Tecnológico Nacional de México

INSTITUTO TECNOLÓGICO DE SALINA CRUZ

Fundamentos de redes

Semestre Agosto – Diciembre 2014

REPORTE DE PRÁCTICA

Práctica No: 3.5.1: Desafío de integración de aptitudes: Configuración de hosts y servicios.

Unidad 3: Capa de red y direccionamiento de la red: IPv4

Nombre: Zarate López Leonardo

Fecha: 05 de octubre del 2014

Objetivo:

- Configurar hosts y servicios
- Agregar, configurar y conectar hosts y servidores
- Explorar la forma en que DNS y HTTP trabajan en conjunto
- Usar el modo simulación para observar los detalles de los paquetes generados por DNS y HTTP

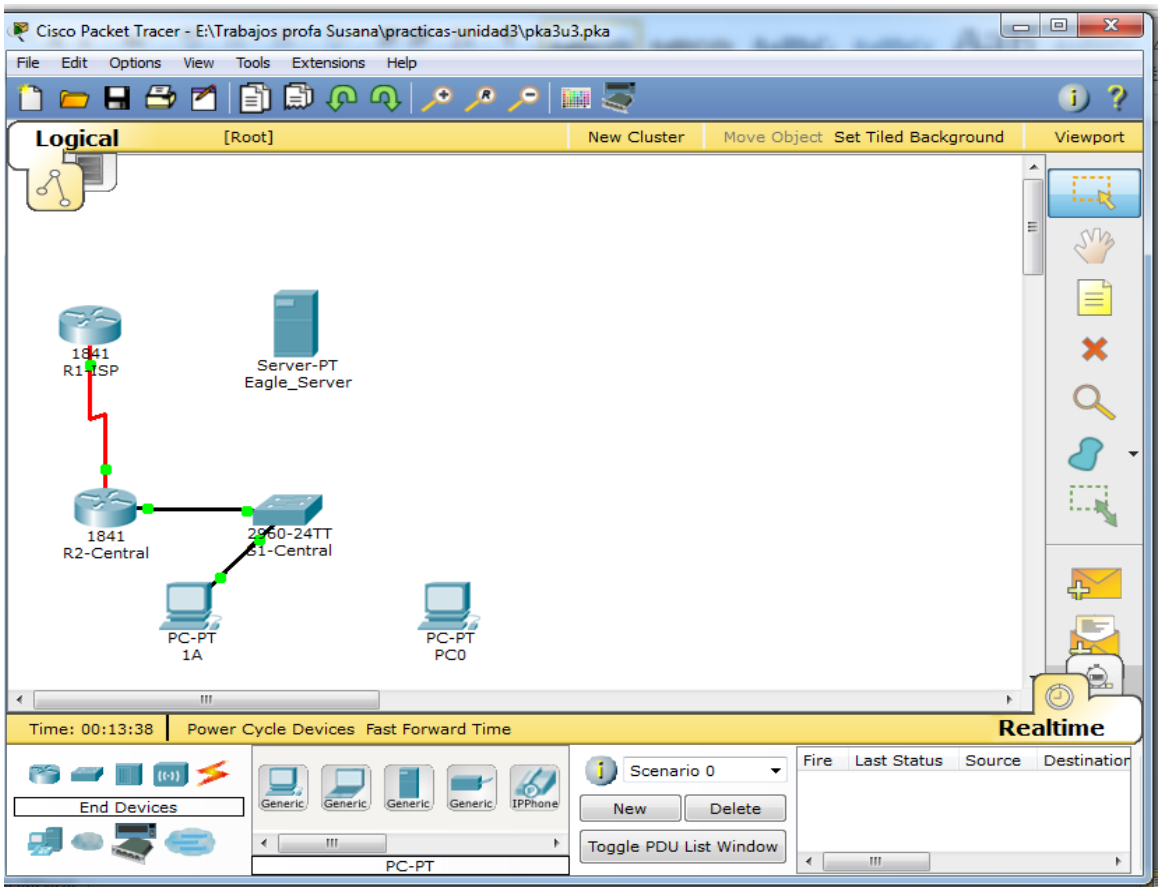
Instrucciones: A lo largo del curso, utilizará una configuración de laboratorio estándar creada a partir de PC, servidores, routers y switches reales para aprender los conceptos sobre redes. Al final de cada capítulo, desarrollará secciones cada vez más largas de esta topología en el Rastreador de paquetes.

Materiales: computadora, software.

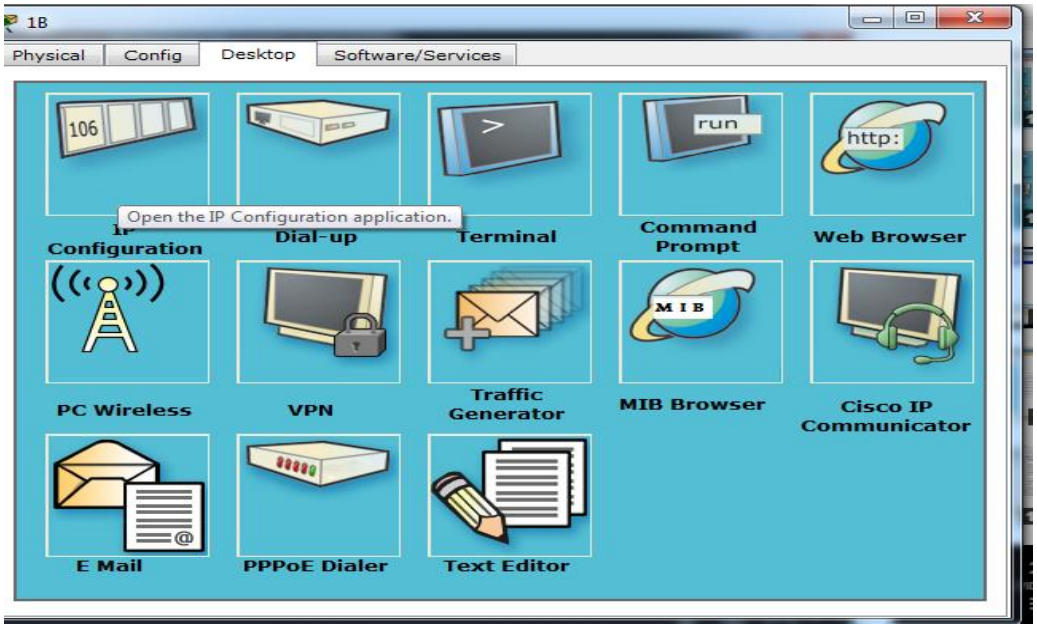
Desarrollo

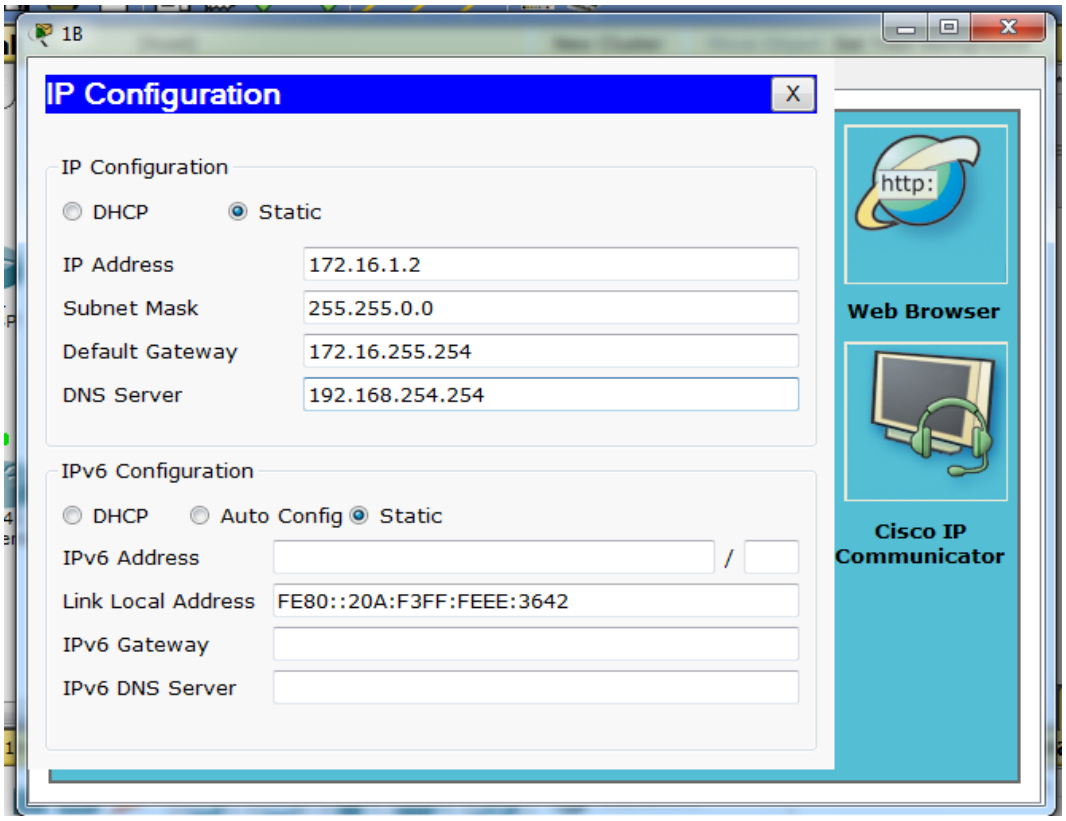
Tarea 1: "Repare" y pruebe la topología

Agregar una PC con un nombre para mostrar "1B" (sin comillas) en la topología. Configúrela con los siguientes parámetros: Dirección IP 172.16.1.2, Máscara de subred 255.255.0.0, Gateway por defecto 172.16.255.254 y Servidor DNS 192.168.254.254. Conecte la PC 1B al puerto Fa0/2 del switch S1-Central. Conecte el Eagle Server al puerto Fa0/0 en el router R1-ISP. Encienda los servicios Web en el servidor habilitando HTTP. Habilite los servicios DNS y agregue una entrada DNS que asocie "eagle-server.example.com" (sin comillas) con la dirección IP del servidor. Verifique su trabajo utilizando la evaluación con el botón **Verificar resultados** y la ficha **Puntos de evaluación**. Pruebe la conectividad, en tiempo real, mediante AGREGAR PDU SIMPLE para probar la conectividad entre la PC 1B y el Eagle Server.

