**MODULE 2 - ACTIVITY NO. 1**

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| **Name:** | **Ishmael L. Ramirez** | **Date:** | **August 24, 2022** |
| **Subject/Section:** | **Networking 2 / IT2E** | **Professor:** | **Larry Rutaquio** |

1.

Given: 192.168.5.0/24

80 networks

128 64 32 16 8 4 2 1

0 1 0 1 0 0 0 0 = 7 bits

128 64 32 16 8 4 2 | 1

11111111.11111111.11111111. 0 0 0 0 0 0 0 | 0

Bits: 7 Bits

Increment: 2

Subnet Mask = /31 or 255.255.255.254

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| --- | --- | --- | --- | --- |
| **Network Address** | **Host Range** | | **Broadcast Address** | **Subnet Mask** |
|  | **First Usable Host** | **Last Usable Host** |  |  |
| 192.168.5.0 | 192.168.5.1 | 192.168.5.0 | 192.168.5.1 | 255.255.255.254 |
| 192.168.5.2 | 192.168.5.3 | 192.168.5.2 | 192.168.5.3 | 255.255.255.254 |
| 192.168.5.4 | 192.168.5.5 | 192.168.5.4 | 192.168.5.5 | 255.255.255.254 |
| 192.168.5.6 | 192.168.5.7 | 192.168.5.6 | 192.168.5.7 | 255.255.255.254 |
| 192.168.5.8 | 192.168.5.9 | 192.168.5.8 | 192.168.5.9 | 255.255.255.254 |
| 192.168.5.10 | 192.168.5.11 | 192.168.5.10 | 192.168.5.11 | 255.255.255.254 |
| 192.168.5.12 | 192.168.5.13 | 192.168.5.12 | 192.168.5.13 | 255.255.255.254 |
| 192.168.5.14 | 192.168.5.15 | 192.168.5.14 | 192.168.5.15 | 255.255.255.254 |

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| --- | --- | --- | --- | --- |
| 192.168.5.250 | 192.168.5.251 | 192.168.5.250 | 192.168.5.251 | 255.255.255.254 |
| 192.168.5.252 | 192.168.5.253 | 192.168.5.252 | 192.168.5.253 | 255.255.255.254 |
| 192.168.5.254 | 192.168.5.255 | 192.168.5.254 | 192.168.5.255 | 255.255.255.254 |

2.

Given: 199.9.10.0/24

12 networks

128 64 32 16 8 4 2 1

0 0 0 0 1 1 0 0 = 4 bits

128 64 32 16 | 8 4 2 1

11111111.11111111.11111111. 0 0 0 0 | 0 0 0 0

Bits: 4 Bits

Increment: 16

Subnet Mask: /28 or 255.255.255.240

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| **Network Address** | **Host Range** | | **Broadcast Address** | **Subnet Mask** |
|  | **First Usable Host** | **Last Usable Host** |  |  |
| 199.9.10.0 | 199.9.10.1 | 199.9.10.14 | 199.9.10.15 | 255.255.255.240 |
| 199.9.10.16 | 199.9.10.17 | 199.9.10.30 | 199.9.10.31 | 255.255.255.240 |
| 199.9.10.32 | 199.9.10.33 | 199.9.10.46 | 199.9.10.47 | 255.255.255.240 |
| 199.9.10.48 | 199.9.10.49 | 199.9.10.62 | 199.9.10.63 | 255.255.255.240 |
| 199.9.10.64 | 199.9.10.65 | 199.9.10.78 | 199.9.10.79 | 255.255.255.240 |
| 199.9.10.80 | 199.9.10.81 | 199.9.10.94 | 199.9.10.95 | 255.255.255.240 |
| 199.9.10.96 | 199.9.10.97 | 199.9.10.110 | 199.9.10.111 | 255.255.255.240 |
| 199.9.10.112 | 199.9.10.113 | 199.9.10.126 | 199.9.10.127 | 255.255.255.240 |

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| --- | --- | --- | --- | --- |
| 199.9.10.208 | 199.9.10.209 | 199.9.10.222 | 199.9.10.223 | 255.255.255.240 |
| 199.9.10.224 | 199.9.10.225 | 199.9.10.238 | 199.9.10.239 | 255.255.255.240 |
| 199.9.10.240 | 199.9.10.241 | 199.9.10.254 | 199.9.10.255 | 255.255.255.240 |

3.

