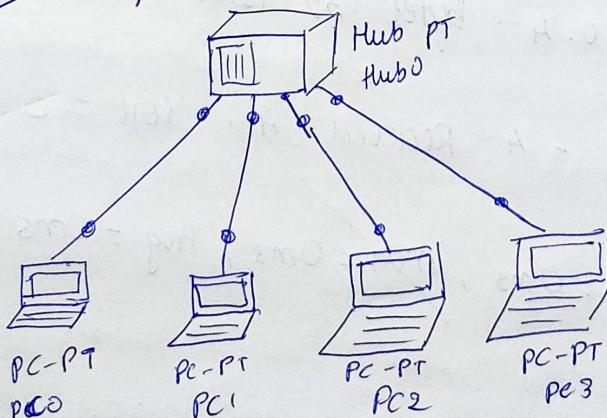


Creating a topology and simulate sending a simple PDU from source to destination using hub and switch as connecting device

### (1) Using Hub as connecting device:



- \* Pick 4 end devices and place it on the area.
- \* Use & Pick a hub and connect it with all 4 devices.
- \* Configure the end devices and set their IP address  
10.0.0.1, 10.0.0.2, 10.0.0.3, 10.0.0.4.
- \* Now, add a simple PDU from source to destination end devices.
- \* Go to simulation mode and click Auto Capture / Play to view the simulation.
- \* Or, click on the end device during ~~command prompt~~ command prompt type the command "ping 10.0.0.4" to do in Realtime mode.   
→ can be any destination not necessarily 10.0.0.4.
- \* We see that the PDU is going from source to hub and to all the devices. But only the correct destination accepts the PDU.



(2) using switch as connecting device:

- \* Pick 4 end devices and place it in the area
- \* Pick a switch and connect it with all devices
- \* Configure the end devices and set their IP addresses  
10.0.0.5, 10.0.0.6, 10.0.0.7, 10.0.0.8.

### Event List

Time (sec)	Last Device	At Device
0.000	---	PC0
0.001	PC0	Hub0
0.002	Hub0	PC1
0.002	Hub0	PC2
0.002	Hub0	PC3
0.003	PC3	Hub0

Real time (event list):

Fire	Last Status	source	Destination	time	Periodic
	successful	PC0	PC3	0.000	N

command prompt (Ping)

C: >> ping 10.0.0.4

Pinging 10.0.0.4 : bytes = 32 time = 0 ms

Statistics

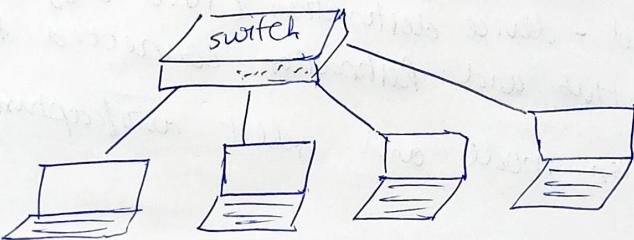
packets: sent = 4, Received = 4, lost = 0

Round trip time

Minimum = 0ms, max = 0ms, Avg = 0ms

## Talk 2 : Using a switch:

- \* From device type selection box select 4 devices by clicking on end devices.
- \* Then select switch and connect all the devices to the switch . Configure the devices by setting the IP address : 10.0.0.5 to 10.0.0.8.
- \* Next in simulation mode add PDU from source to destination and click on "auto capture / Play"
- \* We observe that the PDU packets is being sent only to the desired device (destination)



### Event list

Time (Sec)	Last device	At device
0.00	---	PC4
0.001	PC4	switch0
0.002	switch0	Laptop1
0.003	Laptop1	switch0
0.004	switch0	PC4

### Real time

Fire	Last status	source	Destination	Time	Periodic	Num
✓	Successful	PC4	Laptop1	0.000	N	1

Play

c: >> ping 10.0.0.8  
pinging 10.0.0.8 with 32 bytes of data.  
Reply from 10.0.0.8 bytes 32 time = 0ms TTL = 128  
statistics for 10.0.0.8 ~~lost~~  
Packets sent = 4, Received = 4, Lost = 0,

