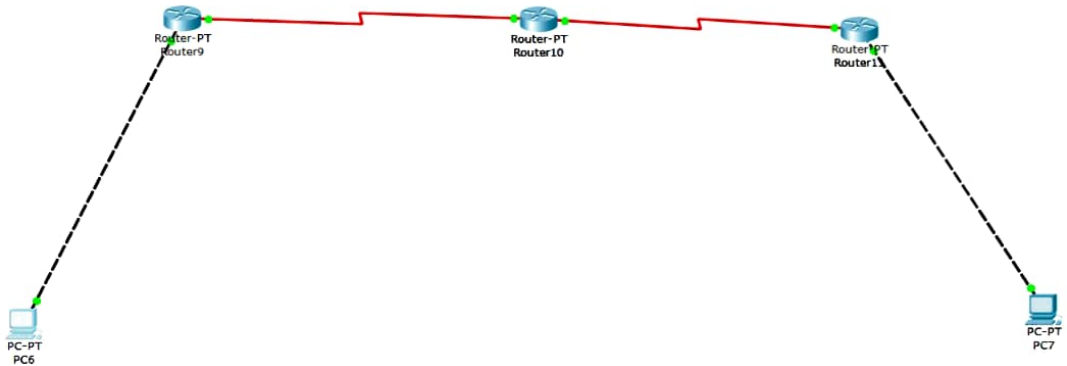
Scenario 0 New Delete Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(se	Periodic	Num	Edit	Delete
	Successful	PC1	PC0	ICMP		0.000	N	0	(edit)	(delete)

Cisco Packet Tracer Student

File Edit Options View Tools Extensions Help

Logical [Root] New Cluster Move Object Set Tiled Background Viewport



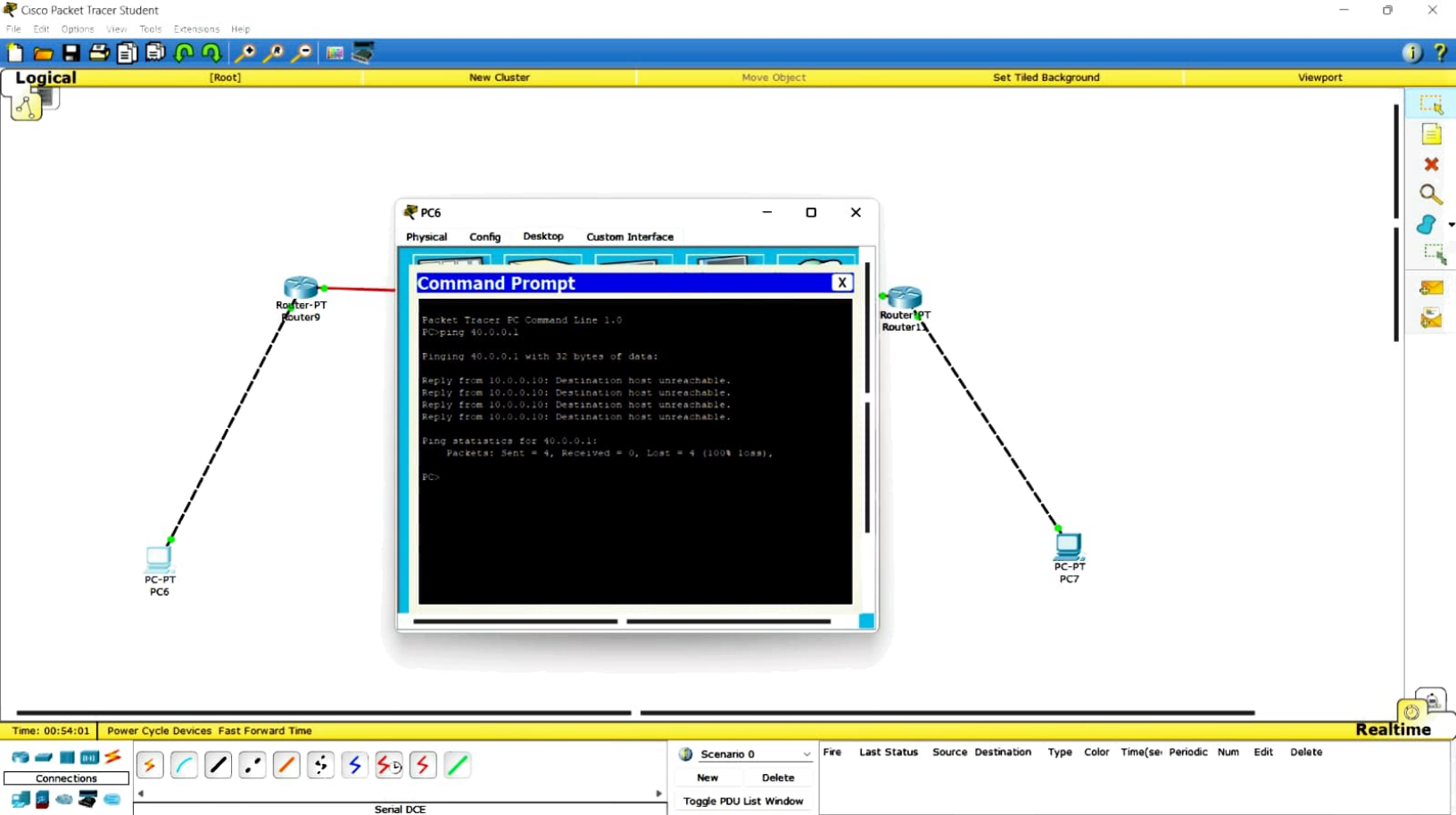
Time: 00:53:50 Power Cycle Devices Fast Forward Time Realtime

