Práctica 6
Redes de computadoras

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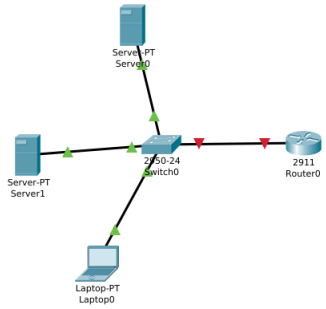
8 de enero de 2021

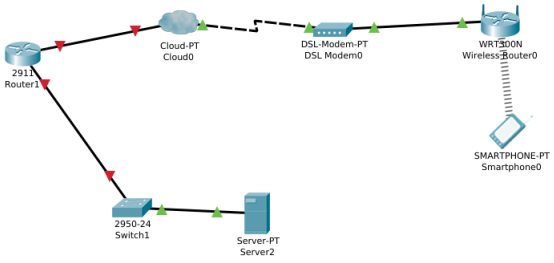
1. Pasos para desarrollar la práctica

Tomando la red de la práctica 5, se agregan otras dos subredes: una de Google y otra de Telmex.

Para la de Google se agregan los siguientes dispositivos.



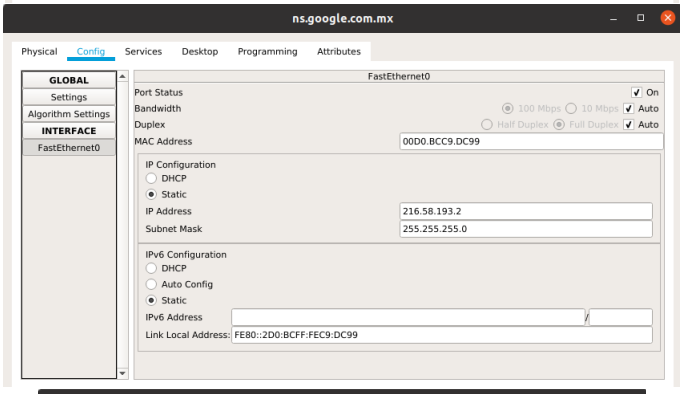
Para la de Telmex los sigiuentes dispositivos.

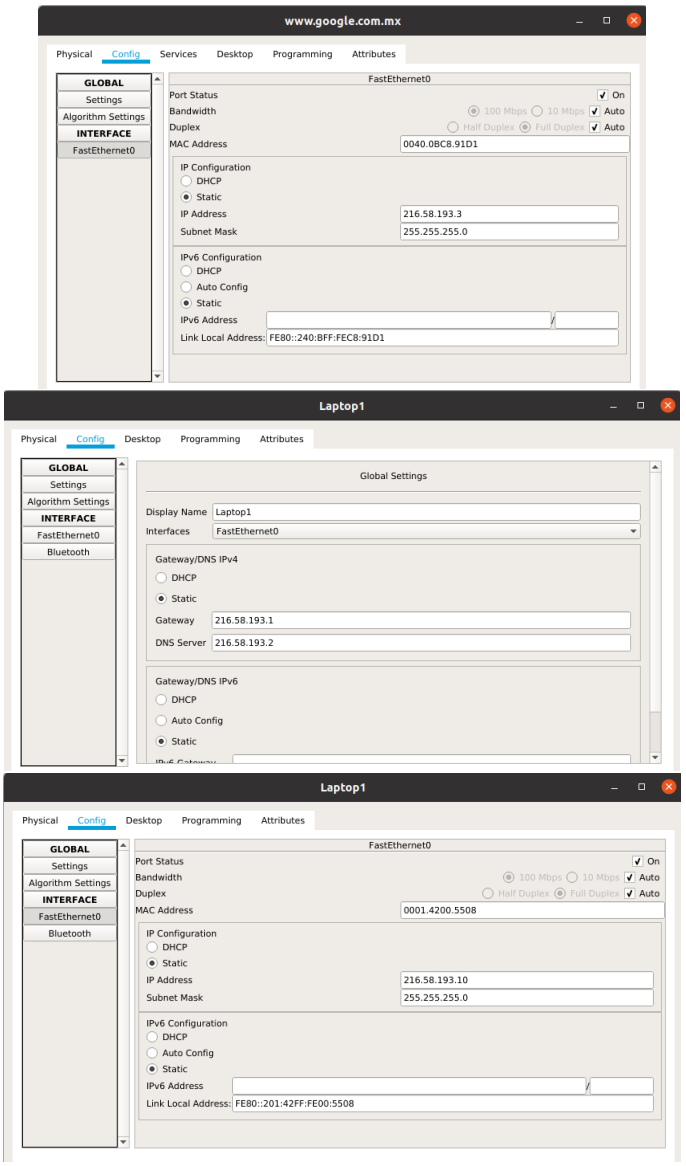


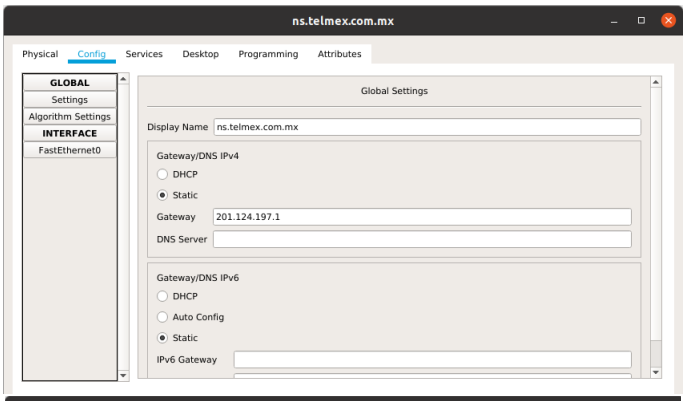
Se configuran las redes de Google y Telmex con los siguientes parámetros.

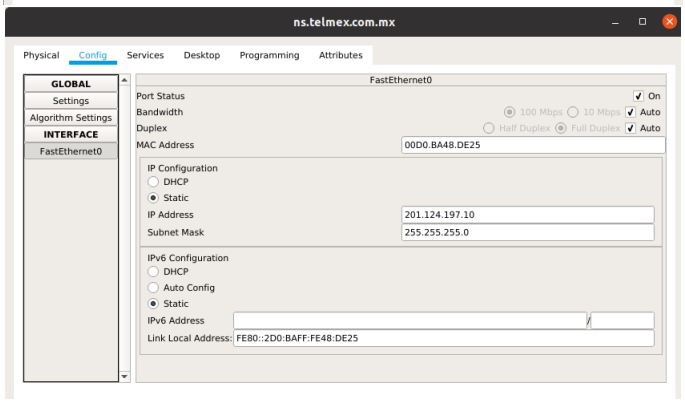
Nombre	IP	Máscara	Gateway	DNS
ns.google.com.mx	216.58.193.2	255.255.255.0	216.58.193.1	NA
www.google.com.mx	216.58.193.3	255.255.255.0	216.58.193.1	216.58.193.2
Laptop1	216.58.193.10	255.255.255.0	216.58.193.1	216.58.193.2

Nombre	IP	Máscara	Gateway	DNS
ns.telmex.com.mx	201.124.197.10	255.255.255.0	201.124.197.1	NA