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~~20cm~~ Approx. round trip time.

min = 0ms, max=11ms. Avg. = 4ms

### Task - 3

Using both hub & switch as connecting devices

#### Procedure:

- \* We form an interconnected LAN by making a connection b/w the hub & switch established previously using a copper cross over connection.
- \* we add a PDU to end-device source (10.0.0.1) and to end-device destination (10.0.0.8). Source connected to Hub and Destination connected to switch.
- \* Enter simulation mode and select auto/capture / play.

Real time

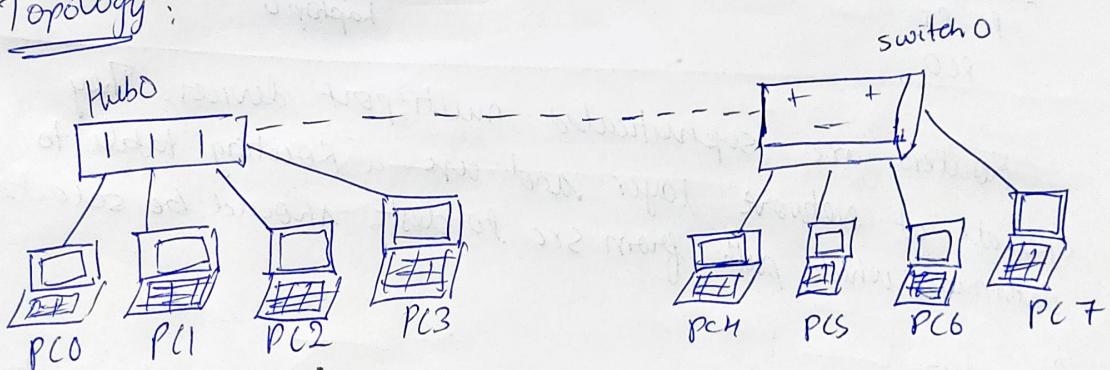
Fire	Last status	source	Destination	Time	Periodic
	successful	PC0	PCZ	0.000	N

- \* message moves from source device to hub.
- \* hub broadcasts the message to devices (10.0.0.2, 10.0.0.3, 10.0.0.4) and to the switch.
- \* The end devices reject the message.
- \* The switch receives the message and sends it to destination end device (10.0.0.8) directly and not to any other device.
- \* In the next cycle, message sent from device (10.0.0.8) goes to switch then to hub.
- \* Hub broadcasts it to devices (10.0.0.1, 10.0.0.2, 10.0.0.3, 10.0.0.4). Source device receives message.

## simulation model

Time	Last device	At device
0.000	-	PC0
0.001	PC0	Hub0
0.002	Hub0	switch0
0.003	switch0	PC7
0.004	PC7	switch0
0.005	switch0	Hub0
0.006	Hub0	PC4
0.006	Hub0	PC3
0.006	Hub0	PC2
0.006	Hub0	PC1

Topology :



Ping:

C:\> ping 10.0.0.8  
pinging 10.0.0.8 with 32 bytes of data

Reply from 10.0.0.8: bytes = 32 time = 1ms

Reply from 10.0.0.8: bytes = 32 time = 1ms

Reply from 10.0.0.8: bytes = 32 time = 1ms

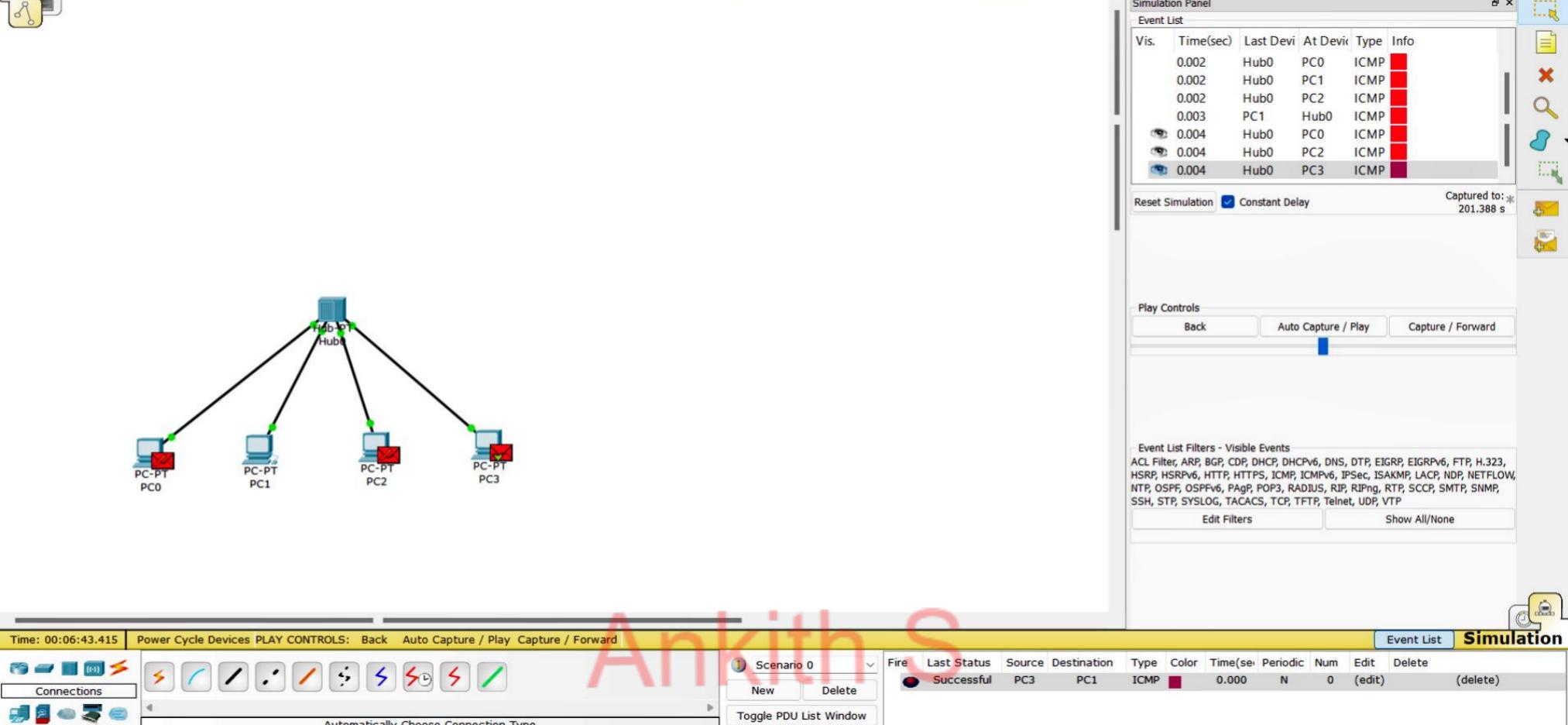
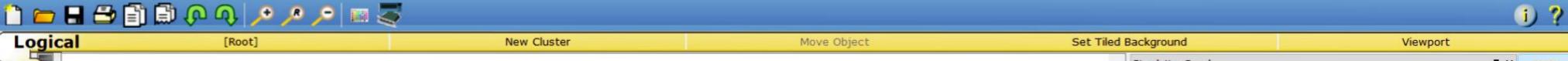
Reply from 10.0.0.8: bytes = 32 time = 1ms  
Statistics for 10.0.0.8

