Ejercicios IPv4

(Mascaras)

* Obtener la red actual, la red anterior y la red siguiente.
* Especificar la primera y última dirección de cada red.
* Representar la máscara en forma decimal.
* Cuantos nodos existen por red.

1. 10.20.30.40 / 14

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.252.0.0 | 10.15.0.0 | 10.19.255.255 |
| Red Actual | 10.20.30.40 | 255.252.0.0 | 10.20.0.0 | 10.23.255.255 |
| Red Siguiente | X | 255.252.0.0 | 10.24.0.0 | 10.27.255.255 |
| Nodos por Red: | | | 262142 |  |

1. 120.0.10.0 / 16

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.255.0.0 | 119.255.0.0 | 119.255.255.255 |
| Red Actual | 120.0.10.0 | 255.255.0.0 | 120.0.0.0 | 120.0.255.255 |
| Red Siguiente | X | 255.255.0.0 | 120.1.0.0 | 120.1.255.255 |
| Nodos por Red: | | | 65534 |  |

1. 172.16.4.0 / 18

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.255.192.0 | 172.15.192.0 | 172.15.255.255 |
| Red Actual | 172.16.4.0 | 255.255.192.0 | 172.16.0.0 | 172.16.63.255 |
| Red Siguiente | X | 255.255.192.0 | 172.16.64.0 | 172.16.127.255 |
| Nodos por Red: | | | 16382 |  |

1. 172.20.1.35 / 29

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.255.255.248 | 172.20.1.24 | 172.20.1.31 |
| Red Actual | 172.20.1.35 | 255.255.255.248 | 172.20.1.32 | 172.20.1.39 |
| Red Siguiente | X | 255.255.255.248 | 172.20.1.40 | 172.20.1.47 |
| Nodos por Red: | | | 6 |  |

1. 192.168.125.0 / 21

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 192.168.120.0 | 192.168.112.0 | 192.168.119.255 |
| Red Actual | 192.168.125.0 | 192.168.120.0 | 192.168.120.0 | 192.168.127.255 |
| Red Siguiente | X | 192.168.120.0 | 192.168.128.0 | 192.168.135.255 |
| Nodos por Red: | | | 2046 |  |

1. 169.254.200.90 / 25

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | IP | Mascara | | Red | | Broadcast |
| Red Anterior | X | 255.255.255.128 | | 169.254.119.128 | | 169.254.119.255 |
| Red Actual | 169.254.200.90 | 255.255.255.128 | | 169.254.200.0 | | 169.254.200.127 |
| Red Siguiente | X | 255.255.255.128 | | 169.254.200.128 | | 169.254.200.255 |
| Nodos por Red: | | | 126 | |  | |

1. 158.122.15.0 / 19

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.255.224.0 | 158.121.224.0 | 158.121.255.255 |
| Red Actual | 158.122.15.0 | 255.255.224.0 | 158.122.0.0 | 158.122.31.255 |
| Red Siguiente | X | 255.255.224.0 | 158.122.32.0 | 158.122.63.255 |
| Nodos por Red: | | | 8190 |  |

1. 221.80.9.40 / 28

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.255.255.240 | 221.80.9.16 | 221.80.9.31 |
| Red Actual | 221.80.9.40 | 255.255.255.240 | 221.80.9.32 | 221.80.9.47 |
| Red Siguiente | X | 255.255.255.240 | 221.80.9.48 | 221.80.9.63 |
| Nodos por Red: | | | 14 |  |

1. 90.250.3.100 / 12

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.240.0.0 | 90.224.0.0 | 90.239.255.255 |
| Red Actual | 90.250.3.100 | 255.240.0.0 | 90.240.0.0 | 90.255.255.255 |
| Red Siguiente | X | 255.240.0.0 | 91.0.0.0 | 91.15.255.255 |
| Nodos por Red: | | | 1048574 |  |

1. 200.200.1.1 / 15

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.254.0.0 | 200.118.0.0 | 200.119.255.255 |
| Red Actual | 200.200.1.1 | 255.254.0.0 | 200.200.0.0 | 200.201.255.255 |
| Red Siguiente | X | 255.254.0.0 | 200.202.0.0 | 200.203.255.255 |
| Nodos por Red: | | | 131070 |  |

Ejemplo: 10.10.10.10 / 24

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | IP | Mascara | Red | Broadcast |
| Red Anterior | X | 255.255.255.0 | 10.10.9.0 | 10.10.9.255 |
| Red Actual | 10.10.10.10 | 255.255.255.0 | 10.10.10.0 | 10.10.10.255 |
| Red Siguiente | X | 255.255.255.0 | 10.10.11.0 | 10.10.11.255 |
| Nodos por Red: | | | 254 |  |