

REPORTE DE PRACTICA 10 B

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1 Información de Subredes

Tabla 1: Subredes A y B

| BLOQUE 1 | |
|--|-----------------|
| Dirección IP de la subred | 192.172.11.0 |
| Máscara de subred | 255.255.255.192 |
| Cantidad de host utilizables por la subred | $2^6 - 2 = 62$ |
| Primera dirección del host | 192.172.11.1 |
| Última dirección de host | 192.172.11.62 |
| Dirección IP de la subred | 192.172.11.64 |
| Máscara de subred | 255.255.255.224 |
| Cantidad de host utilizables por la subred | $2^5 - 2 = 30$ |
| Primera dirección del host | 192.172.11.65 |
| Última dirección de host | 192.172.11.94 |

Tabla 2: Subred C y D

| BLOQUE 2 | |
|--|-----------------|
| Dirección IP de la subred | 192.168.8.0 |
| Máscara de subred | 255.255.254.0 |
| Cantidad de host utilizables por la subred | $2^9 - 2 = 510$ |
| Primera dirección del host | 192.168.8.1 |
| Última dirección de host | 192.168.9.254 |
| Dirección IP de la subred | 192.168.10.0 |
| Máscara de subred | 255.255.255.128 |
| Cantidad de host utilizables por la subred | $2^7 - 2 = 126$ |
| Primera dirección del host | 192.168.10.1 |
| Última dirección de host | 192.168.10.126 |

Tabla 3: Subredes E y F

| BLOQUE 3 | |
|--|-----------------|
| Dirección IP de la subred | 192.224.11.0 |
| Máscara de subred | 255.255.255.224 |
| Cantidad de host utilizables por la subred | $2^9 - 2 = 30$ |
| Primera dirección del host | 192.224.11.1 |
| Última dirección de host | 192.224.11.30 |
| Dirección IP de la subred | 192.224.11.32 |
| Máscara de subred | 255.255.255.240 |
| Cantidad de host utilizables por la subred | $2^4 - 2 = 14$ |
| Primera dirección del host | 192.224.11.33 |
| Última dirección de host | 192.224.11.46 |

Tabla 4: Subredes G y H

| BLOQUE 4 | |
|--|-----------------|
| Dirección IP de la subred | 10.20.11.0 |
| Máscara de subred | 255.255.255.0 |
| Cantidad de host utilizables por la subred | $2^9 - 2 = 254$ |
| Primera dirección del host | 10.20.11.1 |
| Última dirección de host | 10.20.11.254 |
| Dirección IP de la subred | 10.20.12.0 |
| Máscara de subred | 255.255.255.224 |
| Cantidad de host utilizables por la subred | $2^5 - 2 = 30$ |
| Primera dirección del host | 10.20.12.1 |
| Última dirección de host | 10.20.12.30 |

2 Tabla de direccionamiento

Tabla 5: Direccionamiento de Routers

| Dispositivo | Interfaz | Dirección IP | Máscara de Subred | Gateway por defecto |
|-------------|-----------------|----------------|-------------------|---------------------|
| Router 1 | FastEthernet0/0 | 192.172.11.62 | 255.255.255.192 | - |
| | FastEthernet0/1 | 192.172.11.94 | 255.255.255.224 | - |
| | Serial0/3/0 | 1.2.3.1 | 255.255.255.252 | - |
| | Serial0/3/1 | 4.5.6.1 | 255.255.255.252 | - |
| Router 2 | FastEthernet0/0 | 192.168.9.254 | 255.255.254.0 | - |
| | FastEthernet0/1 | 192.168.10.126 | 255.255.254.128 | - |
| | Serial0/1/0 | 1.2.4.1 | 255.255.255.252 | - |
| | Serial0/3/0 | 4.5.6.2 | 255.255.255.252 | - |
| | Serial0/3/1 | 1.4.2.1 | 255.255.255.252 | - |
| Router 3 | FastEthernet0/0 | 192.224.11.30 | 255.255.255.0 | - |
| | FastEthernet0/1 | 192.224.11.46 | 255.255.255.224 | - |
| | Serial0/1/0 | 1.3.6.1 | 255.255.255.252 | - |
| | Serial0/3/0 | 1.2.3.2 | 255.255.255.252 | - |
| | Serial0/3/1 | 1.4.2.2 | 255.255.255.252 | - |
| Router 4 | FastEthernet0/0 | 10.20.11.254 | 255.255.255.0 | - |
| | FastEthernet0/1 | 10.20.12.30 | 255.255.255.224 | - |
| | Serial0/3/0 | 1.2.4.2 | 255.255.255.252 | - |
| | Serial0/3/1 | 1.3.6.2 | 255.255.255.252 | - |