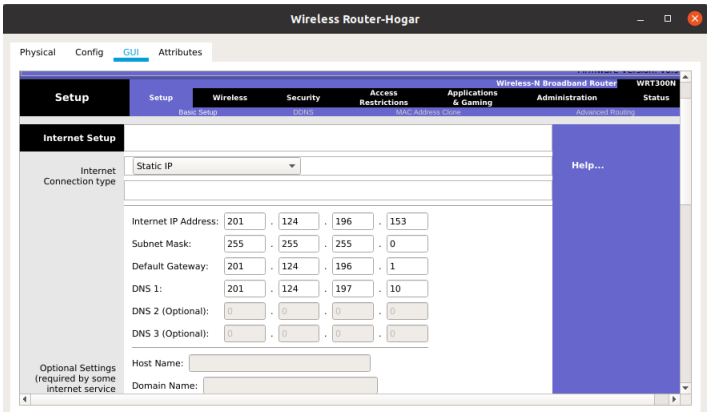


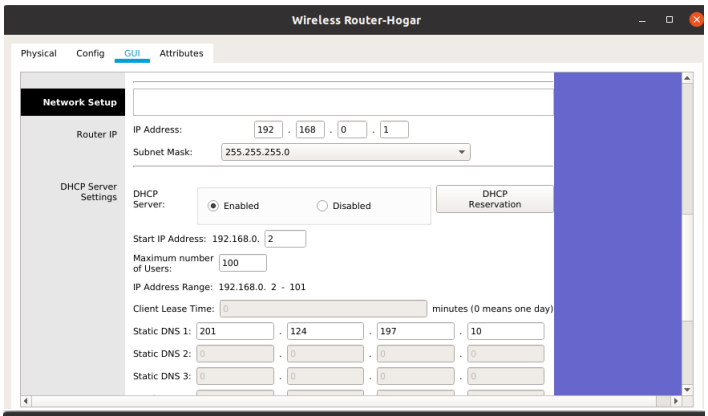

www.google.com.mx
Physical
Config
Services
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0040.0BC8.91D1
IP Configuration
DHCP
Static
IP Address
216.58.193.3
Subnet Mask
255.255.255.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address:
FE80::240:BFF:FEC8:91D1
Laptop1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
Global Settings
Display Name
Laptop1
Interfaces
FastEthernet0
Gateway/DNS IPv4
DHCP
Static
Gateway
216.58.193.1
DNS Server
216.58.193.2
Gateway/DNS IPv6
DHCP
Auto Config
Static
Laptop1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0001.4200.5508
IP Configuration
DHCP
Static
IP Address
216.58.193.10
Subnet Mask
255.255.255.0
IPv6 Configuration
DHCP
Auto Config
Static
IPv6 Address
Link Local Address:
FE80::201:42FF:FE00:5508



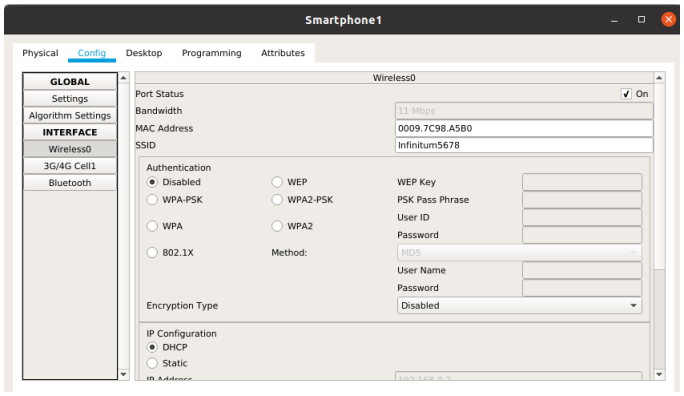


Se configura el Wireless Router del hogar en la subred de Telmex.

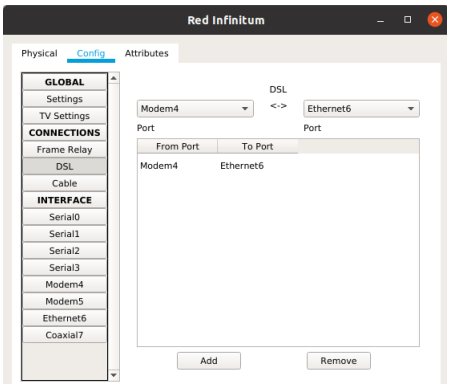




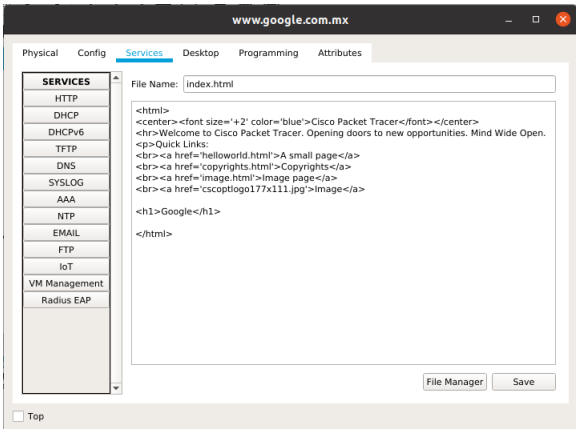
Se conecta el Smartphone al router.



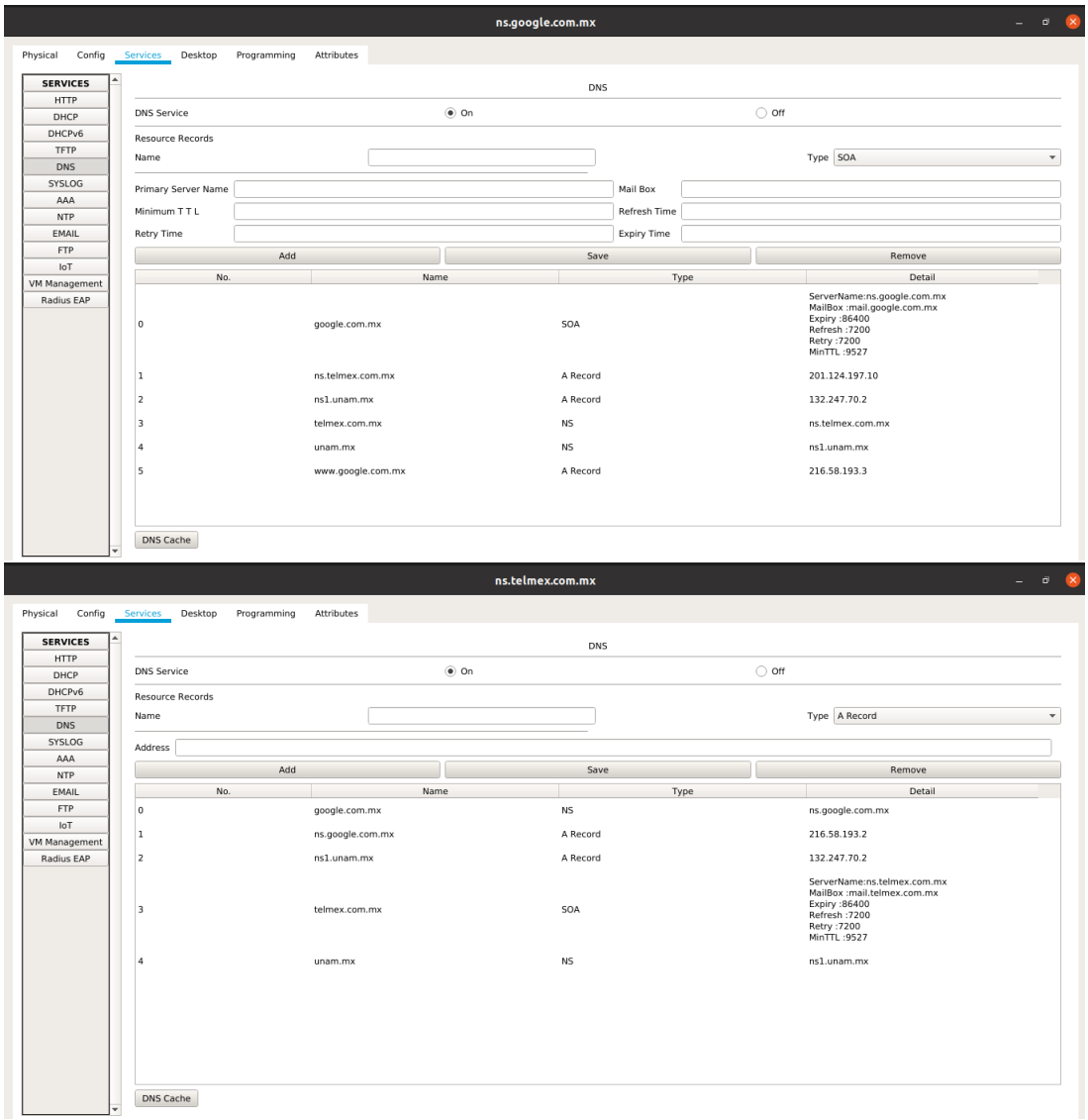
Se configura el dispositivo Cloud-PT con el nombre de Red Infinitum.