Given: 172.60.0.0/24

900 networks

512 256 128 64 32 16 8 4 2 1

1 1 1 0 0 0 0 1 0 0 = 10 bits

128 64 32 16 8 4 2 1 128

11111111.11111111. 0 0 0 0 0 0 0 0 0

64 | 32 16 8 4 2 1

0 | 0 0 0 0 0 0

Bits: 10 Bits

Increment: 64

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| --- | --- | --- | --- | --- |
| **Network Address** | **Host Range** | | **Broadcast Address** | **Subnet Mask** |
|  | **First Usable Host** | **Last Usable Host** |  |  |
| 172.60.0.0 | 172.60.0.1 | 172.60.0.62 | 172.60.0.63 | 255.255.255.192 |
| 172.60.0.64 | 172.60.0.65 | 172.60.0.126 | 172.60.0.127 | 255.255.255.192 |
| 172.60.0.128 | 172.60.0.129 | 172.60.0.190 | 172.60.0.191 | 255.255.255.192 |
| 172.60.0.192 | 172.60.0.193 | 172.60.0.254 | 172.60.0.255 | 255.255.255.192 |
| 172.60.1.0 | 172.60.1.1 | 172.60.1.62 | 172.60.1.63 | 255.255.255.192 |
| 172.60.1.64 | 172.60.1.65 | 172.60.1.126 | 172.60.1.127 | 255.255.255.192 |
| 172.60.1.128 | 172.60.1.129 | 172.60.1.190 | 172.60.1.191 | 255.255.255.192 |
| 172.60.1.192 | 172.60.1.193 | 172.60.0.254 | 172.60.0.255 | 255.255.255.192 |

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| --- | --- | --- | --- | --- |
| 172.60.255.64 | 172.60.255.65 | 172.60.255.126 | 172.60.255.127 | 255.255.255.192 |
| 172.60.255.128 | 172.60.255.129 | 172.60.255.190 | 172.60.255.191 | 255.255.255.192 |
| 172.60.255.192 | 172.60.255.193 | 172.60.255.254 | 172.60.255.255 | 255.255.255.192 |

4.

Given: 12.0.0.0/8

50 networks

128 64 32 16 8 4 2 1

0 0 1 1 0 0 0 0 = 6 bits

128 64 32 16 8 4 | 2 1

11111111. 0 0 0 0 0 0 | 0 0

Bits: 6 Bits

Increment: 4

Subnet Mask: /14 or 255.252.0.0

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| **Network Address** | **Host Range** | | **Broadcast Address** | **Subnet Mask** |
|  | **First Usable Host** | **Last Usable Host** |  |  |
| 12.0.0.0 | 12.0.0.1 | 12.3.255.254 | 12.3.255.255 | 255.252.0.0 |
| 12.4.0.0 | 12.4.0.1 | 12.7.255.254 | 12.7. .255.255 | 255.252.0.0 |
| 12.8.0.0 | 12.8.0.1 | 12.11.255.254 | 12.11.255.255 | 255.252.0.0 |
| 12.12.0.0 | 12.12.0.1 | 12.15.255.254 | 12.15.255.255 | 255.252.0.0 |
| 12.16.0.0 | 12.16.0.1 | 12.19.255.254 | 12.19.255.255 | 255.252.0.0 |
| 12.20.0.0 | 12.20.0.1 | 12.23.255.254 | 12.23.255.255 | 255.252.0.0 |
| 12.24.0.0 | 12.24.0.1 | 12.27.255.254 | 12.27.255.255 | 255.252.0.0 |
| 12.28.0.0 | 12.28.0.1 | 12.31.255.254 | 12.31.255.255 | 255.252.0.0 |

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| --- | --- | --- | --- | --- |
| 12.244.0.0 | 12.244.0.1 | 12.247.255.254 | 12.247.255.255 | 255.252.0.0 |
| 12.248.0.0 | 12.248.0.1 | 12.251.255.254 | 12.251.255.255 | 255.252.0.0 |
| 12.252.0.0 | 12.252.0.1 | 12.255.255.254 | 12.255.255.255 | 255.252.0.0 |