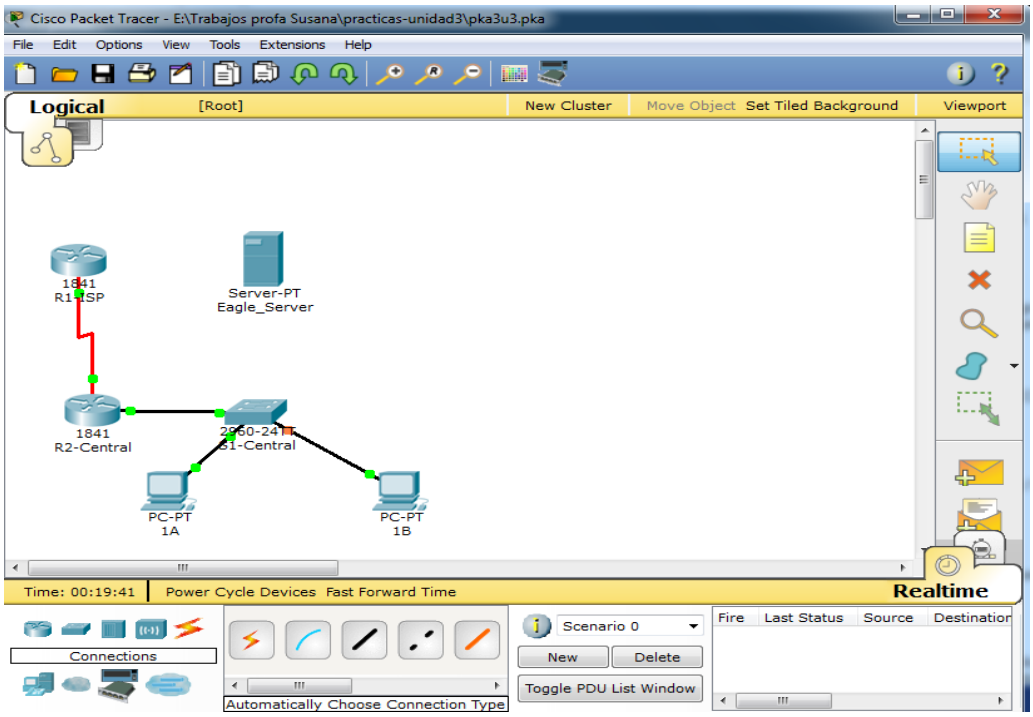


Insertamos una nueva PC

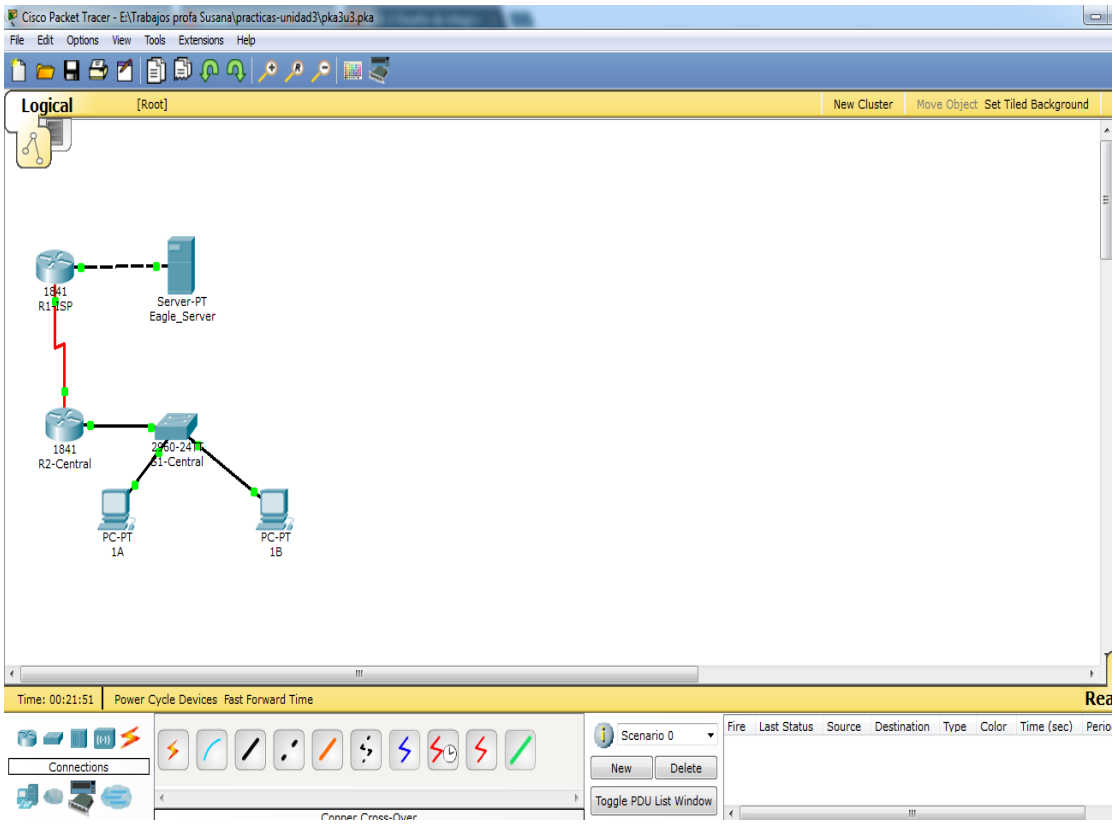




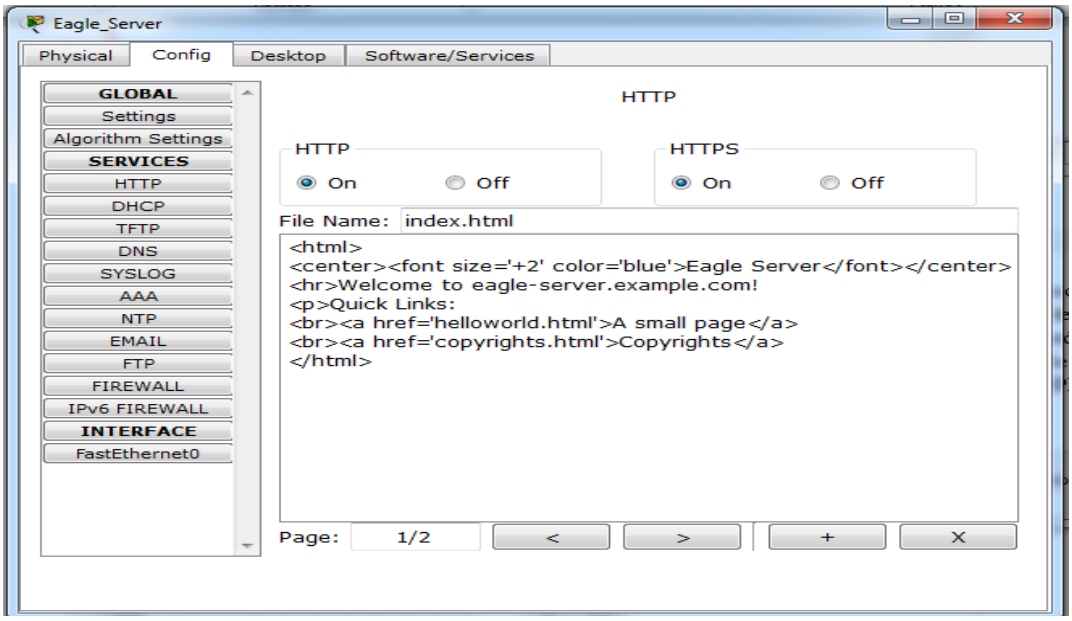
Configuramos con los siguientes parámetros: **Dirección IP** 172.16.1.2, **Máscara de subred** 255.255.0.0, **Gateway por defecto** 172.16.255.254 y **Servidor DNS** 192.168.254.254.



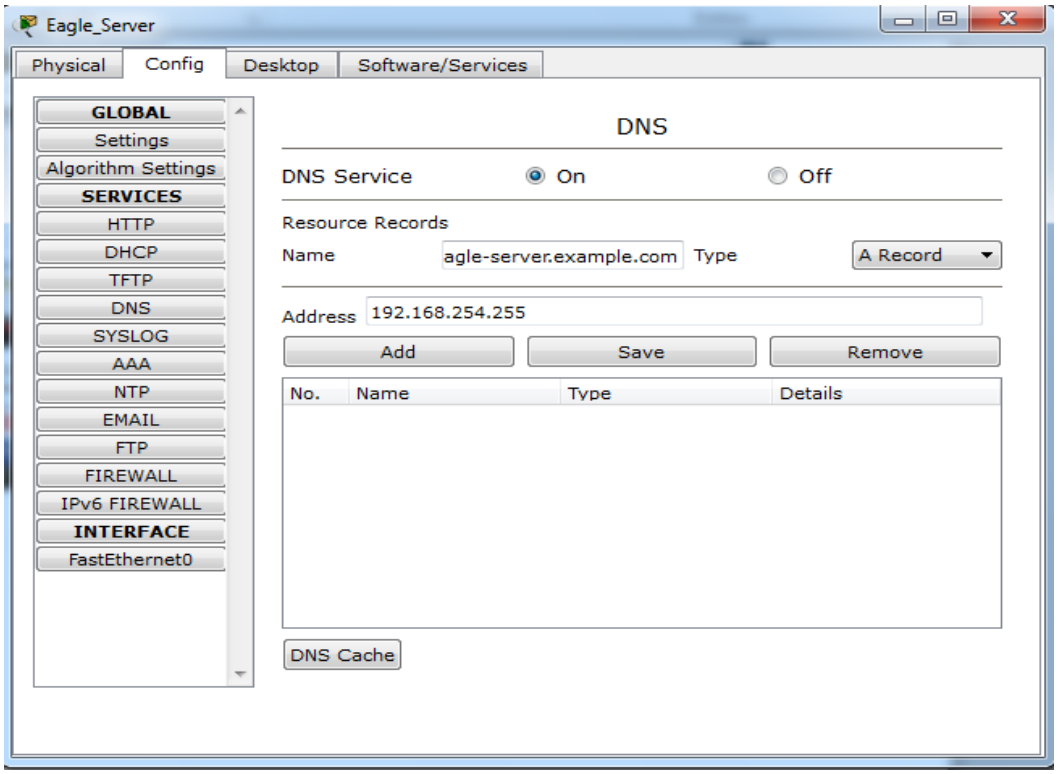
Conectamos la PC 1B al puerto Fa0/2 del switch S1-Central.



