# Laboratorio 3: Implementación de Redes TCP IPv4

**GitHub Laboratorio. PKT=**

<https://github.com/LeoR22/Universidad/tree/main/Redes_datos/Lab_2>

## Diseño de red

**Topología propuesta:**

* PC0 y PC2 conectados a Switch0
* Switch0 conectado a Router1
* Router1 conectado a Router2 y Router3
* Router2 conectado a Server0
* Red dividida en 4 subredes

## Cálculo de subredes

**Segmento base: 40.29.0.0/16**

**Subred 1: 1500 hosts**

* Requiere al menos 1502 direcciones
* Se usa /21 → 2046 hosts
* Subred: 40.29.0.0/21

**Subredes 2, 3 y 4: 2 hosts cada una**

* Requiere al menos 4 direcciones
* Se usa /29 → 6 hosts

**Asignación:**

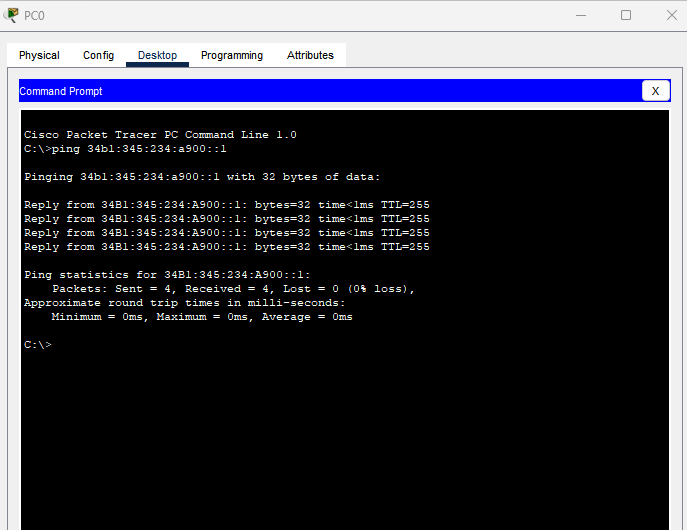
|  |  |  |  |
| --- | --- | --- | --- |
| **Subred** | **Dirección de red** | **Máscara** | **Rango de IPs útiles** |
| Subred 1 | 40.29.0.0/21 | 255.255.248.0 | 40.29.0.1 – 40.29.7.254 |
| Subred 2 | 40.29.8.0/29 | 255.255.255.248 | 40.29.8.1 – 40.29.8.6 |
| Subred 3 | 40.29.8.8/29 | 255.255.255.248 | 40.29.8.9 – 40.29.8.14 |
| |  |  | | --- | --- | | Subred 4 |  | | 40.29.8.16/29 | 255.255.255.248 | 40.29.8.17 – 40.29.8.22 |

**Asignación de direccions IP**

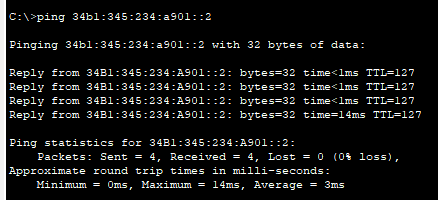
|  |  |  |  |
| --- | --- | --- | --- |
| **Dispositivo** | **IP asignada** | **Máscara** | **Gateway** |
| PC0 | 40.29.0.10 | 255.255.248.0 | 40.29.0.1 |
| PC2 | 40.29.0.20 | 255.255.248.0 | 40.29.0.1 |
| Server0 | 40.29.8.18 | 255.255.255.248 | 40.29.8.17 |
| Router1 G0/0 | 40.29.0.1 | 255.255.248.0 | — |
| Router1 S0/0/0 | 40.29.8.1 | 255.255.255.248 | — |
| Router1 S0/0/1 | 40.29.8.9 | 255.255.255.248 | — |
| Router3 S0/0/0 | 40.29.8.2 | 255.255.255.248 | — |
| Router3 S0/0/1 | 40.29.8.17 | 255.255.255.248 | — |
| Router2 S0/0/0 | 40.29.8.10 | 255.255.255.248 | — |

## Resultados

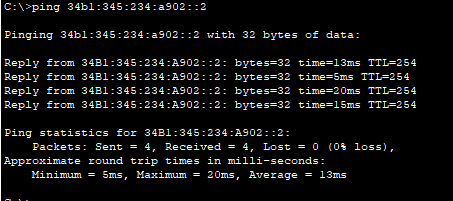
PC0 – PC1



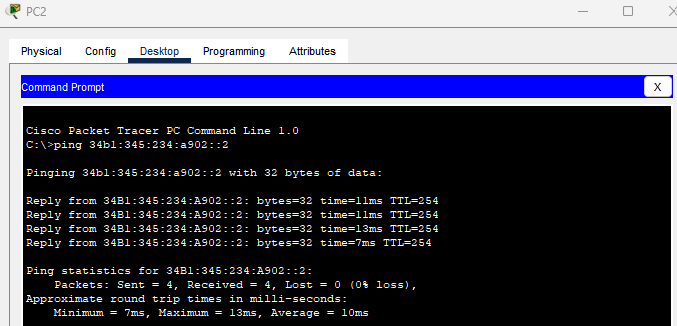
PC 0 – PC2



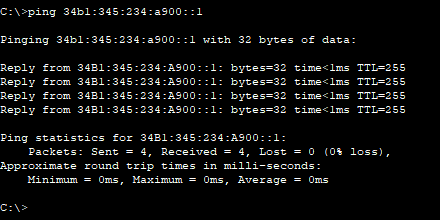
PC 0- Router 0



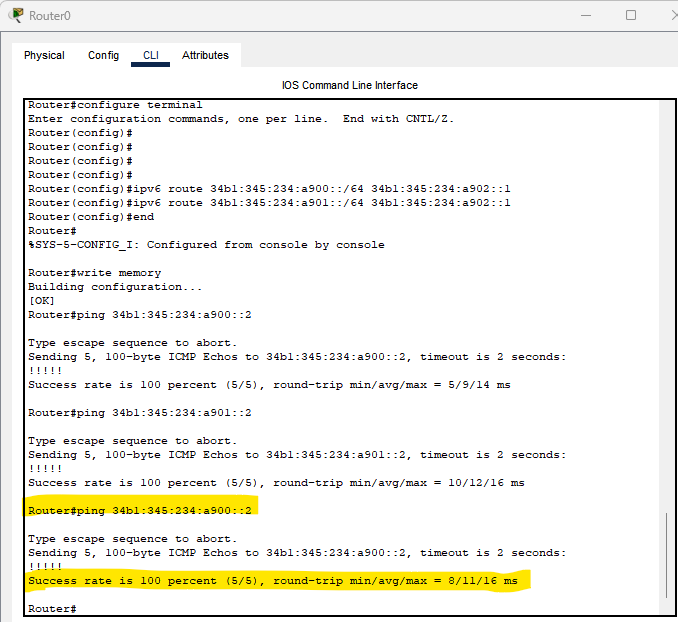
PC 2- Router 0



PC2 -Router 1



Desde Router 0 – PC 0 - LAN A



Desde Router 0 – PC2 LAN B