Tabla 6: Direccionamiento en PCs

| Dispositivo | Interfaz | Dirección IP | Máscara de Subred | Gateway por defecto |
|-------------|----------|---------------|-------------------|---------------------|
| PC0 | NIC | 192.172.11.1 | 255.255.255.192 | 192.172.11.62 |
| PC1 | NIC | 192.172.11.2 | | |
| PC2 | NIC | 192.172.11.3 | | |
| PC3 | NIC | 192.172.11.65 | 255.255.255.224 | 192.172.11.94 |
| PC4 | NIC | 192.172.11.66 | | |
| PC5 | NIC | 192.172.11.67 | | |
| PC6 | NIC | 192.168.8.1 | 255.255.254.0 | 192.168.9.254 |
| PC7 | NIC | 192.168.8.2 | | |
| PC8 | NIC | 192.168.8.3 | | |
| PC9 | NIC | 192.168.10.1 | 255.255.255.128 | 192.168.10.126 |
| PC10 | NIC | 192.168.10.2 | | |
| PC11 | NIC | 192.168.10.3 | | |
| PC12 | NIC | 192.224.11.1 | 255.255.255.224 | 192.224.11.30 |
| PC13 | NIC | 192.224.11.2 | | |
| PC14 | NIC | 192.224.11.3 | | |
| PC15 | NIC | 192.224.11.33 | 255.255.255.240 | 192.224.11.46 |
| PC16 | NIC | 192.224.11.34 | | |
| PC17 | NIC | 192.224.11.35 | | |
| PC18 | NIC | 10.20.11.1 | 255.255.255.0 | 10.20.11.254 |
| PC19 | NIC | 10.20.11.2 | | |
| PC20 | NIC | 10.20.11.3 | | |
| PC21 | NIC | 10.20.12.1 | 255.255.255.224 | 10.20.12.30 |
| PC22 | NIC | 10.20.12.2 | | |
| PC23 | NIC | 10.20.12.3 | | |

2.1 Tablas de ruteo

Tabla 7: Router 1

| Origen | Máscara | Dirección de red | Dirección Próximo Salto | Interfaz de salida |
|-----------|---------|------------------|-------------------------------|--------------------|
| Connected | /30 | 1.2.3.0 | - | Serial0/3/0 |
| Local | /32 | 1.2.3.1 | - | Serial0/3/0 |
| Connected | /30 | 4.5.6.0 | - | Serial0/3/1 |
| Local | /32 | 4.5.6.1 | - | Serial0/3/1 |
| Static | /24 | 10.20.11.0 | 4.5.6.2 | Serial0/3/1 |
| Static | /27 | 10.20.12.0 | 4.5.6.2 | Serial0/3/1 |
| Static | /23 | 192.168..8 | 4.5.6.2 | Serial0/3/1 |
| Static | /25 | 192.168.10.0 | 4.5.6.2 | Serial0/3/1 |
| Connected | /26 | 192.172.11.0 | - | FastEthernet0/0 |
| Local | /32 | 192.172.11.62 | - | FastEthernet0/0 |
| Connected | /27 | 192.172.11.64 | - | FastEthernet0/1 |
| Local | /32 | 192.172.11.94 | - | FastEthernet0/1 |
| Static | /27 | 192.224.11.0 | 1.2.3.2 | Serial0/3/0 |
| Static | /28 | 192.224.11.32 | 1.2.3.2 | Serial0/3/0 |

Tabla 8: Router 2

| Origen | Máscara | Dirección de red | Dirección Próximo Salto | Interfaz de salida |
|-----------|---------|------------------|-------------------------------|--------------------|
| Connected | /30 | 1.2.4.0 | - | Serial0/1/0 |
| Local | /32 | 1.2.4.1 | - | Serial0/1/0 |
| Connected | /30 | 1.4.2.0 | - | Serial0/3/1 |
| Local | /32 | 1.4.2.1 | - | Serial0/3/1 |
| Connected | /30 | 4.5.6.0 | - | Serial0/3/0 |
| Local | /32 | 4.5.6.2 | - | Serial0/3/0 |
| Static | /24 | 10.20.11.0 | 1.2.4.2 | Serial0/1/0 |
| Static | /27 | 10.20.12.0 | 1.2.4.2 | Serial0/1/0 |
| Connected | /23 | 192.168.8.0 | - | FastEthernet0/0 |
| Local | /32 | 192.168.9.254 | - | FastEthernet0/0 |
| Connected | /25 | 192.168.10.0 | - | FastEthernet0/1 |
| Local | /32 | 192.168.10.126 | - | FastEthernet0/1 |
| Static | /26 | 192.172.11.0 | 4.5.6.1 | Serial0/3/0 |
| Static | /27 | 192.172.11.64 | 4.5.6.1 | Serial0/3/0 |
| Static | /27 | 192.224.11.0 | 1.4.2.2 | Serial0/3/1 |
| Static | /28 | 192.224.11.32 | 1.4.2.2 | Serial0/3/1 |