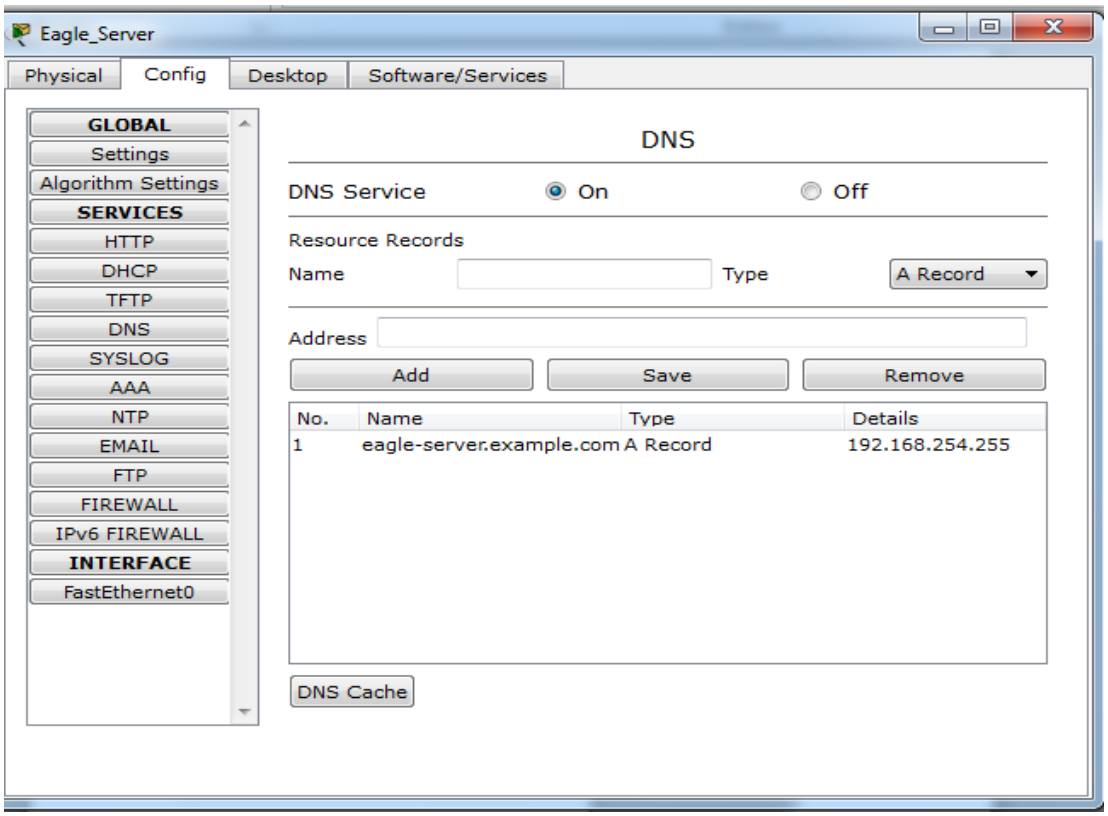
Conecte el Eagle Server al puerto Fa0/0 en el router R1-ISP

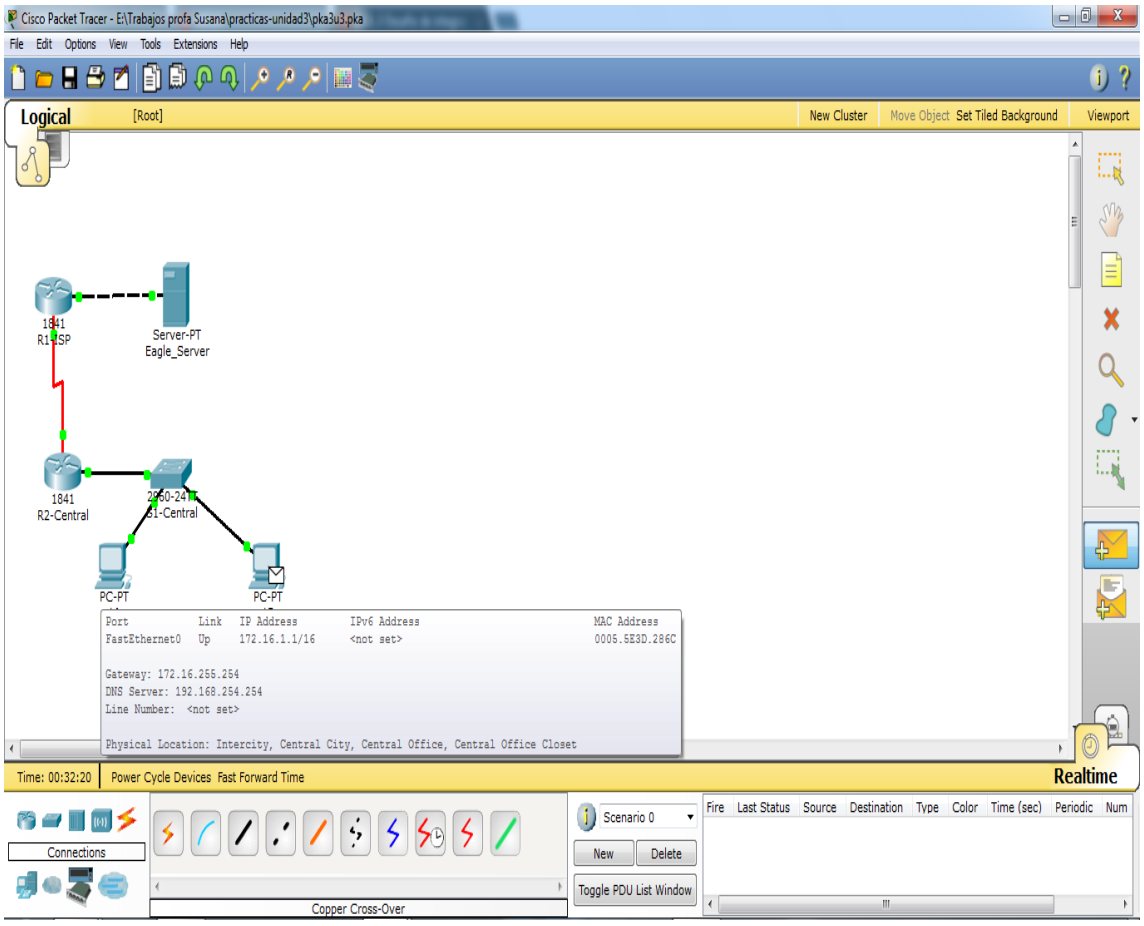


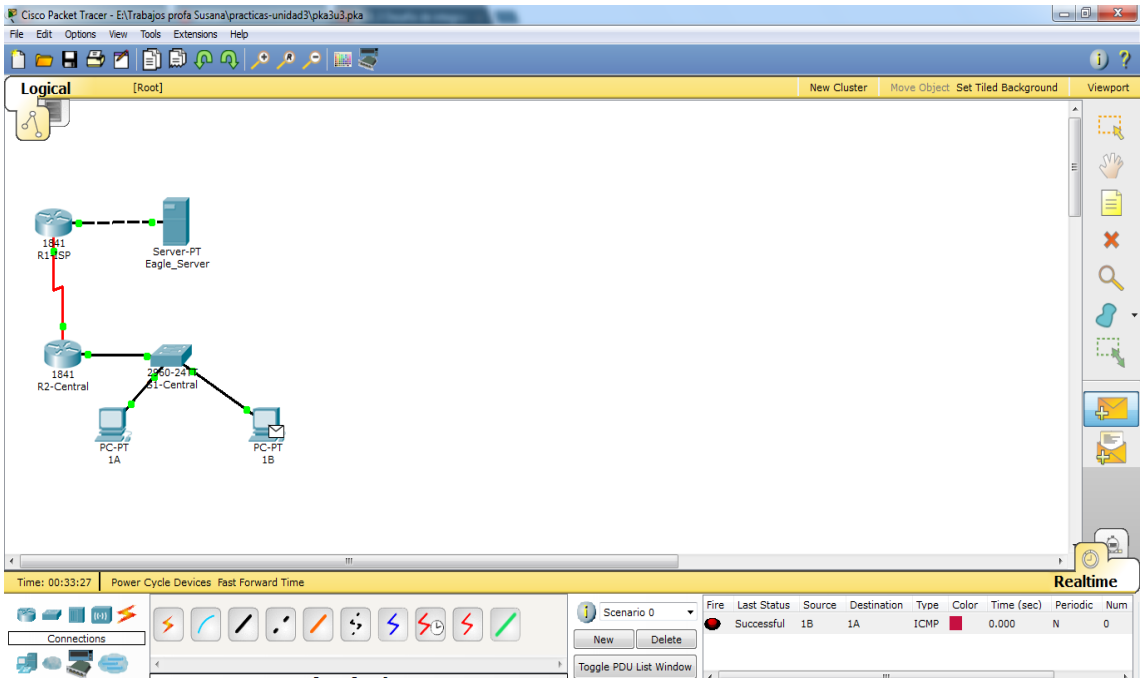
Encienda los servicios Web en el servidor habilitando HTTP.