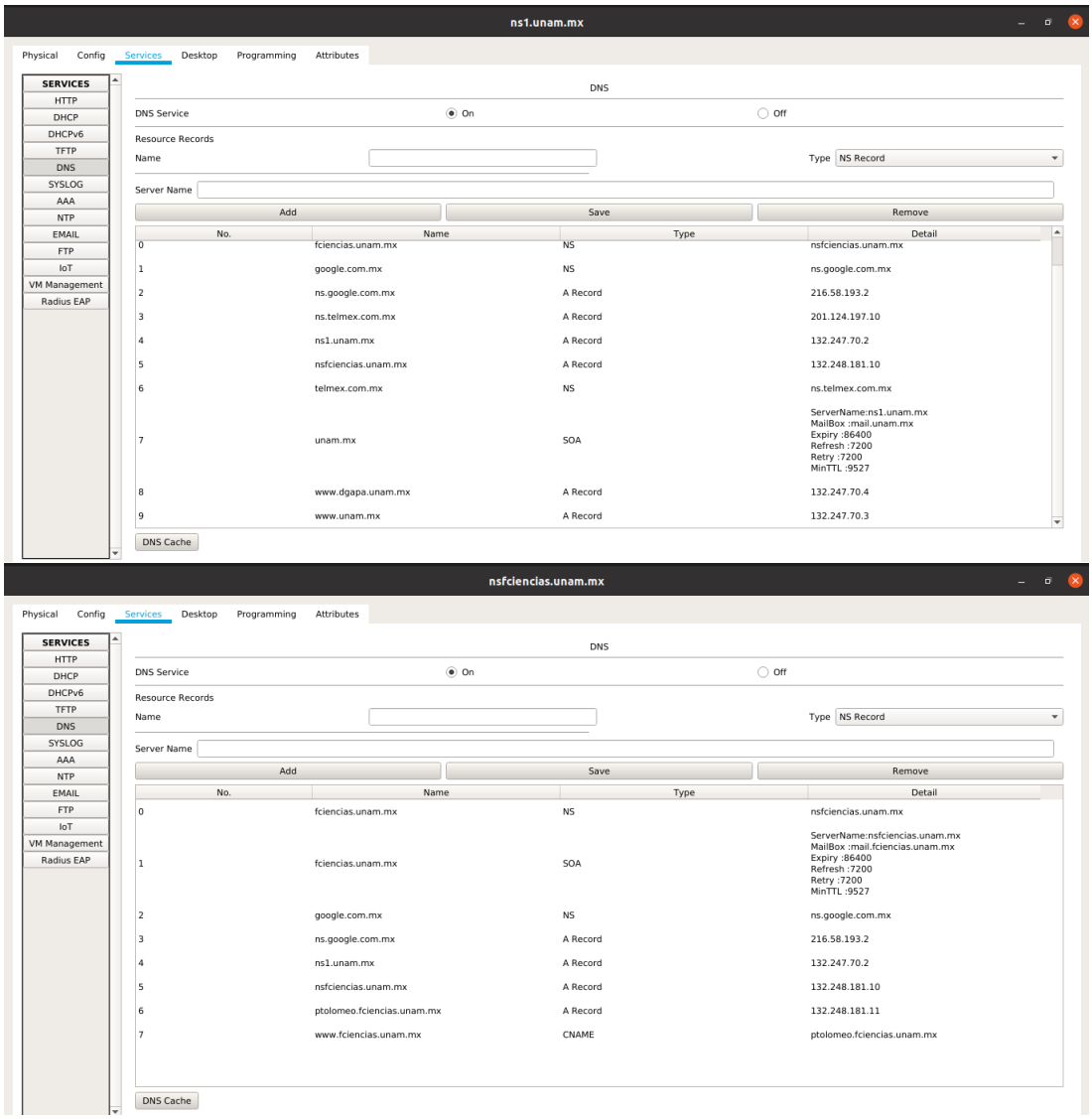


Después, se configura el sitio web de Google, como se hizo con los sitios en la práctica anterior.



Se deben configurar los servidores DNS que se acaban de agregar, además de agregar registros a los servidores de Ciencias y DGTIC.

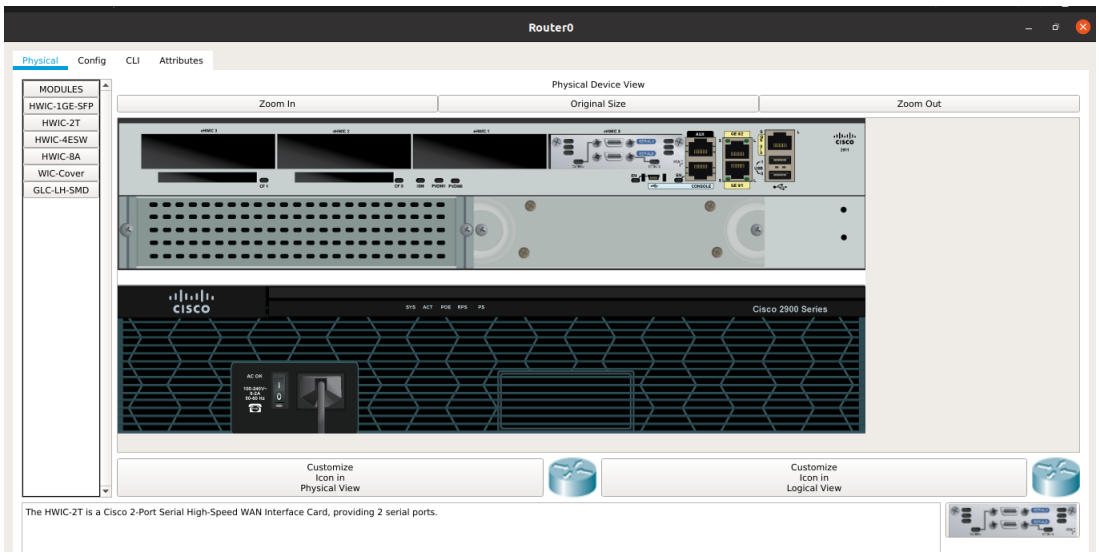

ns.google.com.mx
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DNS
DNS Service
On
Off
Resource Records
Name
Type
SOA
Primary Server Name
Mail Box
Minimum T T L
Refresh Time
Retry Time
Expiry Time
Add
Save
Remove
No.
Name
Type
Detail
0
google.com.mx
SOA
ServerName:ns.google.com.mx
MailBox :mail.google.com.mx
Expiry :86400
Refresh :7200
Retry :7200
MinTTL :9527
1
ns.telmex.com.mx
A Record
201.124.197.10
2
ns1.unam.mx
A Record
132.247.70.2
3
telmex.com.mx
NS
ns.telmex.com.mx
4
unam.mx
NS
ns1.unam.mx
5
www.google.com.mx
A Record
216.58.193.3
DNS Cache
ns.telmex.com.mx
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DNS
DNS Service
On
Off
Resource Records
Name
Type
A Record
Address
Add
Save
Remove
No.
Name
Type
Detail
0
google.com.mx
NS
ns.google.com.mx
1
ns.google.com.mx
A Record
216.58.193.2
2
ns1.unam.mx
A Record
132.247.70.2
3
telmex.com.mx
SOA
ServerName:ns.telmex.com.mx
MailBox :mail.telmex.com.mx
Expiry :86400
Refresh :7200
Retry :7200
MinTTL :9527
4
unam.mx
NS
ns1.unam.mx
DNS Cache