Tabla 9: Router 3

| Origen | Máscara | Dirección de red | Dirección Próximo Salto | Interfaz de salida |
|-----------|---------|------------------|----------------------------|--------------------|
| Connected | /30 | 1.2.3.0 | - | Serial0/3/0 |
| Local | /32 | 1.2.3.2 | - | Serial0/1/0 |
| Connected | /30 | 1.3.6.0 | - | Serial0/1/0 |
| Local | /32 | 1.3.6.1 | - | Serial0/3/1 |
| Connected | /30 | 1.4.2.0 | - | Serial0/3/1 |
| Local | /32 | 1.4.2.2 | - | Serial0/3/1 |
| Static | /24 | 10.20.11.0 | 1.3.6.2 | |
| Static | /27 | 10.20.12.0 | 1.4.2.1 | |
| Static | /23 | 192.168.8.0 | 1.4.2.1 | |
| Static | /25 | 192.168.10.0 | 1.2.3.1 | |
| Static | /26 | 192.172.11.0 | 1.2.3.1 | |
| Static | /27 | 192.172.11.64 | 1.2.3.1 | |
| Connected | /27 | 192.224.11.0 | - | FastEthernet0/0 |
| Local | /32 | 192.224.11.30 | - | FastEthernet0/0 |
| Connected | /28 | 192.224.11.32 | - | FastEthernet0/1 |
| Local | /32 | 192.224.11.46 | - | FastEthernet0/1 |

Tabla 10: Router 4

| Origen | Máscara | Dirección de red | Dirección Próximo Salto | Interfaz de salida |
|-----------|---------|-------------------|-------------------------------|--------------------|
| Connected | /30 | 1.2.4.0 | - | Serial0/3/0 |
| Local | /32 | 1.2.4.2 | - | Serial0/3/0 |
| Connected | /30 | 1.3.6.0 | - | Serial0/3/1 |
| Local | /32 | 1.3.6.2 | - | Serial0/3/1 |
| Connected | /24 | 10.20.11.0 | - | FastEthernet0/0 |
| Local | /32 | 10.20.11.254 | - | FastEthernet0/0 |
| Connected | /27 | 10.20.12.0 | - | FastEthernet0/1 |
| Local | /32 | 0.20.12.30 | - | FastEthernet0/1 |
| Static | /23 | 192.168.8.0 | 1.2.4.1 | |
| Static | /25 | 192.168.10.0 | 1.2.4.1 | |
| Static | /26 | 192.172.11.0/26 | 1.2.4.1 | |
| Static | /27 | 192.172.11.64 | 1.2.4.1 | |
| Static | /27 | 192.224.11.0/27 [| 1.3.6.1 | |
| Static | /28 | 192.224.11.32/28 | 1.3.6.1 | |