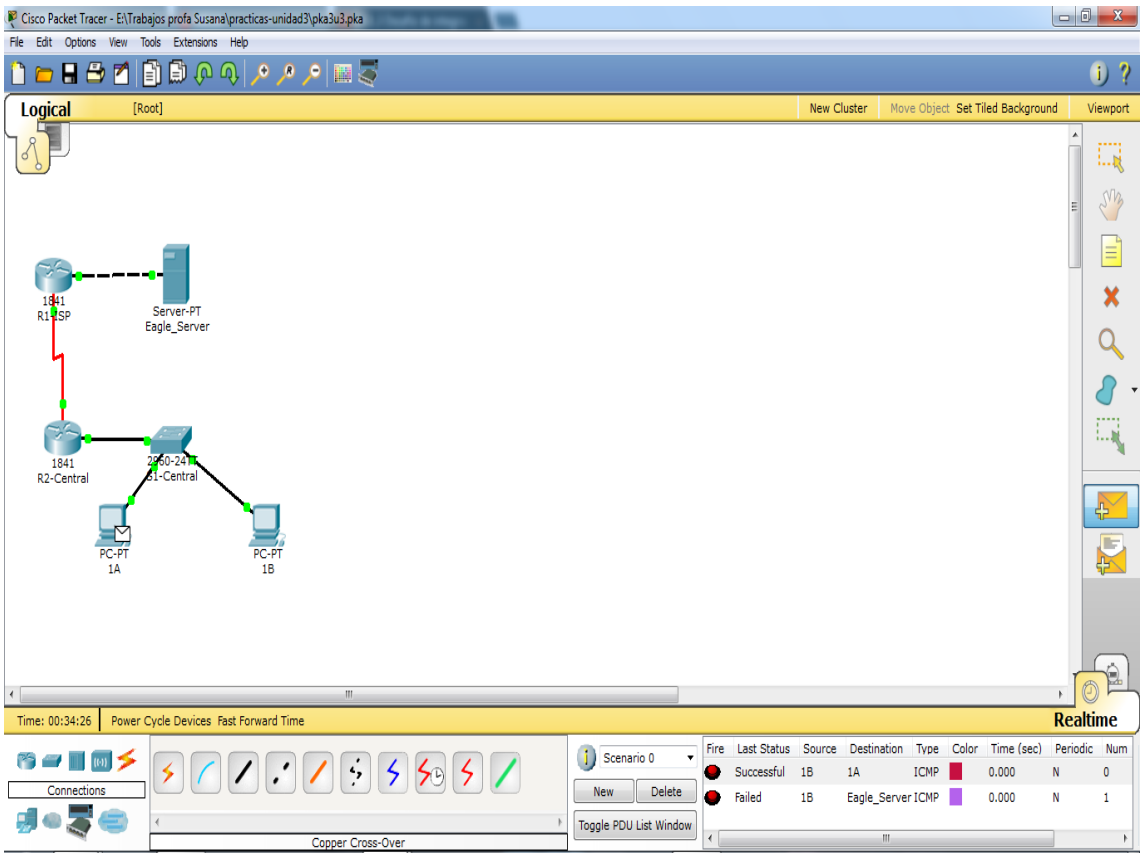


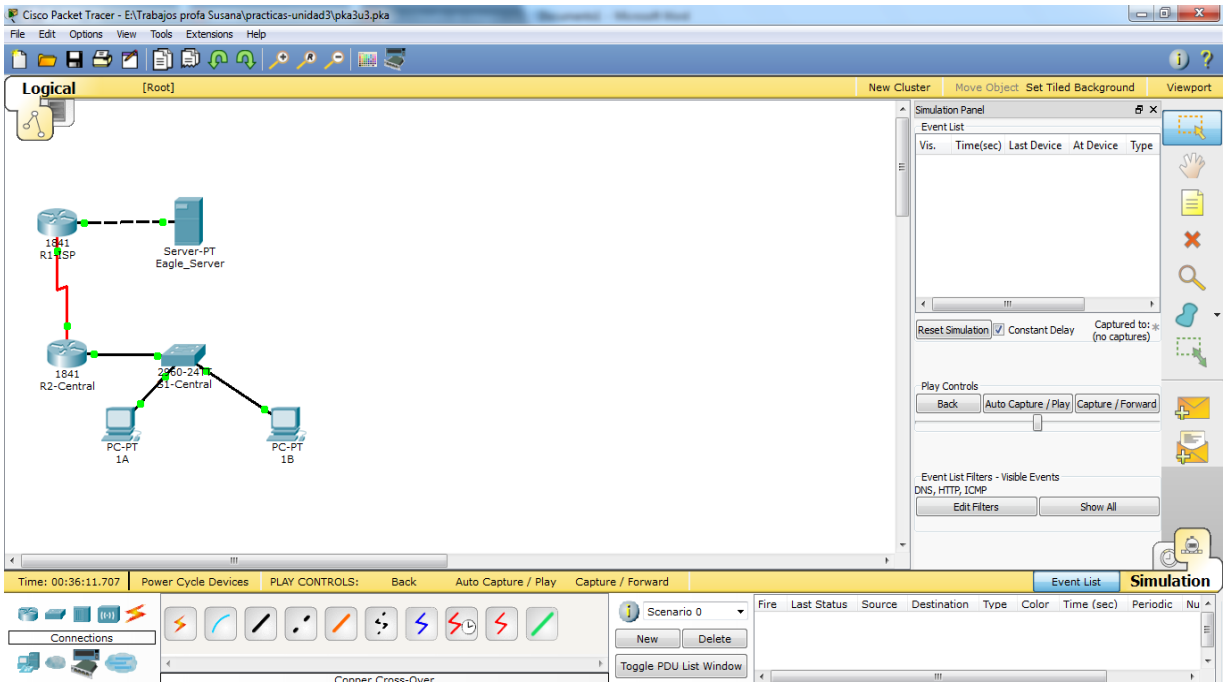
Habilite los servicios DNS y agregue una entrada DNS que asocie "eagle-server.example.com" (sin comillas) con la dirección IP del servidor.


Eagle_Server
Physical
Config
Desktop
Software/Services
GLOBAL
Settings
Algorithm Settings
SERVICES
HTTP
DHCP
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
FIREWALL
IPv6 FIREWALL
INTERFACE
FastEthernet0
DNS
DNS Service
On
Off
Resource Records
Name
Type
A Record
Address
Add
Save
Remove
No.
Name
Type
Details
1
eagle-server.example.com
A Record
192.168.254.255
DNS Cache


Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
PC-PT
PC-PT
Port Link IP Address IPv6 Address MAC Address
FastEthernet0 Up 172.16.1.1/16 <not set> 0005.5E3D.286C
Gateway: 172.16.255.254
DNS Server: 192.168.254.254
Line Number: <not set>
Physical Location: Intercity, Central City, Central Office, Central Office Closet
Time: 00:32:20
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time (sec)
Periodic
Num

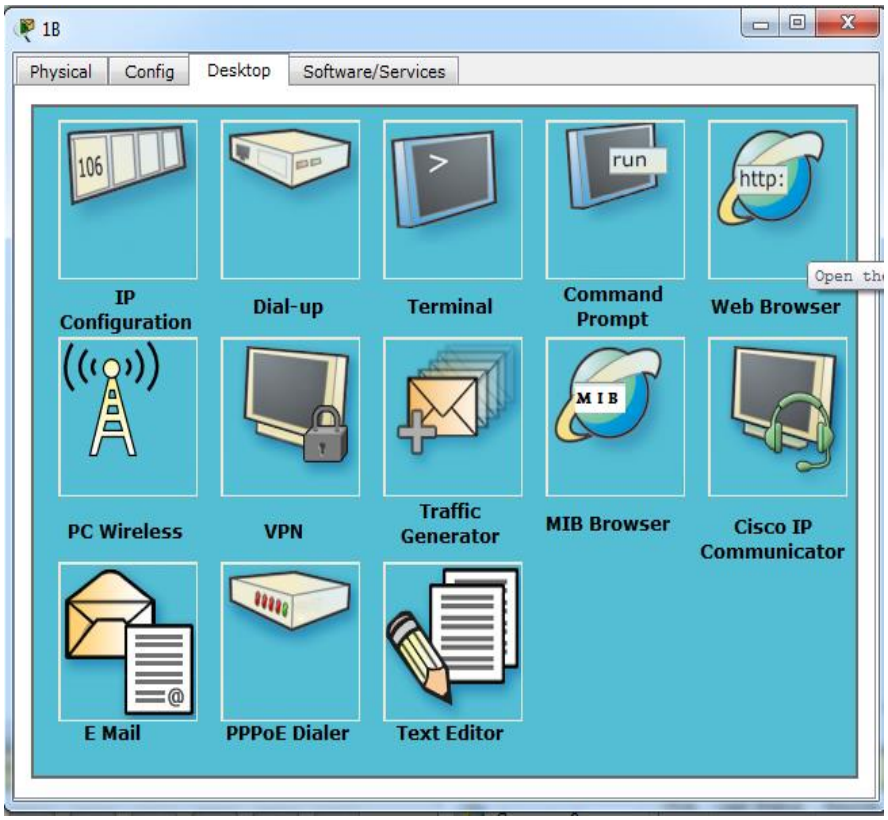

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24
S1-Central
PC-PT
1A
PC-PT
1B
Time: 00:33:27
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time (sec)
Periodic
Num
Successful
1B
1A
ICMP
0.000
N
0

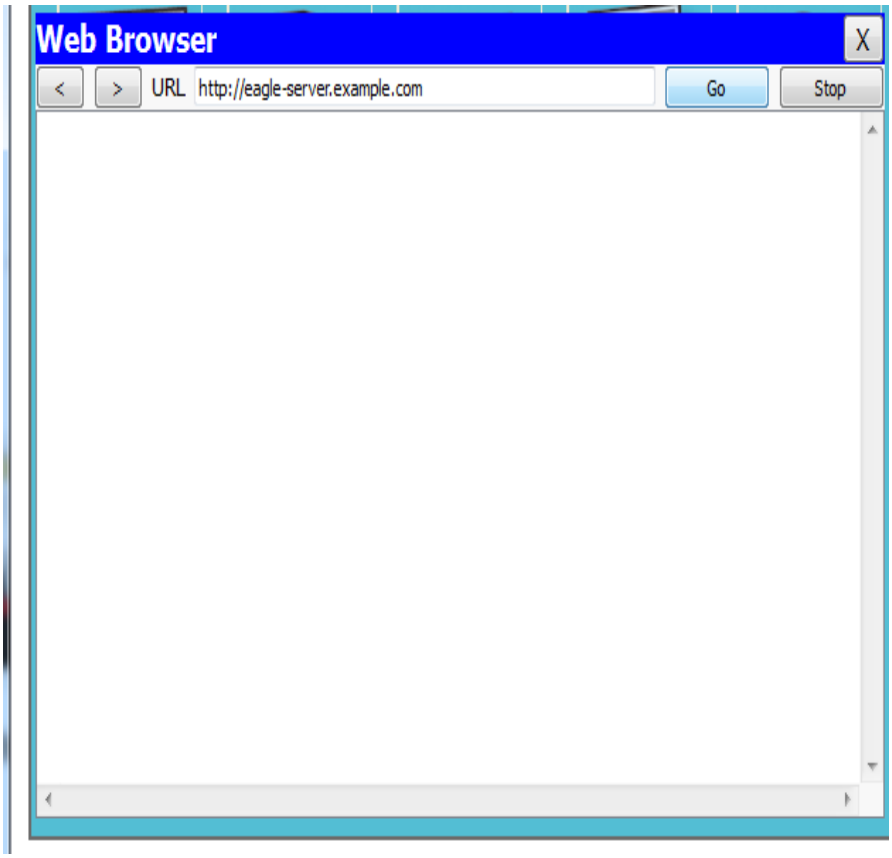

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24
S1-Central
PC-PT
1A
PC-PT
1B
Time: 00:34:26
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time (sec)
Periodic
Num
Successful
1B
1A
ICMP
0.000
N
0
Failed
1B
Eagle_Server
ICMP
0.000
N
1