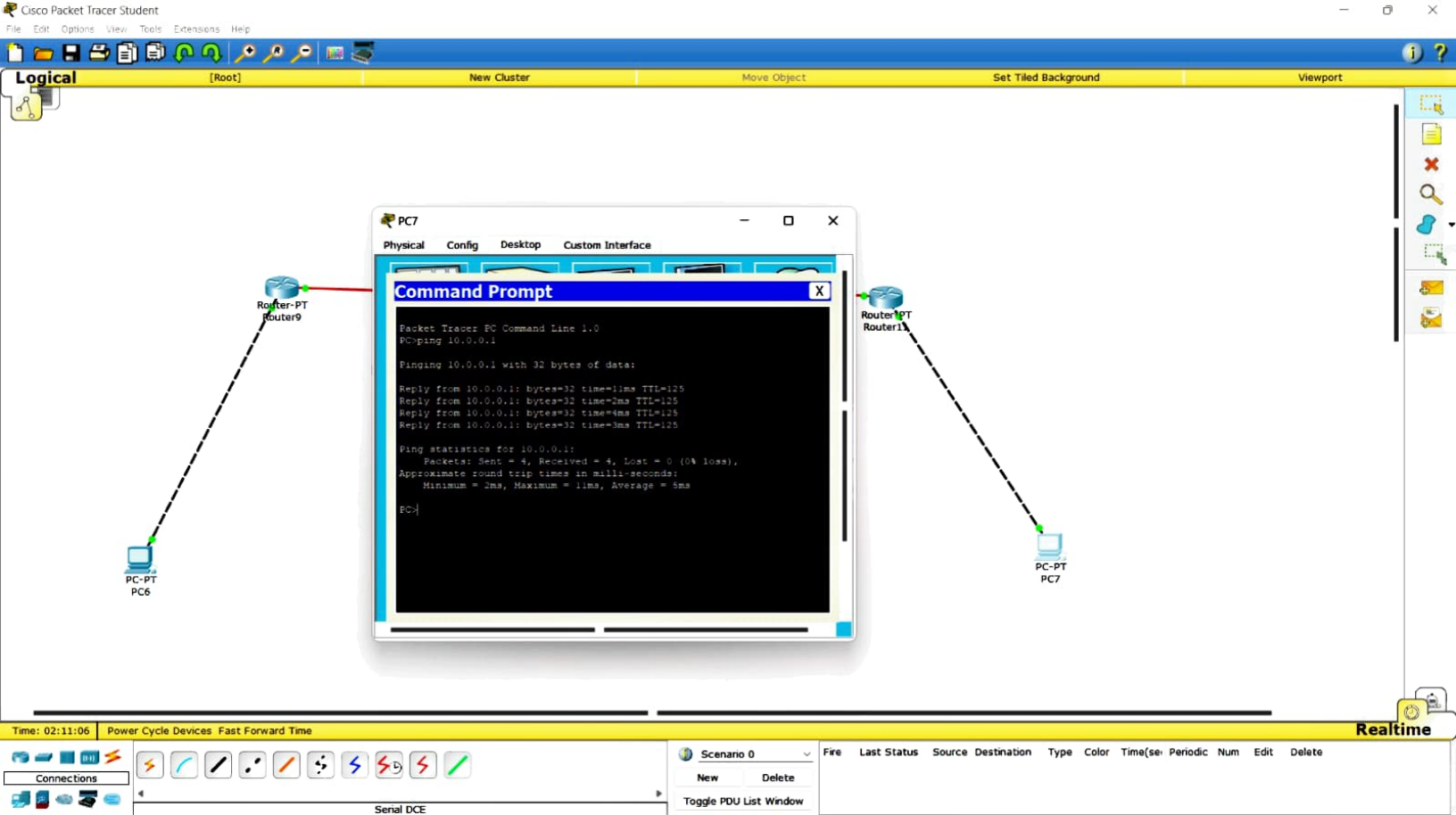
Connections

Serial DCE

Scenario 0 New Delete Toggle PDU List Window

Fire Last Status Source Destination Type Color Time(se Periodic Num Edit Delete


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC6
Physical
Config
Desktop
Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 40.0.0.1
Pinging 40.0.0.1 with 32 bytes of data:
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Reply from 10.0.0.10: Destination host unreachable.
Ping statistics for 40.0.0.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>
Router-PT
Router9
Router-PT
Router11
PC-PT
PC6
PC-PT
PC7
Time: 00:54:01
Power Cycle Devices Fast Forward Time
Realtime
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(se
Periodic
Num
Edit
Delete


Cisco Packet Tracer Student
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC7
Physical
Config
Desktop
Custom Interface
Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1
Pinging 10.0.0.1 with 32 bytes of data:
Reply from 10.0.0.1: bytes=32 time=11ms TTL=125
Reply from 10.0.0.1: bytes=32 time=2ms TTL=125
Reply from 10.0.0.1: bytes=32 time=4ms TTL=125
Reply from 10.0.0.1: bytes=32 time=3ms TTL=125
Ping statistics for 10.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 11ms, Average = 5ms
PC>
Router-PT
Router9
Router-PT
Router11
PC-PT
PC6
PC-PT
PC7
Time: 02:11:06
Power Cycle Devices Fast Forward Time
Realtime
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time(se
Periodic
Num
Edit
Delete