3 Resultados

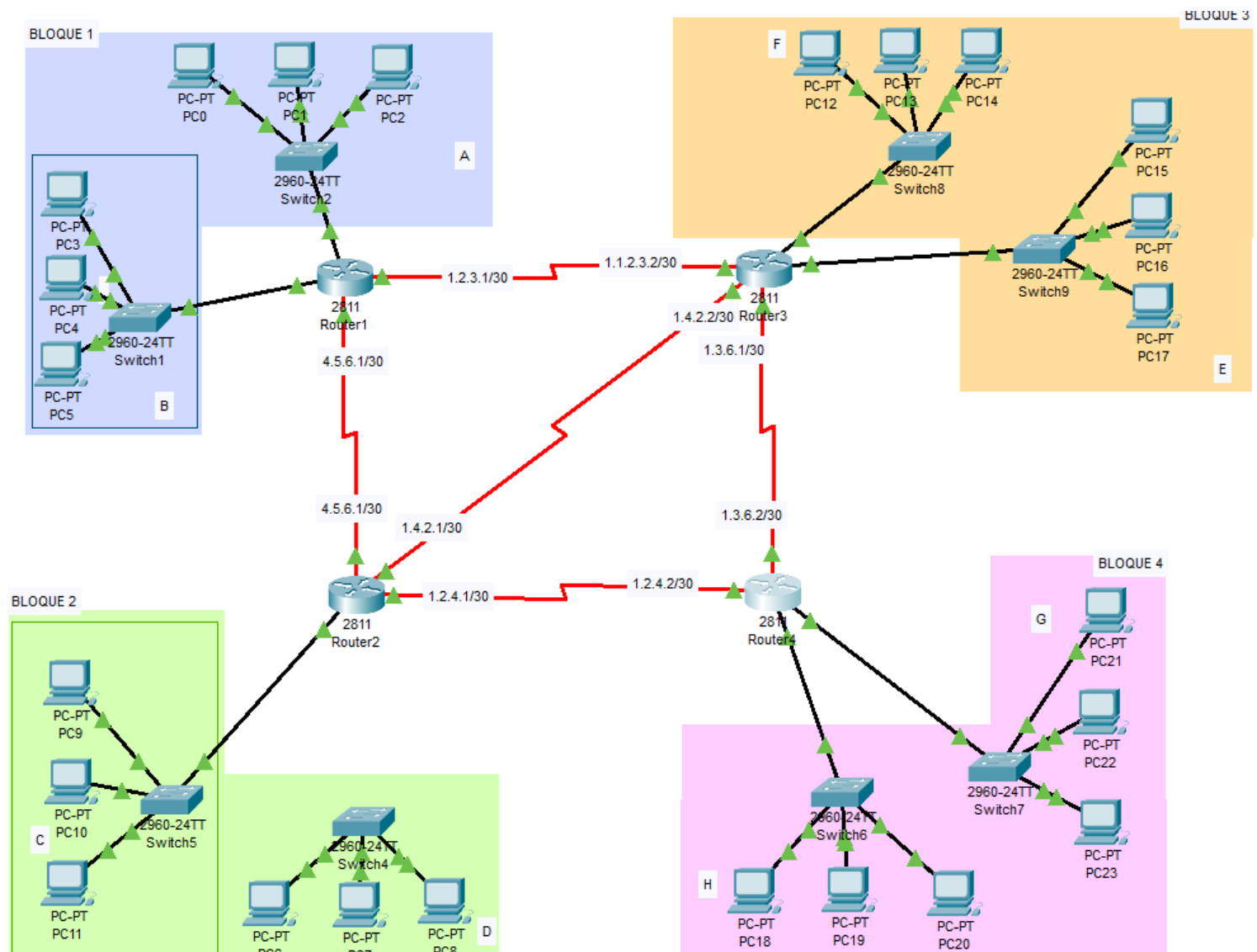


Figura 1: Topología de red

| PDU List Window | | | | | | | | | | |
|-----------------|-------------|--------|-------------|------|-------|-----------|----------|-----|--------|--------|
| Fire | Last Status | Source | Destination | Type | Color | Time(sec) | Periodic | Num | Edit | Delete |
| | Successful | PC0 | PC12 | ICMP | | 0.000 | N | 0 | (edit) | |
| | Successful | PC1 | PC16 | ICMP | | 0.000 | N | 1 | (edit) | |
| | Successful | PC0 | PC21 | ICMP | | 0.000 | N | 2 | (edit) | |
| | Successful | PC0 | PC19 | ICMP | | 0.000 | N | 3 | (edit) | |
| | Successful | PC3 | PC9 | ICMP | | 0.000 | N | 4 | (edit) | |
| | Successful | PC5 | PC7 | ICMP | | 0.000 | N | 5 | (edit) | |
| | Failed | PC1 | PC8 | ICMP | | 0.000 | N | 6 | (edit) | |

Figura 2: Pruebas de conexión de Bloque 1 a los demás bloques

```

Router1
Router>enable
Router#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

1.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 1.2.3.0/30 is directly connected, Serial0/3/0
L 1.2.3.1/32 is directly connected, Serial0/3/0
C 4.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 4.5.6.0/30 is directly connected, Serial0/3/1
L 4.5.6.1/32 is directly connected, Serial0/3/1
10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
S 10.20.11.0/24 [1/0] via 4.5.6.2
S 10.20.12.0/27 [1/0] via 4.5.6.2
S 192.168.8.0/23 [1/0] via 4.5.6.2
S 192.168.10.0/25 is subnetted, 1 subnets
S 192.168.10.0/25 [1/0] via 4.5.6.2
192.172.11.0/24 is variably subnetted, 4 subnets, 3 masks
C 192.172.11.0/26 is directly connected, FastEthernet0/0
L 192.172.11.64/32 is directly connected, FastEthernet0/0
C 192.172.11.64/27 is directly connected, FastEthernet0/1
L 192.172.11.94/32 is directly connected, FastEthernet0/1
192.224.11.0/24 is variably subnetted, 2 subnets, 2 masks
S 192.224.11.0/27 [1/0] via 1.2.3.2
S 192.224.11.32/28 [1/0] via 1.2.3.2

Router#
Router#
    
```