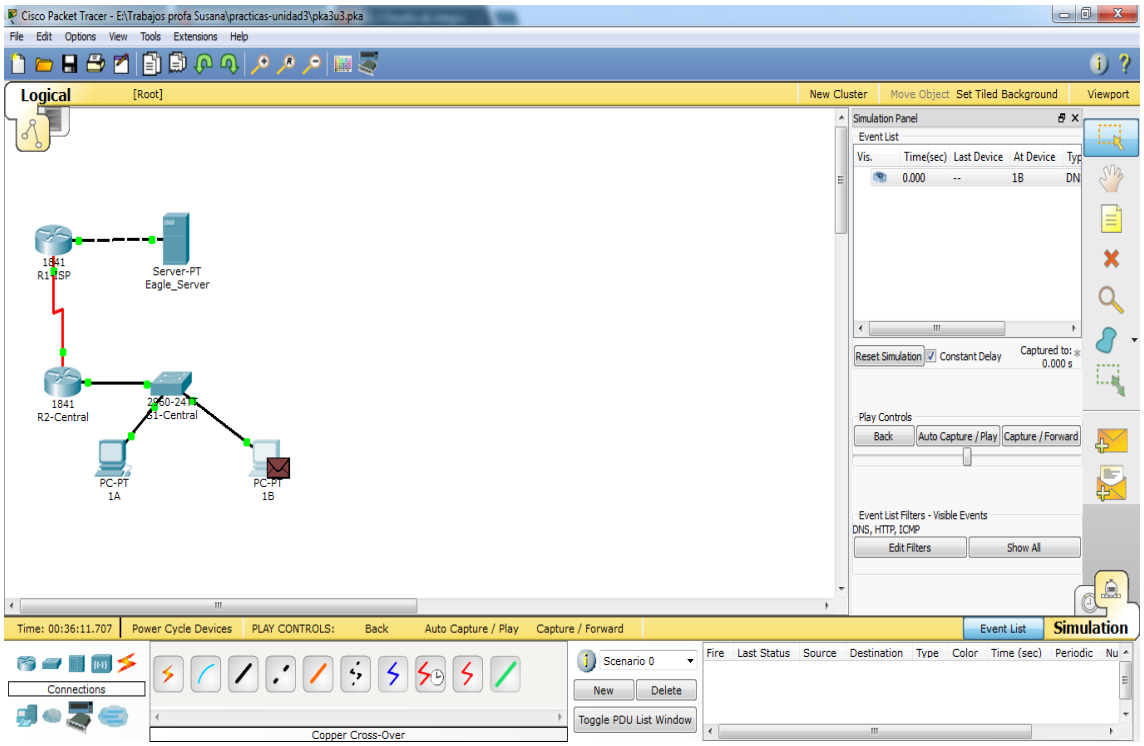


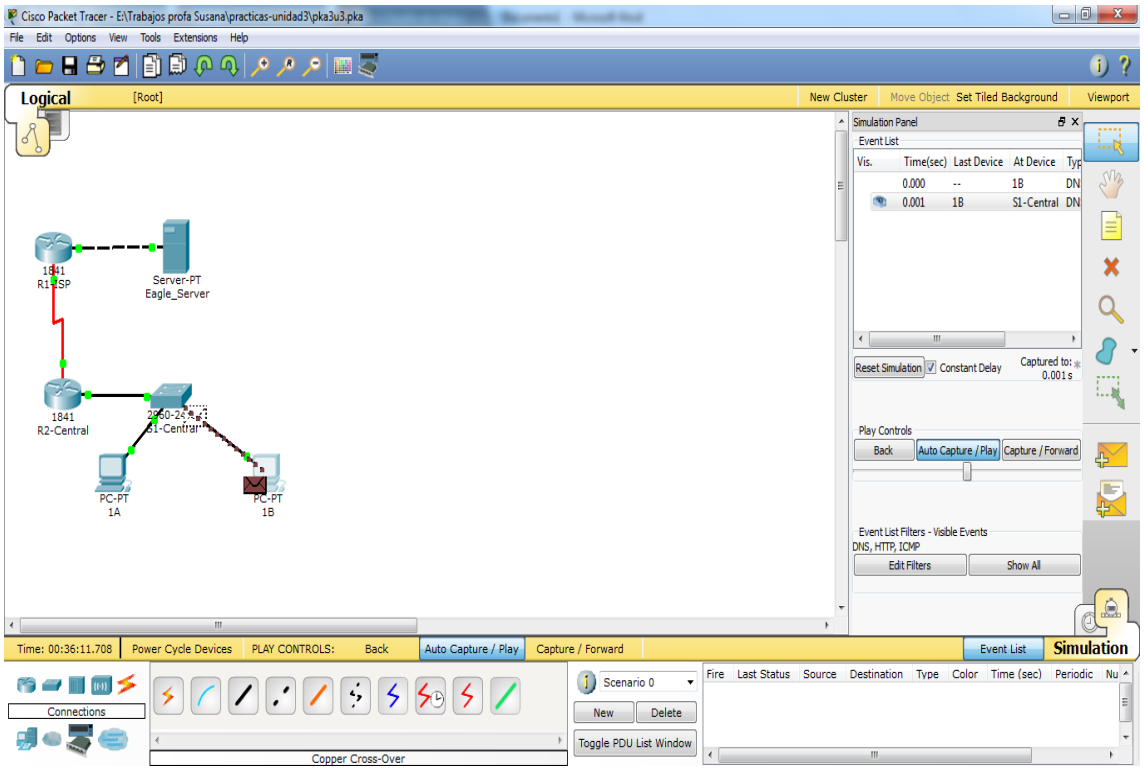
Tarea 2: Explore cómo trabajan en forma conjunta DNS y HTTP

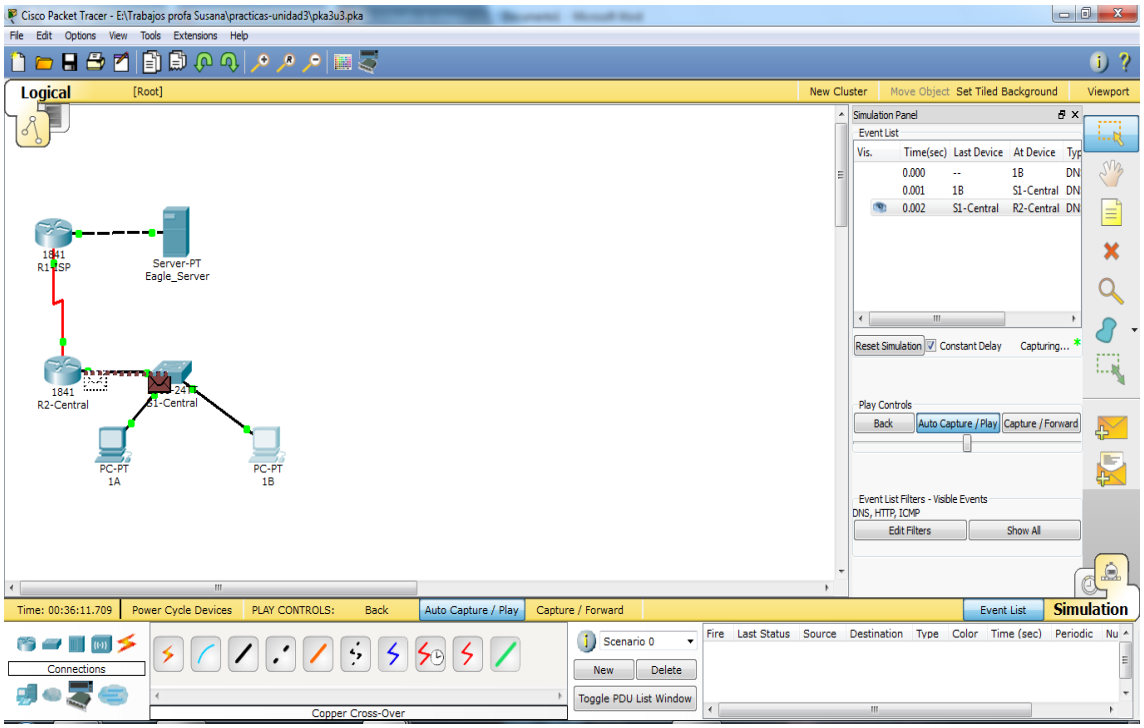
Cambie del modo de tiempo real al modo de simulación. Abra un navegador Web desde el escritorio de la PC 1B. Escriba "eagle-server.example.com" (sin comillas) en la Barra de direcciones, presione Intro y, a continuación, use el botón **Capturar/Avanzar**en la **Lista de eventos** para capturar la interacción de DNS y HTTP. Ejecute esta animación y examine el contenido del paquete (Ventana **Información de la PDU**, **Detalles de la PDU entrante, Detalles de la PDU saliente**) para cada evento de la lista de eventos, especialmente cuando los paquetes se encuentran en la PC 1B o en el Eagle Server. Si recibe el mensaje "Búfer lleno", haga clic en el botón **Ver eventos anteriores**. Si bien es posible que aún no comprenda el procesamiento de los paquetes por parte del switch y los routers, debe poder entender cómo trabajan en forma conjunta DNS y HTTP.