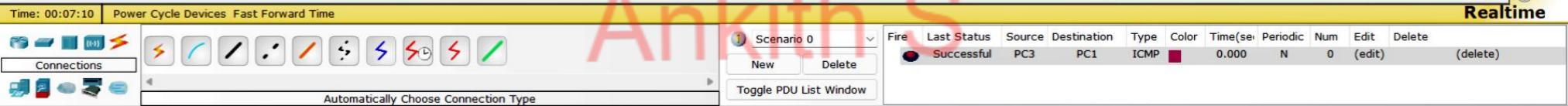
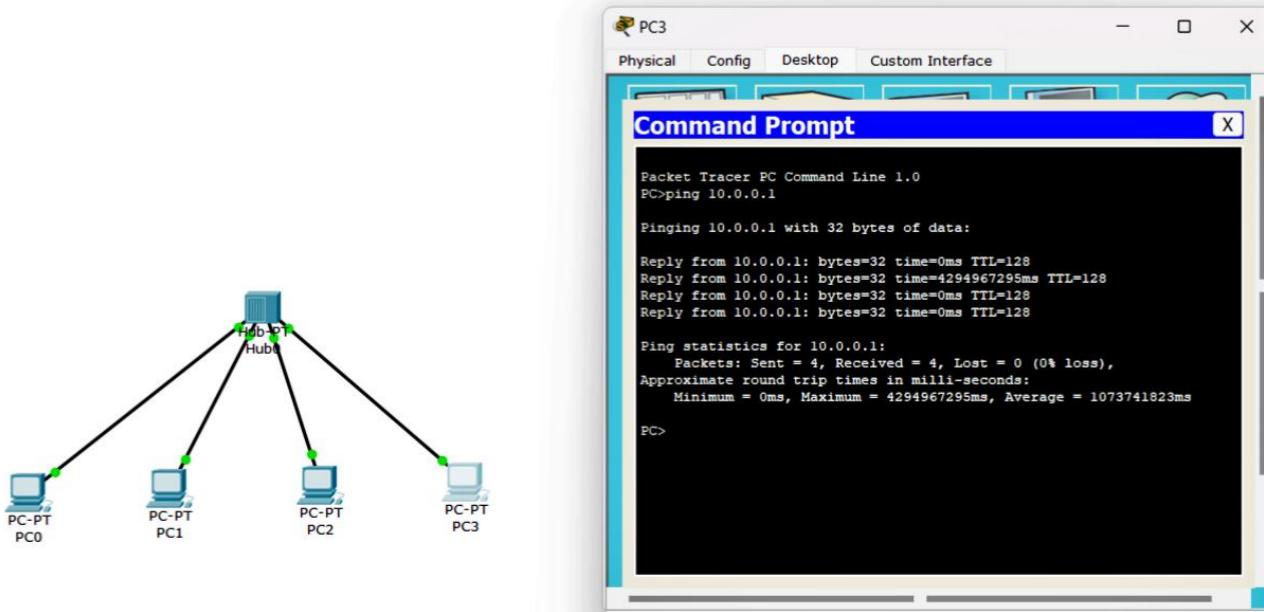
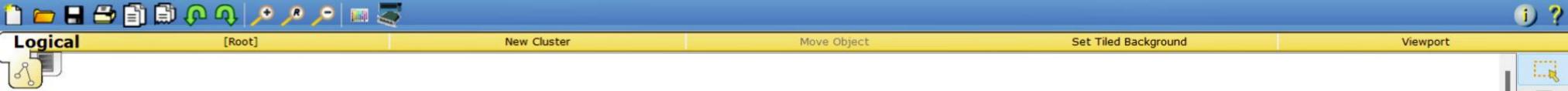
Packets sent = 4, Received = 4, Lost = 0