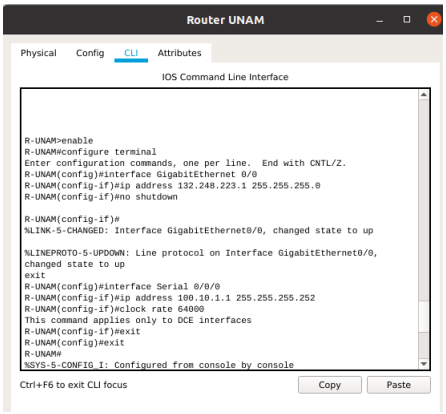
Se cambian los *display name* y *hostname* de los routers de Google, UNAM y Telmex.

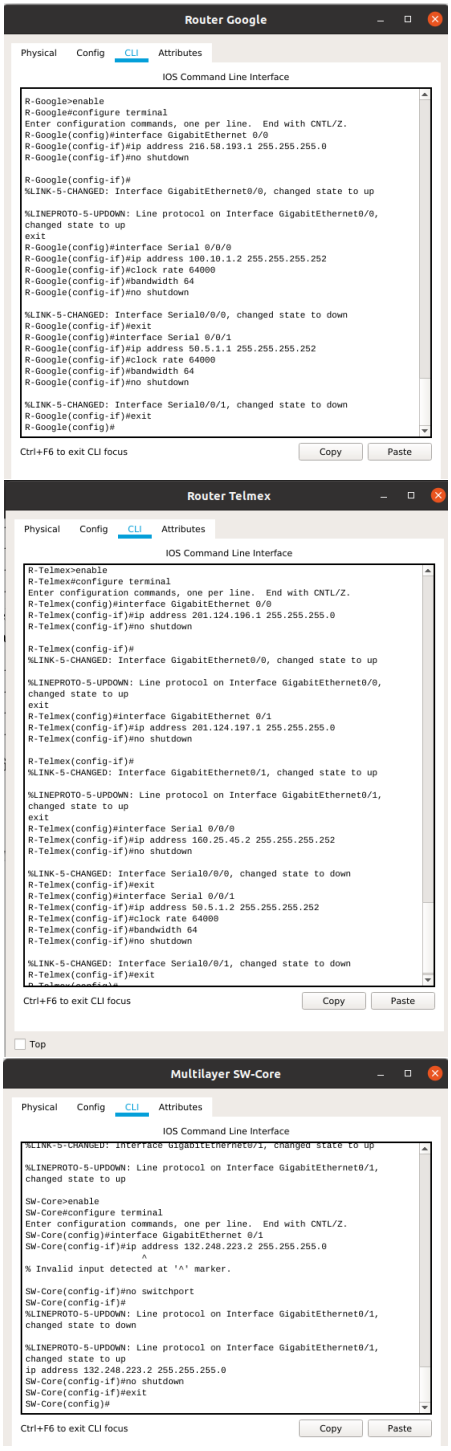
Dispositivo	**Nombre**
Router UNAM	R-UNAM
Router Google	R-Google
Router Telmex	R-Telmex

Para cada uno de los tres routers se agrega la interfaz HWIC-2T.

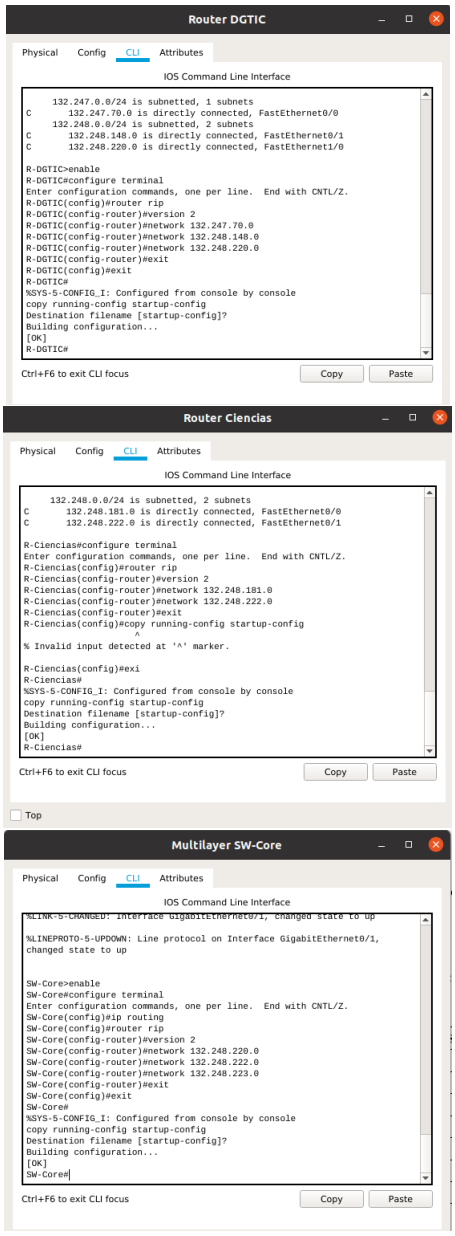


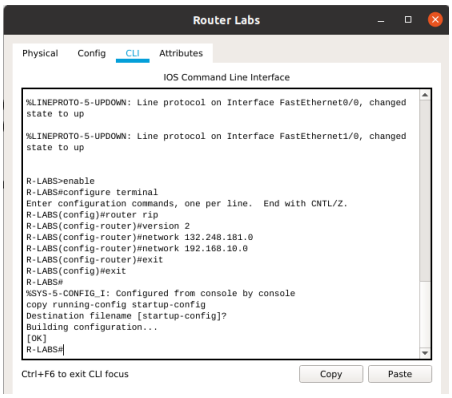
Se configuran los routers y el SW-Core como en la práctica anterior, además se ponen configuraciones para poder agregar los cables DTE o DCE. En este paso se coloca la dirección de cada cable.



