ATIVIDADES AULA 18 – SUB-REDES

# Identificação

**Disciplina**: Administração de Redes de Computadores

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**Data**: 1º de outubro de 2025

**Atividade**: Aula 18

# exercício 1

Dada a rede 192.168.1.0/24, o objetivo é dividir essa rede em 8 sub-redes com o mesmo tamanho.

Você deve apresentar a solução seguindo os passos abaixo, para determinar a nova máscara e as sub-redes certas.

1. Bits para ativação:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |

2. Nova máscara:

3. Total de hosts por sub-rede:

4. Incremento

|  |  |  |  |
| --- | --- | --- | --- |
| **Endereço IP** | **Endereço de rede** | **Intervalo de hosts** | **Broadcast** |
| 192.168.1.0 | 192.168.1.0 | 192.168.1.1 - 192.168.1.30 | 192.168.1.31 |
| 192.168.1.32 | 192.168.1.32 | 192.168.1.33 - 192.168.1.62 | 192.168.1.63 |
| 192.168.1.64 | 192.168.1.64 | 192.168.1.65 - 192.168.1.94 | 192.168.1.95 |
| 192.168.1.96 | 192.168.1.96 | 192.168.1.97 - 192.168.1.126 | 192.168.1.127 |
| 192.168.1.128 | 192.168.1.128 | 192.168.1.129 - 192.168.1.158 | 192.168.1.159 |
| 192.168.1.160 | 192.168.1.160 | 192.168.1.161 - 192.168.1.190 | 192.168.1.191 |
| 192.168.1.192 | 192.168.1.192 | 192.168.1.193 - 192.168.1.222 | 192.168.1.223 |
| 192.168.1.224 | 192.168.1.224 | 192.168.1.225 - 192.168.1.254 | 192.168.1.255 |

# Exercício 2

| **Endereço IP** | **Requisito** |
| --- | --- |
| 192.168.1.0/24 | Dividir em 4 sub-redes |
| 172.16.0.0/16 | Dividir em 8 sub-redes |
| 192.168.10.0/24 | Dividir em 32 sub-redes |
| 10.0.0.0/8 | Dividir em 4 sub-redes |
| 172.30.0.0/16 | Dividir em 16 sub-redes |

**1. 192.168.1.0/24 - dividir em 4 sub-redes**

Bits para ativação:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Nova máscara:

255.255.255.192/26

Total de hosts por sub-rede:

Incremento:

|  |  |  |  |
| --- | --- | --- | --- |
| Sub-rede | Endereço de rede | Hosts válidos | Broadcast |
| 1 | 192.168.1.0 | 192.168.1.1 – 192.168.1.62 | 192.168.1.63 |
| 2 | 192.168.1.64 | 192.168.1.65 – 192.168.1.126 | 192.168.1.127 |
| 3 | 192.168.1.128 | 192.168.1.129 – 192.168.1.190 | 192.168.1.191 |
| 4 | 192.168.1.192 | 192.168.1.193 – 192.168.1.254 | 192.168.1.255 |

**2. 172.16.0.0/16 dividido em 8 sub-redes**

Bits para ativação:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |

Nova máscara:

Total de hosts por sub-rede:

Incremento:

|  |  |  |  |
| --- | --- | --- | --- |
| Sub-rede | Endereço de Rede | Hosts válidos | Broadcast |
| 1 | 172.16.0.0 | 172.16.0.1 – 172.16.31.254 | 172.16.31.255 |
| 2 | 172.16.32.0 | 172.16.32.1 – 172.16.63.254 | 172.16.63.255 |
| 3 | 172.16.64.0 | 172.16.64.1 – 172.16.95.254 | 172.16.95.255 |
| 4 | 172.16.96.0 | 172.16.96.1 – 172.16.127.254 | 172.16.127.255 |
| 5 | 172.16.128.0 | 172.16.128.1 – 172.16.159.254 | 172.16.159.255 |
| 6 | 172.16.160.0 | 172.16.160.1 – 172.16.191.254 | 172.16.191.255 |
| 7 | 172.16.192.0 | 172.16.192.1 – 172.16.223.254 | 172.16.223.255 |
| 8 | 172.16.224.0 | 172.16.224.1 – 172.16.255.254 | 172.16.255.255 |

**10.0.0.0/8 dividido em 4 sub-redes**

Bits para ativação:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

Nova máscara:

Total de hosts por sub-rede:

Incremento:

|  |  |  |  |
| --- | --- | --- | --- |
| **Sub-rede** | **Endereço de Rede** | **Hosts válidos** | **Broadcast** |
| 1 | 10.0.0.0 | 10.0.0.1 – 10.63.255.254 | 10.63.255.255 |
| 2 | 10.64.0.0 | 10.64.0.1 – 10.127.255.254 | 10.127.255.255 |
| 3 | 10.128.0.0 | 10.128.0.1 – 10.191.255.254 | 10.191.255.255 |
| 4 | 10.192.0.0 | 10.192.0.1 – 10.255.255.254 | 10.255.255.255 |

**172.30.0.0/16 dividido em 16 sub-redes**

Bits para ativação:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |

Nova máscara:

Total de hosts por sub-rede:

Incremento:

|  |  |  |  |
| --- | --- | --- | --- |
| **Sub-rede** | **Endereço de Rede** | **Hosts válidos** | **Broadcast** |
| 1 | 172.30.0.0 | 172.30.0.1 – 172.30.15.254 | 172.30.15.255 |
| 2 | 172.30.16.0 | 172.30.16.1 – 172.30.31.254 | 172.30.31.255 |
| 3 | 172.30.32.0 | 172.30.32.1 – 172.30.47.254 | 172.30.47.255 |
| 4 | 172.30.48.0 | 172.30.48.1 – 172.30.63.254 | 172.30.63.255 |
| 5 | 172.30.64.0 | 172.30.64.1 – 172.30.79.254 | 172.30.79.255 |
| 6 | 172.30.80.0 | 172.30.80.1 – 172.30.95.254 | 172.30.95.255 |
| 7 | 172.30.96.0 | 172.30.96.1 – 172.30.111.254 | 172.30.111.255 |
| 8 | 172.30.112.0 | 172.30.112.1 – 172.30.127.254 | 172.30.127.255 |
| 9 | 172.30.128.0 | 172.30.128.1 – 172.30.143.254 | 172.30.143.255 |
| 10 | 172.30.144.0 | 172.30.144.1 – 172.30.159.254 | 172.30.159.255 |
| 11 | 172.30.160.0 | 172.30.160.1 – 172.30.175.254 | 172.30.175.255 |
| 12 | 172.30.176.0 | 172.30.176.1 – 172.30.191.254 | 172.30.191.255 |
| 13 | 172.30.192.0 | 172.30.192.1 – 172.30.207.254 | 172.30.207.255 |
| 14 | 172.30.208.0 | 172.30.208.1 – 172.30.223.254 | 172.30.223.255 |
| 15 | 172.30.224.0 | 172.30.224.1 – 172.30.239.254 | 172.30.239.255 |
| 16 | 172.30.240.0 | 172.30.240.1 – 172.30.255.254 | 172.30.255.255 |

**192.168.10.0/24 dividido em 32 sub-redes**

Bits para ativação:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
| **128** | **64** | **32** | **16** | **8** | **4** | **2** | **1** |
| 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |

Nova máscara:

Total de hosts por sub-rede:

Incremento:

|  |  |  |  |
| --- | --- | --- | --- |
| **Sub-rede** | **Endereço de Rede** | **Hosts válidos** | **Broadcast** |
| 1 | 192.168.10.0 | 192.168.10.1 – 192.168.10.6 | 192.168.10.7 |
| 2 | 192.168.10.8 | 192.168.10.9 – 192.168.10.14 | 192.168.10.15 |
| 3 | 192.168.10.16 | 192.168.10.17 – 192.168.10.22 | 192.168.10.23 |
| 4 | 192.168.10.24 | 192.168.10.25 – 192.168.10.30 | 192.168.10.31 |
| 5 | 192.168.10.32 | 192.168.10.33 – 192.168.10.38 | 192.168.10.39 |
| 6 | 192.168.10.40 | 192.168.10.41 – 192.168.10.46 | 192.168.10.47 |
| 7 | 192.168.10.48 | 192.168.10.49 – 192.168.10.54 | 192.168.10.55 |
| 8 | 192.168.10.56 | 192.168.10.57 – 192.168.10.62 | 192.168.10.63 |
| 9 | 192.168.10.64 | 192.168.10.65 – 192.168.10.70 | 192.168.10.71 |
| 10 | 192.168.10.72 | 192.168.10.73 – 192.168.10.78 | 192.168.10.79 |
| 11 | 192.168.10.80 | 192.168.10.81 – 192.168.10.86 | 192.168.10.87 |
| 12 | 192.168.10.88 | 192.168.10.89 – 192.168.10.94 | 192.168.10.95 |
| 13 | 192.168.10.96 | 192.168.10.97 – 192.168.10.102 | 192.168.10.103 |
| 14 | 192.168.10.104 | 192.168.10.105 – 192.168.10.110 | 192.168.10.111 |
| 15 | 192.168.10.112 | 192.168.10.113 – 192.168.10.118 | 192.168.10.119 |
| 16 | 192.168.10.120 | 192.168.10.121 – 192.168.10.126 | 192.168.10.127 |
| 17 | 192.168.10.128 | 192.168.10.129 – 192.168.10.134 | 192.168.10.135 |
| 18 | 192.168.10.136 | 192.168.10.137 – 192.168.10.142 | 192.168.10.143 |
| 19 | 192.168.10.144 | 192.168.10.145 – 192.168.10.150 | 192.168.10.151 |
| 20 | 192.168.10.152 | 192.168.10.153 – 192.168.10.158 | 192.168.10.159 |
| 21 | 192.168.10.160 | 192.168.10.161 – 192.168.10.166 | 192.168.10.167 |
| 22 | 192.168.10.168 | 192.168.10.169 – 192.168.10.174 | 192.168.10.175 |
| 23 | 192.168.10.176 | 192.168.10.177 – 192.168.10.182 | 192.168.10.183 |
| 24 | 192.168.10.184 | 192.168.10.185 – 192.168.10.190 | 192.168.10.191 |
| 25 | 192.168.10.192 | 192.168.10.193 – 192.168.10.198 | 192.168.10.199 |
| 26 | 192.168.10.200 | 192.168.10.201 – 192.168.10.206 | 192.168.10.207 |
| 27 | 192.168.10.208 | 192.168.10.209 – 192.168.10.214 | 192.168.10.215 |
| 28 | 192.168.10.216 | 192.168.10.217 – 192.168.10.222 | 192.168.10.223 |
| 29 | 192.168.10.224 | 192.168.10.225 – 192.168.10.230 | 192.168.10.231 |
| 30 | 192.168.10.232 | 192.168.10.233 – 192.168.10.238 | 192.168.10.239 |
| 31 | 192.168.10.240 | 192.168.10.241 – 192.168.10.246 | 192.168.10.247 |
| 32 | 192.168.10.248 | 192.168.10.249 – 192.168.10.254 | 192.168.10.255 |