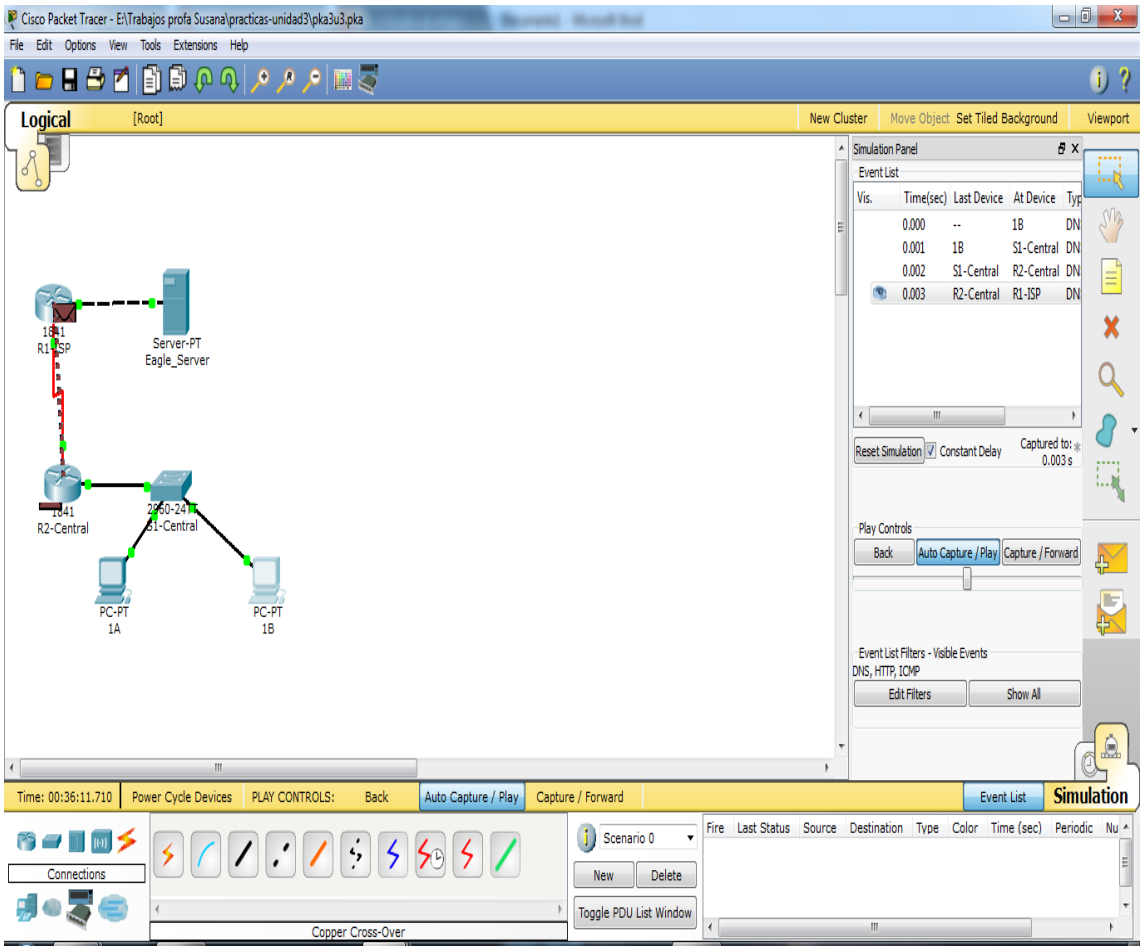

1B
Physical
Config
Desktop
Software/Services
106
IP Configuration
Dial-up
Terminal
run
Command Prompt
http:
Web Browser
PC Wireless
VPN
Traffic Generator
MIB
MIB Browser
Cisco IP Communicator
E Mail
PPPoE Dialer
Text Editor

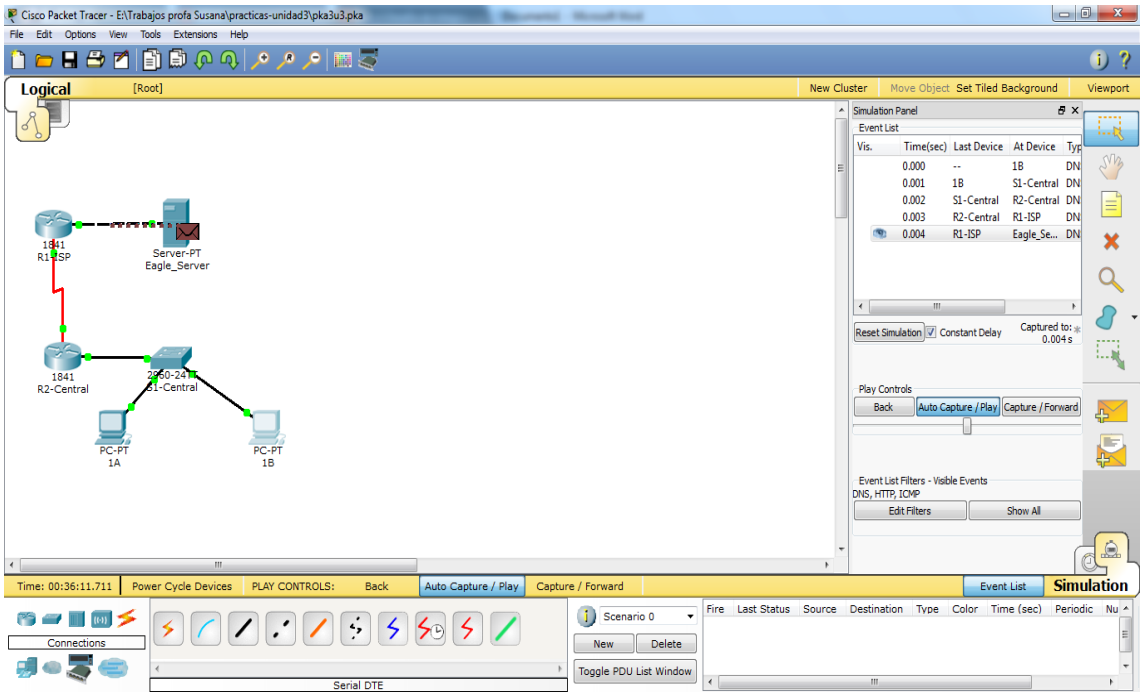

Web Browser
X
URL
http://eagle-server.example.com
Go
Stop

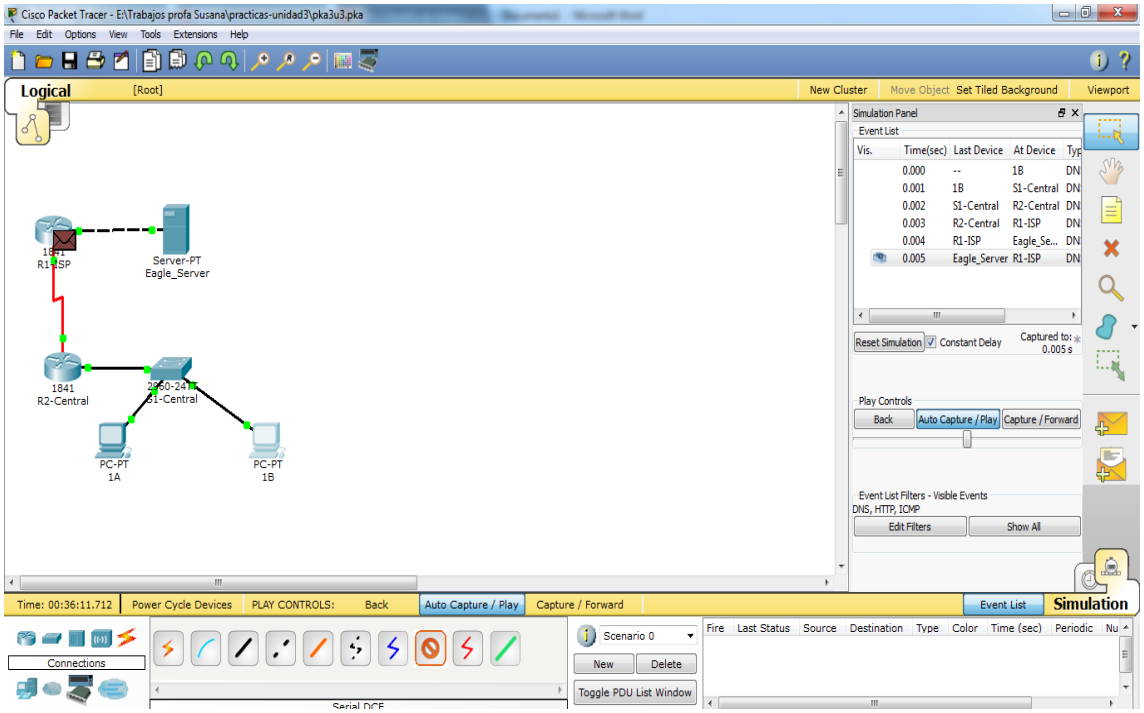

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24TT
S1-Central
PC-PT
1A
PC-PT
1B
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Typ
0.000 -- 1B DN
Reset Simulation
Constant Delay
Captured to: 0.000 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters
Show All
Time: 00:36:11.707
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time (sec) Periodic Nu

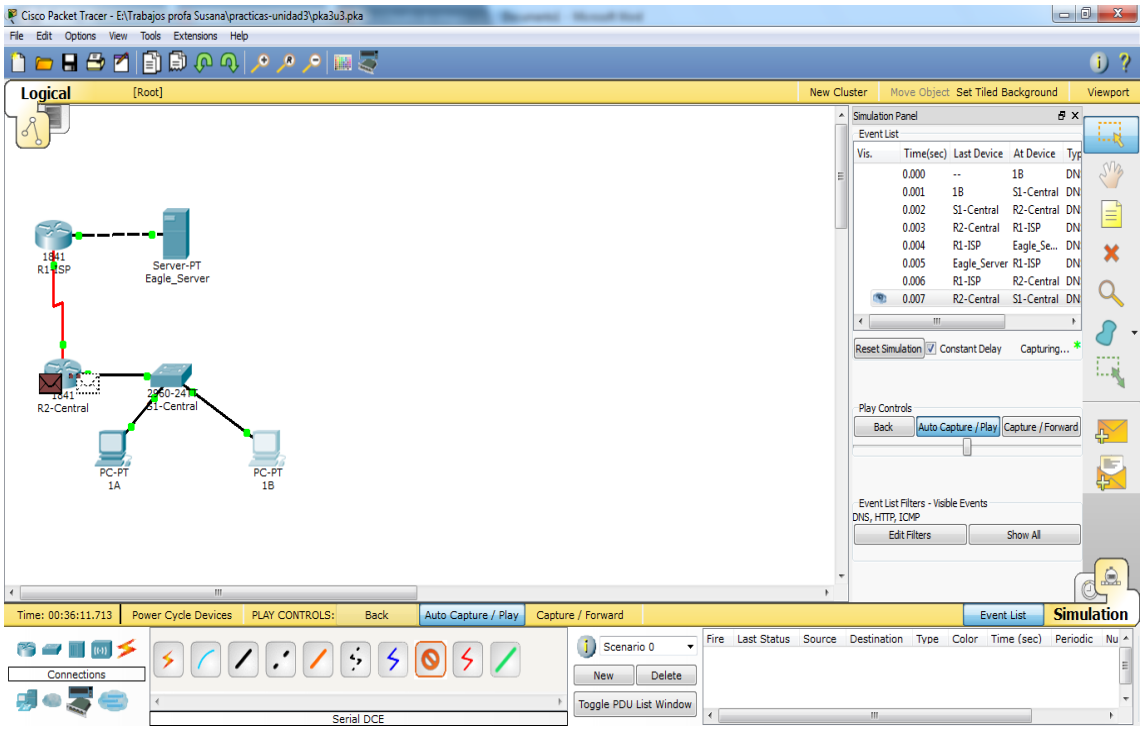

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24TT
S1-Central
PC-PT
1A
PC-PT
1B
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Typ
0.000 -- 1B DN
0.001 1B S1-Central DN
Reset Simulation
Constant Delay
Captured to: 0.001 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters
Show All
Time: 00:36:11.708
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time (sec) Periodic Nu