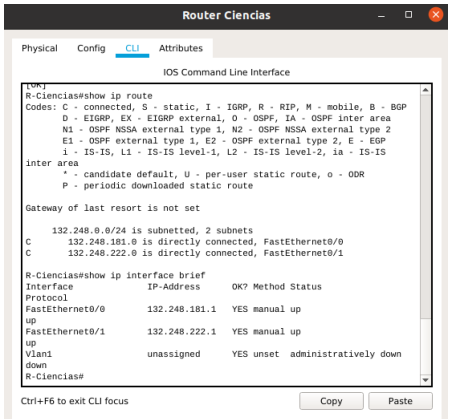

Router Google
Physical
Config
CLI
Attributes
IOS Command Line Interface
R-Google>enable
R-Google#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R-Google(config)#interface GigabitEthernet 0/0
R-Google(config-if)#ip address 216.58.193.1 255.255.255.0
R-Google(config-if)#no shutdown
R-Google(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0,
changed state to up
exit
R-Google(config)#interface Serial 0/0/0
R-Google(config-if)#ip address 100.10.1.2 255.255.255.252
R-Google(config-if)#clock rate 64000
R-Google(config-if)#bandwidth 64
R-Google(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
R-Google(config-if)#exit
R-Google(config)#interface Serial 0/0/1
R-Google(config-if)#ip address 50.5.1.1 255.255.255.252
R-Google(config-if)#clock rate 64000
R-Google(config-if)#bandwidth 64
R-Google(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to down
R-Google(config-if)#exit
R-Google(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste
Router Telmex
Physical
Config
CLI
Attributes
IOS Command Line Interface
R-Telmex>enable
R-Telmex#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R-Telmex(config)#interface GigabitEthernet 0/0
R-Telmex(config-if)#ip address 201.124.196.1 255.255.255.0
R-Telmex(config-if)#no shutdown
R-Telmex(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0,
changed state to up
exit
R-Telmex(config)#interface GigabitEthernet 0/1
R-Telmex(config-if)#ip address 201.124.197.1 255.255.255.0
R-Telmex(config-if)#no shutdown
R-Telmex(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1,
changed state to up
exit
R-Telmex(config)#interface Serial 0/0/0
R-Telmex(config-if)#ip address 160.25.45.2 255.255.255.252
R-Telmex(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to down
R-Telmex(config-if)#exit
R-Telmex(config)#interface Serial 0/0/1
R-Telmex(config-if)#ip address 50.5.1.2 255.255.255.252
R-Telmex(config-if)#clock rate 64000
R-Telmex(config-if)#bandwidth 64
R-Telmex(config-if)#no shutdown
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to down
R-Telmex(config-if)#exit
Ctrl+F6 to exit CLI focus
Copy
Paste
Top
Multilayer SW-Core
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1,
changed state to up
SW-Core>enable
SW-Core#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
SW-Core(config)#interface GigabitEthernet 0/1
SW-Core(config-if)#ip address 132.248.223.2 255.255.255.0
^
% Invalid input detected at '^' marker.
SW-Core(config-if)#no switchport
SW-Core(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1,
changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1,
changed state to up
ip address 132.248.223.2 255.255.255.0
SW-Core(config-if)#no shutdown
SW-Core(config-if)#exit
SW-Core(config)#
Ctrl+F6 to exit CLI focus
Copy
Paste

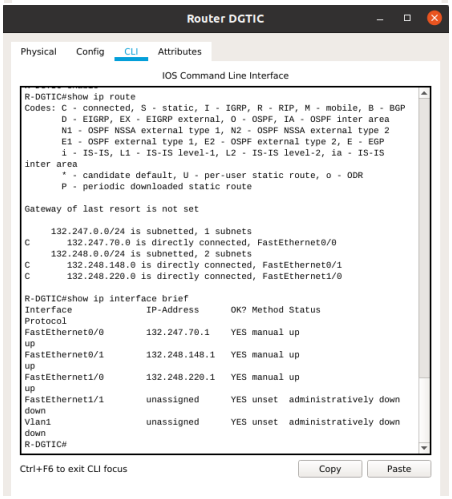
Hay que configurar las rutas dinámicas en todos los routers y el SW-Core. Para eso se usa RIP 2.

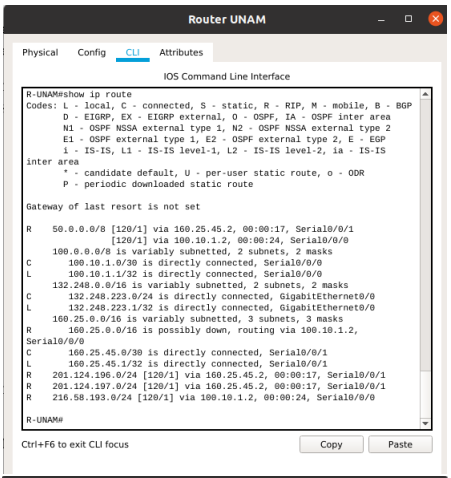

Router DGTIC
Physical
Config
CLI
Attributes
IOS Command Line Interface
132.247.0.0/24 is subnetted, 1 subnets
C 132.247.70.0 is directly connected, FastEthernet0/0
132.248.0.0/24 is subnetted, 2 subnets
C 132.248.148.0 is directly connected, FastEthernet0/1
C 132.248.220.0 is directly connected, FastEthernet1/0
R-DGTIC>enable
R-DGTIC#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R-DGTIC(config)#router rip
R-DGTIC(config-router)#version 2
R-DGTIC(config-router)#network 132.247.70.0
R-DGTIC(config-router)#network 132.248.148.0
R-DGTIC(config-router)#network 132.248.220.0
R-DGTIC(config-router)#exit
R-DGTIC(config)#exit
R-DGTIC#
%SYS-5-CONFIG_I: Configured from console by console
copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R-DGTIC#
Ctrl+F6 to exit CLI focus
Copy
Paste
Router Ciencias
Physical
Config
CLI
Attributes
IOS Command Line Interface
132.248.0.0/24 is subnetted, 2 subnets
C 132.248.181.0 is directly connected, FastEthernet0/0
C 132.248.222.0 is directly connected, FastEthernet0/1
R-Ciencias#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R-Ciencias(config)#router rip
R-Ciencias(config-router)#version 2
R-Ciencias(config-router)#network 132.248.181.0
R-Ciencias(config-router)#network 132.248.222.0
R-Ciencias(config-router)#exit
R-Ciencias(config)#copy running-config startup-config
^
% Invalid input detected at '^' marker.
R-Ciencias(config)#exi
R-Ciencias#
%SYS-5-CONFIG_I: Configured from console by console
copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R-Ciencias#
Ctrl+F6 to exit CLI focus
Copy
Paste
Top
Multilayer SW-Core
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1,
changed state to up
SW-Core>enable
SW-Core#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
SW-Core(config)#ip routing
SW-Core(config)#router rip
SW-Core(config-router)#version 2
SW-Core(config-router)#network 132.248.220.0
SW-Core(config-router)#network 132.248.222.0
SW-Core(config-router)#network 132.248.223.0
SW-Core(config-router)#exit
SW-Core(config)#exit
SW-Core#
%SYS-5-CONFIG_I: Configured from console by console
copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
SW-Core#
Ctrl+F6 to exit CLI focus
Copy
Paste

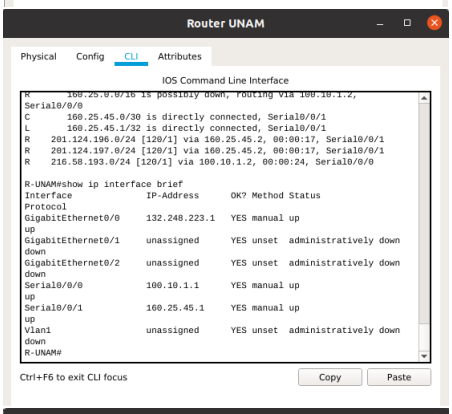


Se puede ver la configuración con los comandos: `show ip route` y `show ip interface brief`.

