**7.3.2.6 Pinging and Tracing to Test the Path**

PART 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PC1 | NIC | 10.10.1.98 | 255.255.255.224 | 10.10.1.97 |
| PC2 | NIC | 2001:DB8:1:1::2 | | FE80::1 |
| PC3 | NIC | 10.10.1.18 | 255.255.255.240 | 10.10.1.17 |
| PC4 | NIC | 2001:DB8:1:4::2 | | FE80::2 |

2a.10.10.1.97

2c. 10.10.1.17

2f. 10.10.1.6

2g. 10.10.1.4/30 10.10.1.6/32

2h. 10.10.1.10

10.10.1.8/30 10.10.10/32

3a. Serial 0/0/0 interface of R2 is configured with wrong IP address

3b. Configure the correct IP address on R2’s Serial 0/0/0 interface is 10.10.1.5

5a. Yes

PART 2

2a. 2001:DB8:1:3::2

2c. no Ipv6 address was reached

2f. YES

3a. PC4 is using wrong dafault gateway configuration

3b. Configure PC4 with the correct dafault gateway address: FE80::3

5b. Yes

**8.1.4.7 Subnetting Scenario**

| **Device** | **Interface** | **IP Address** | **Subnet Mask** | **Default Gateway** |
| --- | --- | --- | --- | --- |
| R1 | G0/0 | 192.168.100.1 | 255.255.255.224 | N/A |
| G0/1 | 192.168.100.33 | 255.255.255.224 | N/A |
| S0/0/0 | 192.168.100.129 | 255.255.255.224 | N/A |
| R2 | G0/0 | 192.168.100.65 | 255.255.255.224 | N/A |
| G0/1 | 192.168.100.97 | 255.255.255.224 | N/A |
| S0/0/0 | 192.168.100.158 | 255.255.255.224 | N/A |
| S1 | VLAN 1 | 192.168.100.2 | 255.255.255.224 | 192.168.100.1 |
| S2 | VLAN 1 | 192.168.100.34 | 255.255.255.224 | 192.168.100.33 |
| S3 | VLAN 1 | 192.168.100.66 | 255.255.255.224 | 192.168.100.65 |
| S4 | VLAN 1 | 192.168.100.98 | 255.255.255.224 | 192.168.100.97 |
| PC1 | NIC | 192.168.100.30 | 255.255.255.224 | 192.168.100.1 |
| PC2 | NIC | 192.168.100.62 | 255.255.255.224 | 192.168.100.33 |
| PC3 | NIC | 192.168.100.94 | 255.255.255.224 | 192.168.100.65 |
| PC4 | NIC | 192.168.100.126 | 255.255.255.224 | 192.168.100.97 |

Part 1

1a. 5

1b. 3 bits

1c. 8 subnets

1d. 30 hosts

1e.

Net 1: 192.168.100. 0 0 1 0 0 0 0 0

Net 2: 192.168.100. 0 1 0 0 0 0 0 0

Net 3: 192.168.100. 0 1 1 0 0 0 0 0

Net 4: 192.168.100. 1 0 0 0 0 0 0 0

1f.

11111111.11111111.11111111. 1 1 1 0 0 0 0 0

255.255.255.224

1g.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subnet Number** | **Subnet Address** | **First Usable Host Address** | **Last Usable Host Address** | **Broadcast Address** |
| 0 | 192.168.100.0 | 192.168.100.1 | 192.168.100.30 | 192.168.100.31 |
| 1 | 192.168.100.32 | 192.168.100.33 | 192.168.100.62 | 192.168.100.63 |
| 2 | 192.168.100.64 | 192.168.100.65 | 192.168.100.94 | 192.168.100.95 |
| 3 | 192.168.100.96 | 192.168.100.97 | 192.168.100.126 | 192.168.100.127 |
| 4 | 192.168.100.128 | 192.168.100.129 | 192.168.100.158 | 192.168.100.159 |
| 5 | 192.168.100.160 | 192.168.100.161 | 192.168.100.190 | 192.168.100.191 |
| 6 | 192.168.100.192 | 192.168.100.193 | 192.168.100.222 | 192.168.100.223 |
| 7 | 192.168.100.224 | 192.168.100.225 | 192.168.100.254 | 192.168.100.255 |

2a. 192.168.100.0

2b. 192.168.100.32

2c. 192.168.100.64

2d. 192.168.100.96

2e. 192.168.100.128