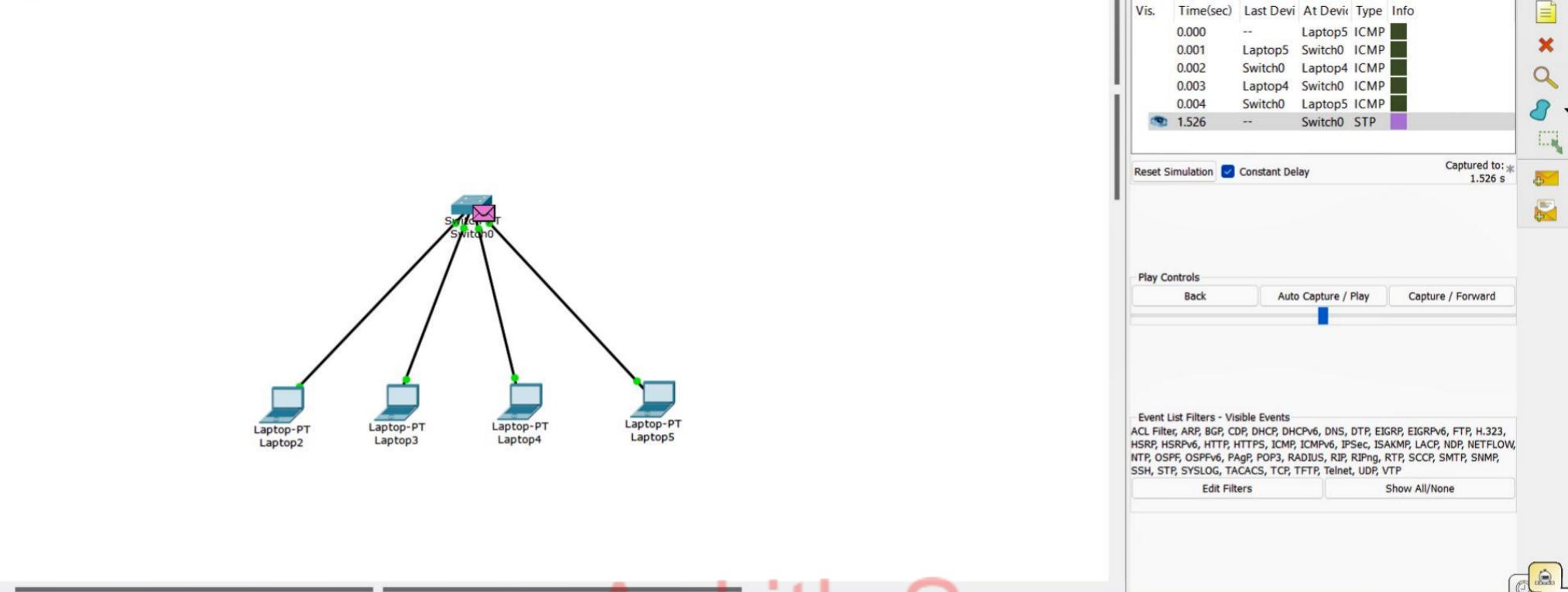
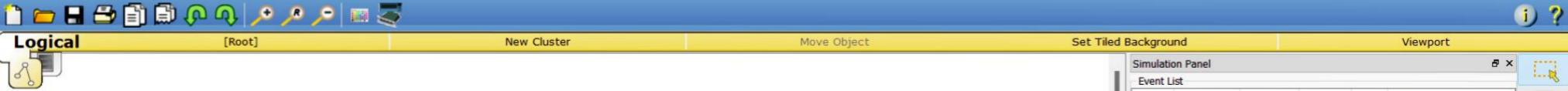
Approx round trips

minimum = 0ms, max = 1ms, Avg = 0ms.

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Time: 00:20:27.817 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward Event List Simulation

Connections

Automatically Choose Connection Type

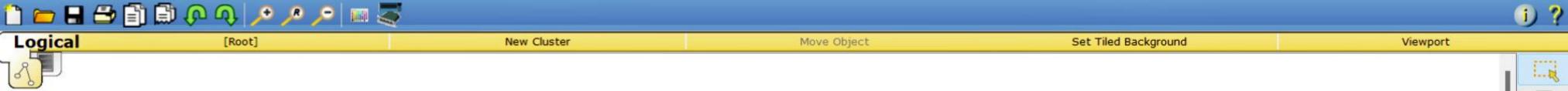
Scenario 0

New Delete

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

Successful	Laptop...	Laptop4	ICMP	0.000	N	0	(edit)	(delete)
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[Root]

New Cluster

Move Object

Set Tiled Background

Viewport

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