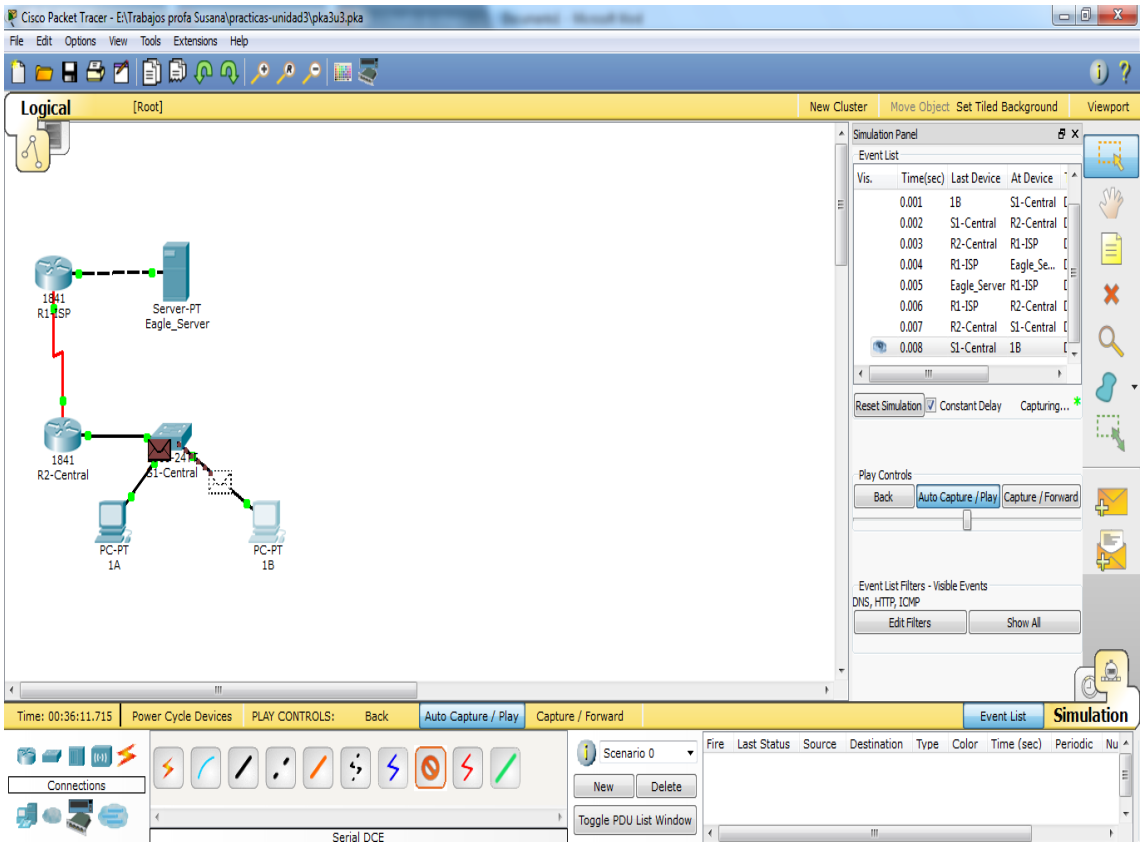

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical [Root]
New Cluster Move Object Set Tiled Background Viewport
1841 R1-ISP
Server-PT Eagle_Server
1841 R2-Central
2960-24TT S1-Central
PC-PT 1A
PC-PT 1B
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 1B DNS
0.001 1B S1-Central DNS
0.002 S1-Central R2-Central DNS
Reset Simulation Constant Delay Capturing...
Play Controls
Back Auto Capture / Play Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters Show All
Time: 00:36:11.709 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward Event List Simulation
Connections
Copper Cross-Over
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time (sec) Periodic Nu

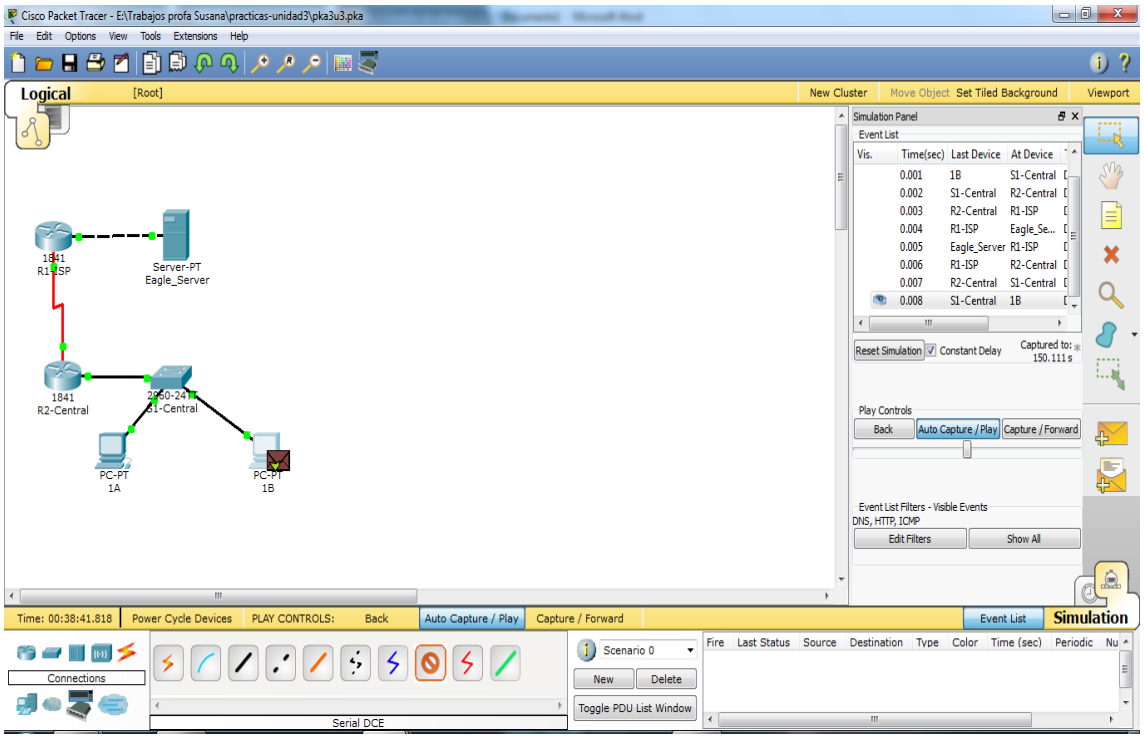

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical [Root]
New Cluster Move Object Set Tiled Background Viewport
1841 R1-ISP
Server-PT Eagle_Server
1841 R2-Central
2960-24TT S1-Central
PC-PT 1A
PC-PT 1B
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Type
0.000 -- 1B DNS
0.001 1B S1-Central DNS
0.002 S1-Central R2-Central DNS
0.003 R2-Central R1-ISP DNS
Reset Simulation Constant Delay Captured to: 0.003 s
Play Controls
Back Auto Capture / Play Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters Show All
Time: 00:36:11.710 Power Cycle Devices PLAY CONTROLS: Back Auto Capture / Play Capture / Forward Event List Simulation
Connections
Copper Cross-Over
Scenario 0
New Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time (sec) Periodic Nu

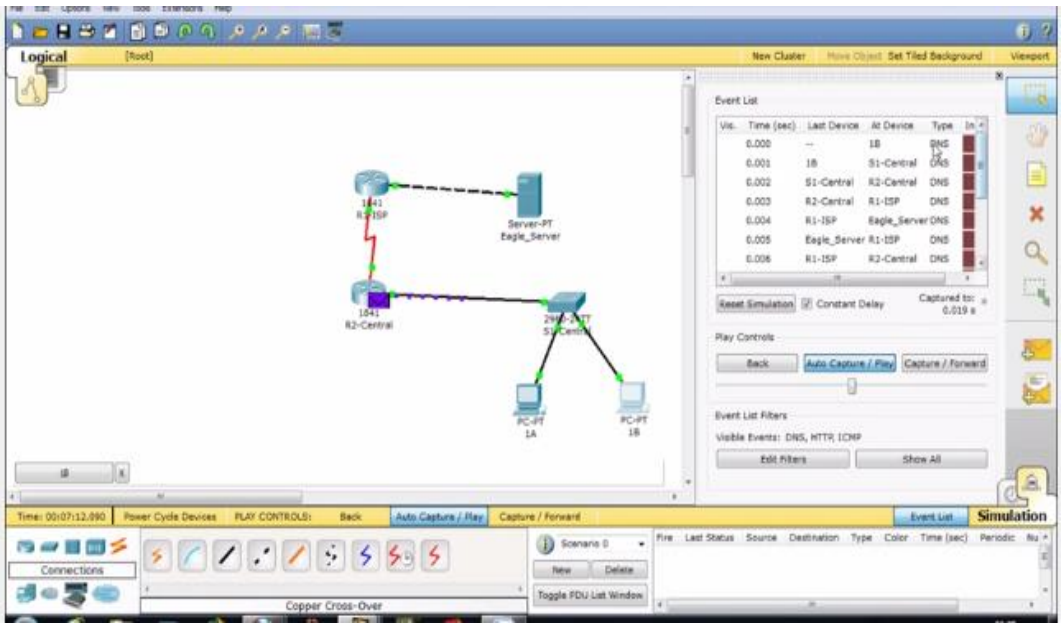

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24TT
S1-Central
PC-PT
1A
PC-PT
1B
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Typ
0.000 -- 1B DN
0.001 1B S1-Central DN
0.002 S1-Central R2-Central DN
0.003 R2-Central R1-ISP DN
0.004 R1-ISP Eagle_Se... DN
Reset Simulation
Constant Delay
Captured to: 0.004 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters
Show All
Time: 00:36:11.711
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Serial DTE
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time (sec) Periodic Nu