(a) Tabla de ruteo para Router 1

```

Router2
Router>enable
Router#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

1.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C 1.2.4.0/30 is directly connected, Serial0/1/0
L 1.2.4.1/32 is directly connected, Serial0/1/0
C 1.4.2.0/30 is directly connected, Serial0/3/1
L 1.4.2.1/32 is directly connected, Serial0/3/1
C 4.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 4.5.6.0/30 is directly connected, Serial0/3/0
L 4.5.6.2/32 is directly connected, Serial0/3/0
10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
S 10.20.11.0/24 [1/0] via 1.2.4.2
S 10.20.12.0/27 [1/0] via 1.2.4.2
C 192.168.8.0/23 is directly connected, FastEthernet0/0
192.168.9.0/32 is subnetted, 1 subnets
L 192.168.9.254/32 is directly connected, FastEthernet0/0
C 192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.168.10.0/25 is directly connected, FastEthernet0/1
L 192.168.10.136/32 is directly connected, FastEthernet0/1
192.172.11.0/24 is variably subnetted, 2 subnets, 2 masks
S 192.172.11.0/26 [1/0] via 4.5.6.1
S 192.172.11.64/27 [1/0] via 4.5.6.1
192.224.11.0/24 is variably subnetted, 2 subnets, 2 masks
S 192.224.11.0/27 [1/0] via 1.4.2.2
S 192.224.11.32/28 [1/0] via 1.4.2.2

Router#
Router#
    
```

(b) Tabla de ruteo para Router 2

```

Router3
Router>enable
Router#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

1.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
C 1.2.3.0/30 is directly connected, Serial0/3/0
L 1.2.3.2/32 is directly connected, Serial0/3/0
C 1.3.6.0/30 is directly connected, Serial0/1/0
L 1.3.6.1/32 is directly connected, Serial0/1/0
C 1.4.2.0/30 is directly connected, Serial0/3/1
L 1.4.2.2/32 is directly connected, Serial0/3/1
10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
S 10.20.11.0/24 [1/0] via 1.3.6.2
S 10.20.12.0/27 [1/0] via 1.3.6.2
S 192.168.8.0/23 [1/0] via 1.4.2.1
S 192.168.10.0/25 is subnetted, 1 subnets
S 192.168.10.0/25 [1/0] via 1.4.2.1
192.172.11.0/24 is variably subnetted, 2 subnets, 2 masks
S 192.172.11.0/26 [1/0] via 1.2.3.1
S 192.172.11.64/27 [1/0] via 1.2.3.1
192.224.11.0/24 is variably subnetted, 4 subnets, 3 masks
C 192.224.11.0/27 is directly connected, FastEthernet0/0
L 192.224.11.30/32 is directly connected, FastEthernet0/0
C 192.224.11.32/28 is directly connected, FastEthernet0/1
L 192.224.11.46/32 is directly connected, FastEthernet0/1

Router#
Router#
    
```

(c) Tabla de ruteo para Router 3

```

Router4
Router>enable
Router#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

1.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C 1.2.4.0/30 is directly connected, Serial0/3/0
L 1.2.4.2/32 is directly connected, Serial0/3/0
C 1.3.6.0/30 is directly connected, Serial0/3/1
L 1.3.6.2/32 is directly connected, Serial0/3/1
10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C 10.20.11.0/24 is directly connected, FastEthernet0/0
L 10.20.11.254/32 is directly connected, FastEthernet0/0
C 10.20.12.0/27 is directly connected, FastEthernet0/1
L 10.20.12.30/32 is directly connected, FastEthernet0/1
S 192.168.8.0/23 [1/0] via 1.2.4.1
S 192.168.10.0/25 is subnetted, 1 subnets
S 192.168.10.0/25 [1/0] via 1.2.4.1
192.172.11.0/24 is variably subnetted, 2 subnets, 2 masks
S 192.172.11.0/26 [1/0] via 1.2.4.1
S 192.172.11.64/27 [1/0] via 1.2.4.1
192.224.11.0/24 is variably subnetted, 2 subnets, 2 masks
S 192.224.11.0/27 [1/0] via 1.3.6.1
S 192.224.11.32/28 [1/0] via 1.3.6.1

Router#
Router#
    
```

(d) Tabla de ruteo para Router 4