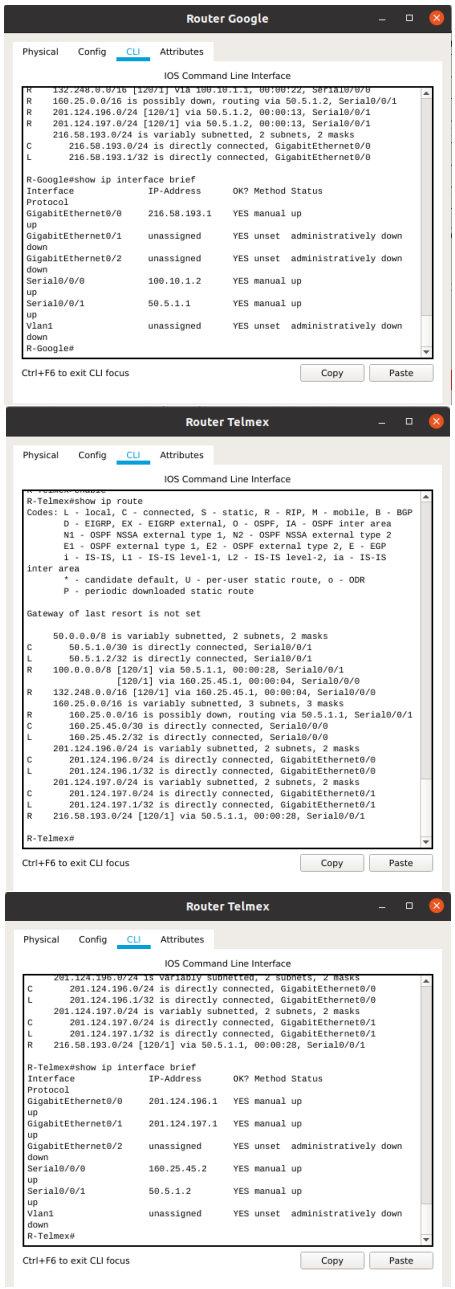


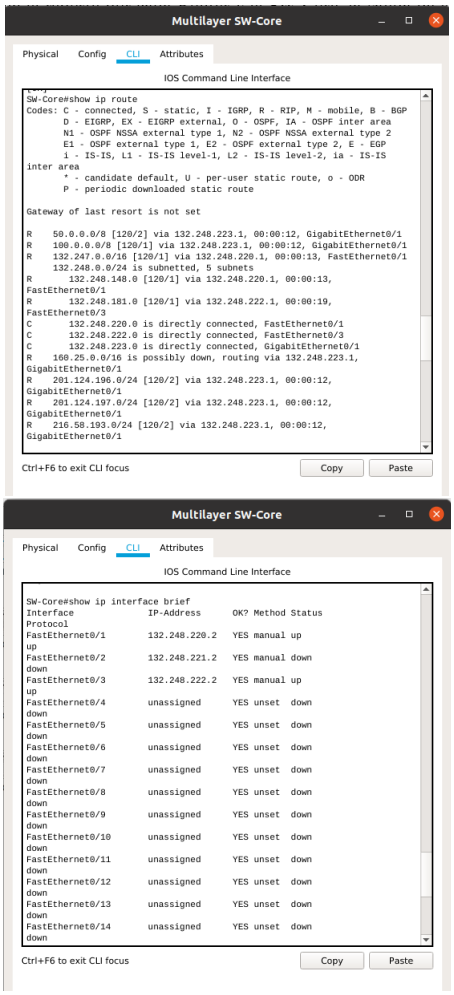



Router UNAM
Physical
Config
CLI
Attributes
IOS Command Line Interface
R-UNAM#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
R 50.0.0.0/8 [120/1] via 160.25.45.2, 00:00:17, Serial0/0/1
[120/1] via 100.10.1.2, 00:00:24, Serial0/0/0
100.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 100.10.1.0/30 is directly connected, Serial0/0/0
L 100.10.1.1/32 is directly connected, Serial0/0/0
132.248.0.0/16 is variably subnetted, 2 subnets, 2 masks
C 132.248.223.0/24 is directly connected, GigabitEthernet0/0
L 132.248.223.1/32 is directly connected, GigabitEthernet0/0
160.25.0.0/16 is variably subnetted, 3 subnets, 3 masks
R 160.25.0.0/16 is possibly down, routing via 100.10.1.2,
Serial0/0/0
C 160.25.45.0/30 is directly connected, Serial0/0/1
L 160.25.45.1/32 is directly connected, Serial0/0/1
R 201.124.196.0/24 [120/1] via 160.25.45.2, 00:00:17, Serial0/0/1
R 201.124.197.0/24 [120/1] via 160.25.45.2, 00:00:17, Serial0/0/1
R 216.58.193.0/24 [120/1] via 100.10.1.2, 00:00:24, Serial0/0/0
R-UNAM#
Ctrl+F6 to exit CLI focus
Copy
Paste

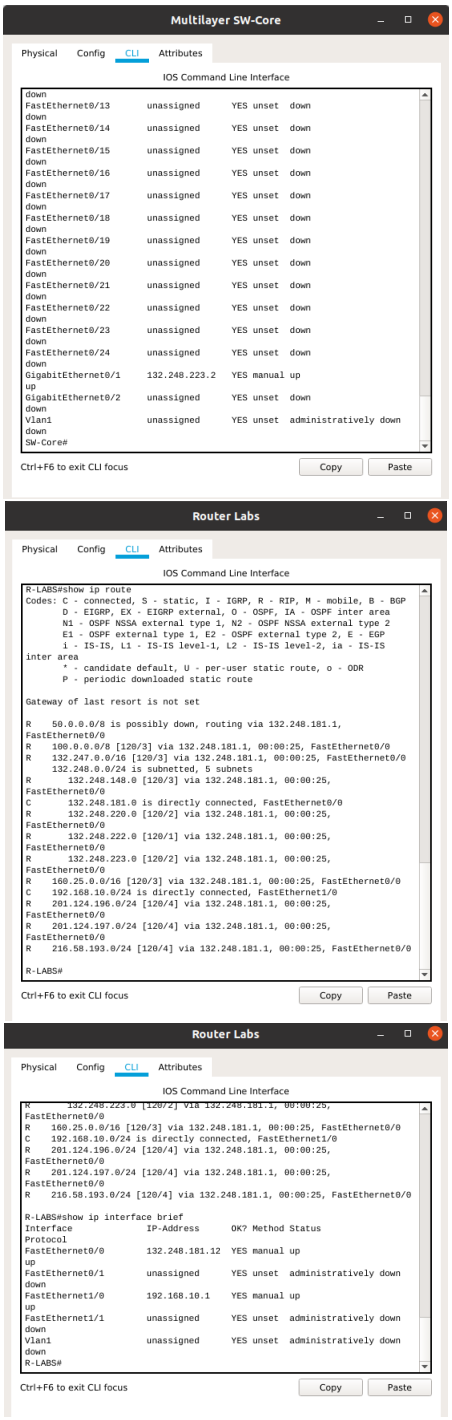

Router UNAM
Physical
Config
CLI
Attributes
IOS Command Line Interface
R 160.25.0.0/16 is possibly down, routing via 100.10.1.2,
Serial0/0/0
C 160.25.45.0/30 is directly connected, Serial0/0/1
L 160.25.45.1/32 is directly connected, Serial0/0/1
R 201.124.196.0/24 [120/1] via 160.25.45.2, 00:00:17, Serial0/0/1
R 201.124.197.0/24 [120/1] via 160.25.45.2, 00:00:17, Serial0/0/1
R 216.58.193.0/24 [120/1] via 100.10.1.2, 00:00:24, Serial0/0/0
R-UNAM#show ip interface brief
Interface IP-Address OK? Method Status
Protocol
GigabitEthernet0/0 132.248.223.1 YES manual up
up
GigabitEthernet0/1 unassigned YES unset administratively down
down
GigabitEthernet0/2 unassigned YES unset administratively down
down
Serial0/0/0 100.10.1.1 YES manual up
up
Serial0/0/1 160.25.45.1 YES manual up
up
Vlan1 unassigned YES unset administratively down
down
R-UNAM#
Ctrl+F6 to exit CLI focus
Copy
Paste


Router Google
Physical
Config
CLI
Attributes
IOS Command Line Interface
R-Google>enable
R-Google#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
50.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 50.5.1.0/30 is directly connected, Serial0/0/1
L 50.5.1.1/32 is directly connected, Serial0/0/1
100.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 100.10.1.0/30 is directly connected, Serial0/0/0
L 100.10.1.2/32 is directly connected, Serial0/0/0
R 132.248.0.0/16 [120/1] via 100.10.1.1, 00:00:22, Serial0/0/0
R 160.25.0.0/16 is possibly down, routing via 50.5.1.2, Serial0/0/1
R 201.124.196.0/24 [120/1] via 50.5.1.2, 00:00:13, Serial0/0/1
R 201.124.197.0/24 [120/1] via 50.5.1.2, 00:00:13, Serial0/0/1
216.58.193.0/24 is variably subnetted, 2 subnets, 2 masks
C 216.58.193.0/24 is directly connected, GigabitEthernet0/0
L 216.58.193.1/32 is directly connected, GigabitEthernet0/0
R-Google#
Ctrl+F6 to exit CLI focus
Copy
Paste