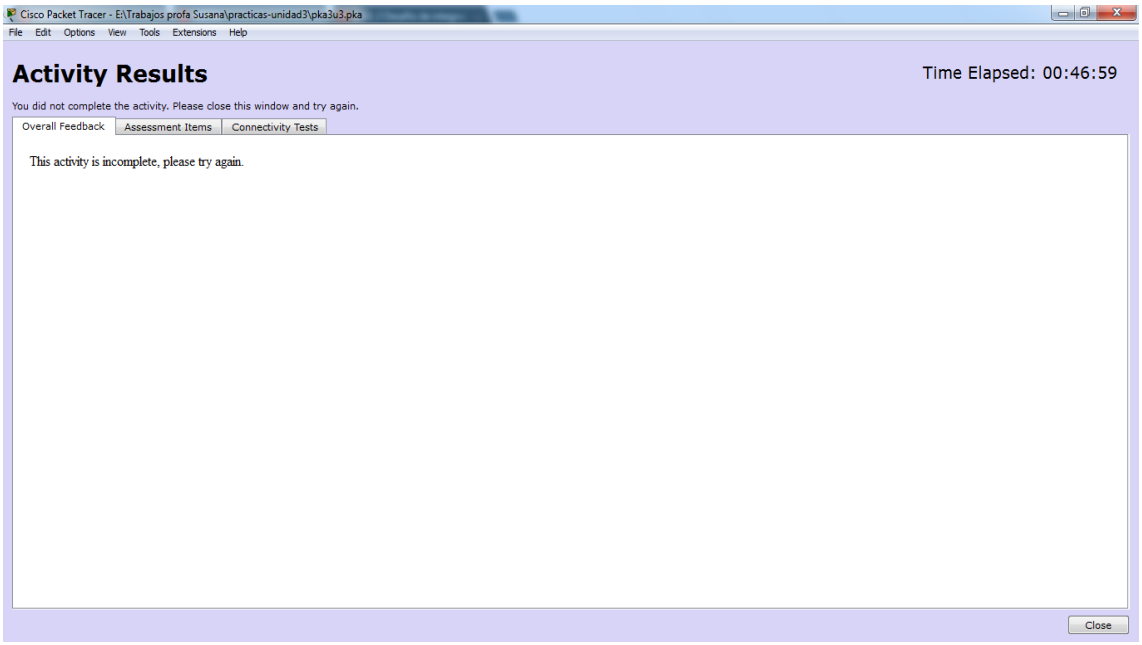

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24TT
S1-Central
PC-PT
1A
PC-PT
1B
Simulation Panel
Event List
Vis. Time(sec) Last Device At Device Typ
0.000 -- 1B DN
0.001 1B S1-Central DN
0.002 S1-Central R2-Central DN
0.003 R2-Central R1-ISP DN
0.004 R1-ISP Eagle_Se... DN
0.005 Eagle_Server R1-ISP DN
Reset Simulation
Constant Delay
Captured to: 0.005 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters
Show All
Time: 00:36:11.712
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Scenario 0
New
Delete
Toggle PDU List Window
Fire Last Status Source Destination Type Color Time (sec) Periodic Nu


Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24TT
S1-Central
PC-PT
1A
PC-PT
1B
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
At Device
0.000 -- 1B
0.001 1B S1-Central
0.002 S1-Central R2-Central
0.003 R2-Central R1-ISP
0.004 R1-ISP Eagle_Se...
0.005 Eagle_Server R1-ISP
0.006 R1-ISP R2-Central
0.007 R2-Central S1-Central
Reset Simulation
Constant Delay
Capturing...
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters
Show All
Time: 00:36:11.713
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time (sec)
Periodic

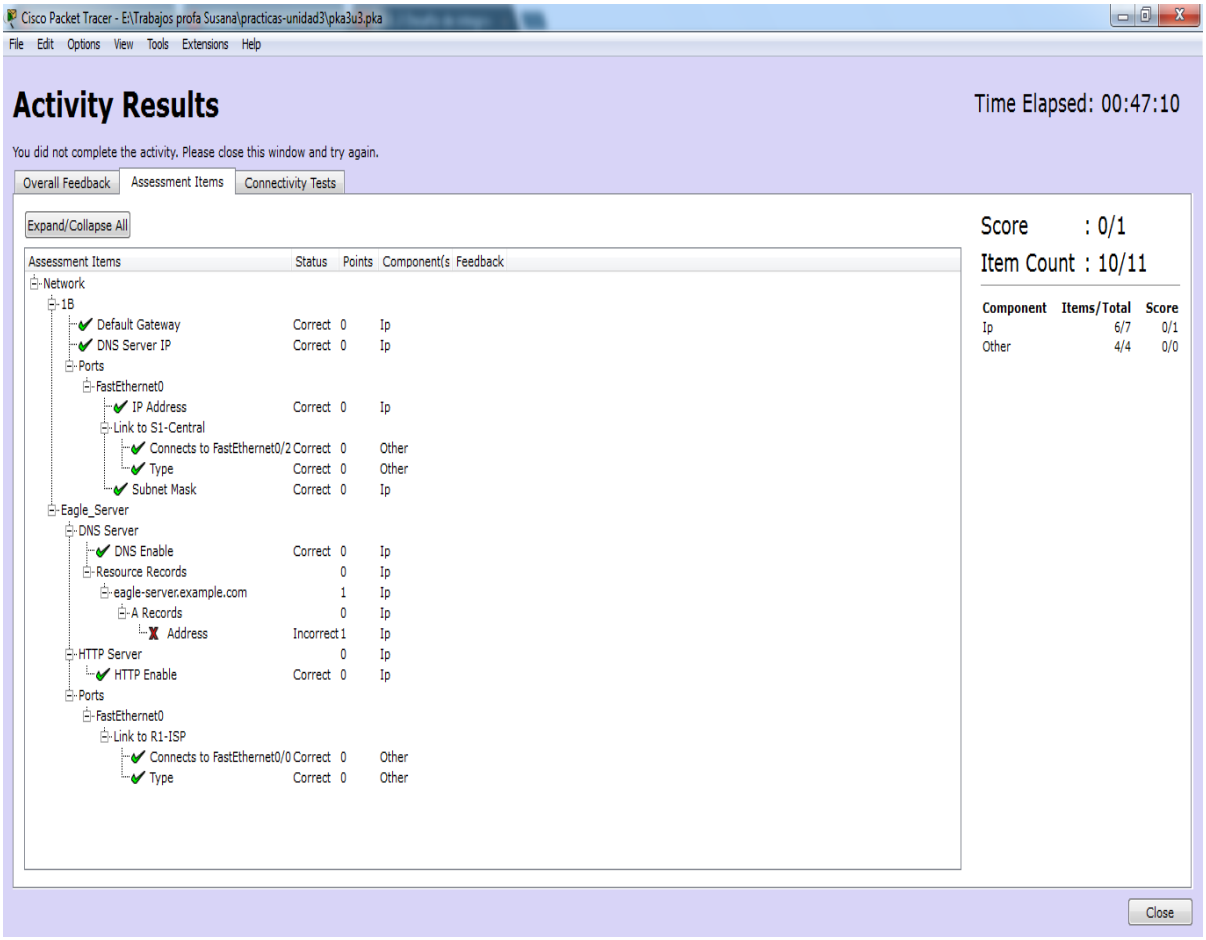

Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
PC-PT
1A
PC-PT
1B
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
At Device
0.001 1B S1-Central
0.002 S1-Central R2-Central
0.003 R2-Central R1-ISP
0.004 R1-ISP Eagle_Se...
0.005 Eagle_Server R1-ISP
0.006 R1-ISP R2-Central
0.007 R2-Central S1-Central
0.008 S1-Central 1B
Reset Simulation
Constant Delay
Capturing...
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters
Show All
Time: 00:36:11.715
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time (sec)
Periodic


Cisco Packet Tracer - E:\Trabajos profa Susana\practicas-unidad3\pka3u3.pka
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
1841
R1-ISP
Server-PT
Eagle_Server
1841
R2-Central
2960-24TT
S1-Central
PC-PT
1A
PC-PT
1B
Simulation Panel
Event List
Vis.
Time(sec)
Last Device
At Device
Reset Simulation
Constant Delay
Captured to:
150.111 s
Play Controls
Back
Auto Capture / Play
Capture / Forward
Event List Filters - Visible Events
DNS, HTTP, ICMP
Edit Filters
Show All
Time: 00:38:41.818
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Serial DCE
Scenario 0
New
Delete
Toggle PDU List Window
Fire
Last Status
Source
Destination
Type
Color
Time (sec)
Periodic


Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
Server-PT
Eagle_Server
R2-Central
PC-PT
1A
PC-PT
1B
Event List
Reset Simulation
Constant Delay
Play Controls
Back
Auto Capture / Play
Capture / Forward
Edit Filters
Show All
Time: 00:07:12.090
Power Cycle Devices
PLAY CONTROLS:
Back
Auto Capture / Play
Capture / Forward
Event List
Simulation
Connections
Copper Cross-Over
Scenario 0
New
Delete
Toggle PDU List Window



El desarrollo se ha realizado con éxito!!



Los resultados de la actividad fueron muy bueno!!!

CONCLUSIÓN

En esta práctica realizamos la Configuración de hosts y servicios ya que Agregamos, configuramos, conectamos hosts y servidores para explorar la forma en que DNS y HTTP trabajan en conjunto, posteriormente Usamos el modo simulación para observar los detalles de los paquetes generados por DNS y HTTP.

Y finalmente obtuve buenos resultados

Espero que este trabajo cumpla con todos los requisitos que pide la profesora y queda a disposición de los lectores para criticas y sugerencias de antemano les doy las gracias.