Router Google
Physical
Config
CLI
Attributes
IOS Command Line Interface
R 132.248.0.0/16 [120/1] via 100.10.1.1, 00:00:22, Serial0/0/0
R 160.25.0.0/16 is possibly down, routing via 50.5.1.2, Serial0/0/1
R 201.124.196.0/24 [120/1] via 50.5.1.2, 00:00:13, Serial0/0/1
R 201.124.197.0/24 [120/1] via 50.5.1.2, 00:00:13, Serial0/0/1
216.58.193.0/24 is variably subnetted, 2 subnets, 2 masks
C 216.58.193.0/24 is directly connected, GigabitEthernet0/0
L 216.58.193.1/32 is directly connected, GigabitEthernet0/0
R-Google#show ip interface brief
Interface IP-Address OK? Method Status
Protocol
GigabitEthernet0/0 216.58.193.1 YES manual up
up
GigabitEthernet0/1 unassigned YES unset administratively down
down
GigabitEthernet0/2 unassigned YES unset administratively down
down
Serial0/0/0 100.10.1.2 YES manual up
up
Serial0/0/1 50.5.1.1 YES manual up
up
Vlan1 unassigned YES unset administratively down
down
R-Google#
Ctrl+F6 to exit CLI focus
Copy
Paste
Router Telmex
Physical
Config
CLI
Attributes
IOS Command Line Interface
R-Telmex#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
50.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 50.5.1.0/30 is directly connected, Serial0/0/1
L 50.5.1.2/32 is directly connected, Serial0/0/1
R 100.0.0.0/8 [120/1] via 50.5.1.1, 00:00:28, Serial0/0/1
[120/1] via 160.25.45.1, 00:00:04, Serial0/0/0
R 132.248.0.0/16 [120/1] via 160.25.45.1, 00:00:04, Serial0/0/0
160.25.0.0/16 is variably subnetted, 3 subnets, 3 masks
R 160.25.0.0/16 is possibly down, routing via 50.5.1.1, Serial0/0/1
C 160.25.45.0/30 is directly connected, Serial0/0/0
L 160.25.45.2/32 is directly connected, Serial0/0/0
201.124.196.0/24 is variably subnetted, 2 subnets, 2 masks
C 201.124.196.0/24 is directly connected, GigabitEthernet0/0
L 201.124.196.1/32 is directly connected, GigabitEthernet0/0
201.124.197.0/24 is variably subnetted, 2 subnets, 2 masks
C 201.124.197.0/24 is directly connected, GigabitEthernet0/1
L 201.124.197.1/32 is directly connected, GigabitEthernet0/1
R 216.58.193.0/24 [120/1] via 50.5.1.1, 00:00:28, Serial0/0/1
R-Telmex#
Ctrl+F6 to exit CLI focus
Copy
Paste
Router Telmex
Physical
Config
CLI
Attributes
IOS Command Line Interface
201.124.196.0/24 is variably subnetted, 2 subnets, 2 masks
C 201.124.196.0/24 is directly connected, GigabitEthernet0/0
L 201.124.196.1/32 is directly connected, GigabitEthernet0/0
201.124.197.0/24 is variably subnetted, 2 subnets, 2 masks
C 201.124.197.0/24 is directly connected, GigabitEthernet0/1
L 201.124.197.1/32 is directly connected, GigabitEthernet0/1
R 216.58.193.0/24 [120/1] via 50.5.1.1, 00:00:28, Serial0/0/1
R-Telmex#show ip interface brief
Interface IP-Address OK? Method Status
Protocol
GigabitEthernet0/0 201.124.196.1 YES manual up
up
GigabitEthernet0/1 201.124.197.1 YES manual up
up
GigabitEthernet0/2 unassigned YES unset administratively down
down
Serial0/0/0 160.25.45.2 YES manual up
up
Serial0/0/1 50.5.1.2 YES manual up
up
Vlan1 unassigned YES unset administratively down
down
R-Telmex#
Ctrl+F6 to exit CLI focus
Copy
Paste


Multilayer SW-Core
Physical
Config
CLI
Attributes
IOS Command Line Interface
SW-Core#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS
inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
R 50.0.0.0/8 [120/2] via 132.248.223.1, 00:00:12, GigabitEthernet0/1
R 100.0.0.0/8 [120/1] via 132.248.223.1, 00:00:12, GigabitEthernet0/1
R 132.247.0.0/16 [120/1] via 132.248.220.1, 00:00:13, FastEthernet0/1
132.248.0.0/24 is subnetted, 5 subnets
R 132.248.148.0 [120/1] via 132.248.220.1, 00:00:13,
FastEthernet0/1
R 132.248.181.0 [120/1] via 132.248.222.1, 00:00:19,
FastEthernet0/3
C 132.248.220.0 is directly connected, FastEthernet0/1
C 132.248.222.0 is directly connected, FastEthernet0/3
C 132.248.223.0 is directly connected, GigabitEthernet0/1
R 160.25.0.0/16 is possibly down, routing via 132.248.223.1,
GigabitEthernet0/1
R 201.124.196.0/24 [120/2] via 132.248.223.1, 00:00:12,
GigabitEthernet0/1
R 201.124.197.0/24 [120/2] via 132.248.223.1, 00:00:12,
GigabitEthernet0/1
R 216.58.193.0/24 [120/2] via 132.248.223.1, 00:00:12,
GigabitEthernet0/1
Ctrl+F6 to exit CLI focus
Copy
Paste

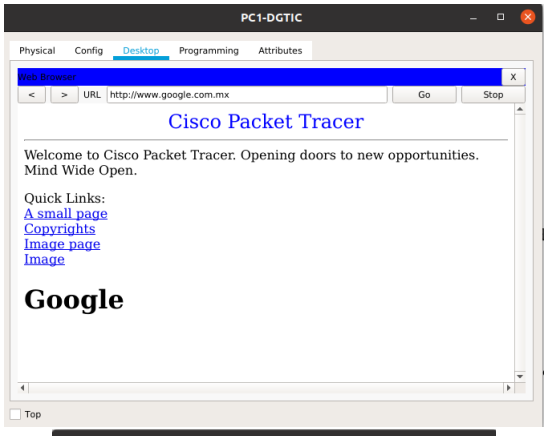
Multilayer SW-Core
Physical
Config
CLI
Attributes
IOS Command Line Interface
SW-Core#show ip interface brief
Interface IP-Address OK? Method Status
Protocol
FastEthernet0/1 132.248.220.2 YES manual up
up
FastEthernet0/2 132.248.221.2 YES manual down
down
FastEthernet0/3 132.248.222.2 YES manual up
up
FastEthernet0/4 unassigned YES unset down
down
FastEthernet0/5 unassigned YES unset down
down
FastEthernet0/6 unassigned YES unset down
down
FastEthernet0/7 unassigned YES unset down
down
FastEthernet0/8 unassigned YES unset down
down
FastEthernet0/9 unassigned YES unset down
down
FastEthernet0/10 unassigned YES unset down
down
FastEthernet0/11 unassigned YES unset down
down
FastEthernet0/12 unassigned YES unset down
down
FastEthernet0/13 unassigned YES unset down
down
FastEthernet0/14 unassigned YES unset down
down
Ctrl+F6 to exit CLI focus
Copy
Paste

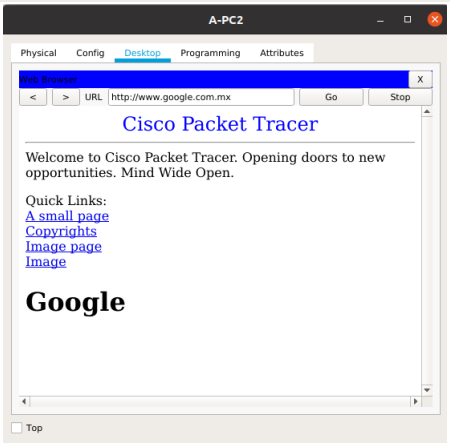


Finalmente hay que comprobar que se puede acceder a los servidores web

desde otras subredes.

Dispositivo	Sitio web
PC1-DGTIC	www.google.com.mx
A-PC2	www.google.com.mx
Laptop1	www.unam.mx www.fciencias.unam.mx
Smartphone2	www.google.com.mx www.unam.mx www.fciencias.unam.mx





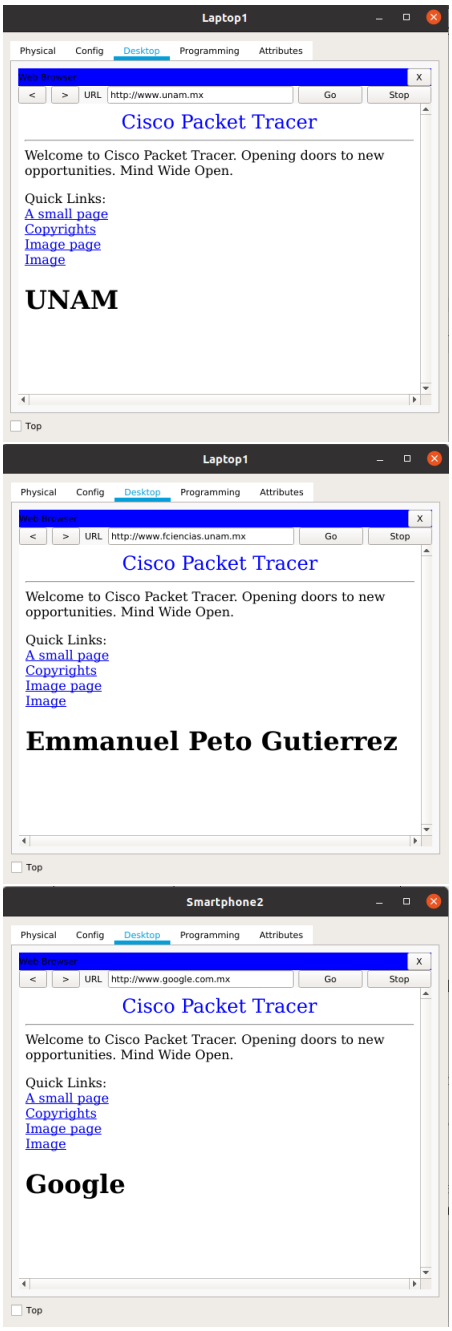

Laptop1
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://www.unam.mx
Go
Stop
Cisco Packet Tracer
Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
Quick Links:
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Image page
Image
UNAM
Top
Laptop1
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://www.fciencias.unam.mx
Go
Stop
Cisco Packet Tracer
Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
Quick Links:
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Emmanuel Peto Gutierrez
Top
Smartphone2
Physical
Config
Desktop
Programming
Attributes
Web Browser
URL
http://www.google.com.mx
Go
Stop
Cisco Packet Tracer
Welcome to Cisco Packet Tracer. Opening doors to new opportunities. Mind Wide Open.
Quick Links:
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Image page
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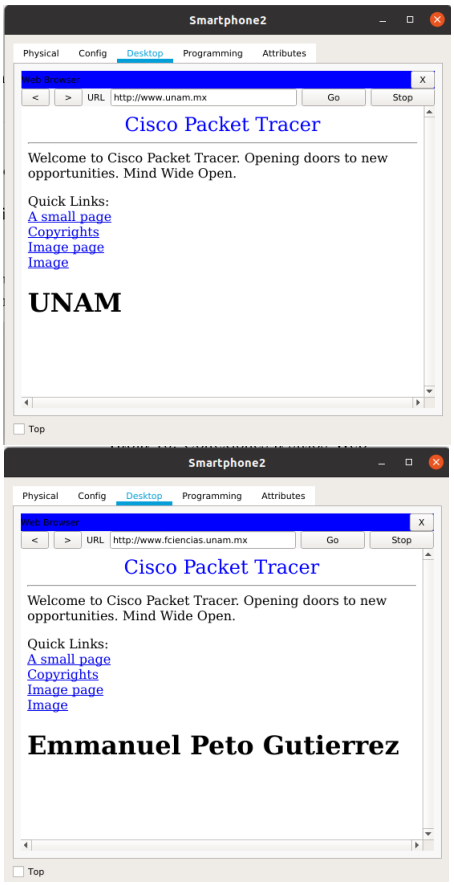
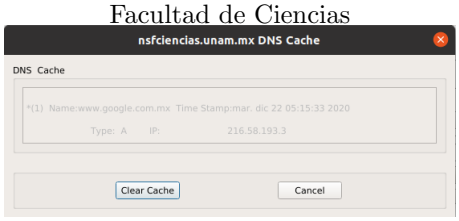
Google
Top

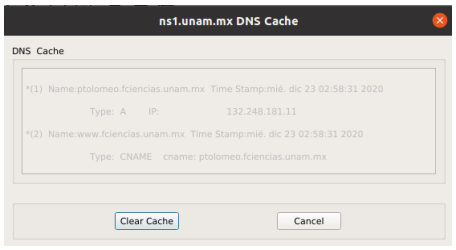


Después de ingresar a dichas páginas web cambia la memoria caché de cada servidor DNS.

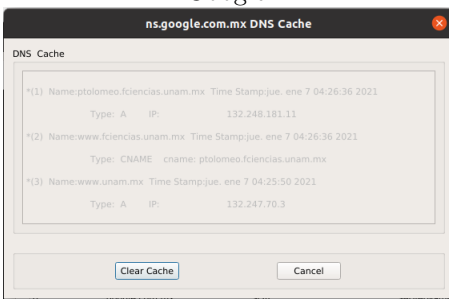
Facultad de Ciencias



UNAM

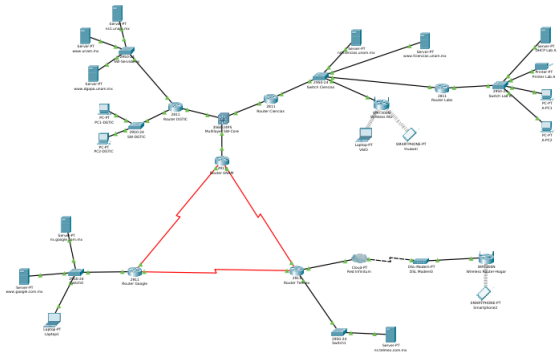


Google



Telmex

La red final es la siguiente.



2. Cuestionario

1. **¿Cuáles son diferencias entre las versiones 1 y 2 del protocolo RIP?**

   Las características de la versión 2 del protocolo, que no implementa la versión 1, son:

   - Máscaras de subred de longitud variable.
   - Da soporte a redes discontiguas.
   - Utiliza ruteo *classless*.
   - Autentificación a través de contraseña codificada MD5.
   - Las entradas en RIPv2 contienen la dirección IP de la red de destino, su máscara, el siguiente enrutador y la métrica.

2. **¿Qué algoritmo de ruteo implementa RIP versión 2?**

   RIP es un protocolo que está basado en el algoritmo de Bellman-Ford. [RFC 2453]