# 32524\_2023A\_Case Study

GROUP B

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# **Table A -** IPv4 Subnetting Table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Subnet Number\*** | **Subnet Address** | **Subnet Mask** | **Hosts Required** | **Maximum**  **Hosts in**  **Subnet** | **In Use (Yes or No)** | **Network Name** |
| **0** | **209.165.200.208/29** | 255.255.255.248 |  |  |  |  |
| **1** | 209.165.200.208/30 | 255.255.255.252 | 2 | 2 | Yes | Primary |
| **1** | 209.165.200.212/30 | 255.255.255.252 | 2 | 2 | Yes | Secondary |
| **0** | 10.0.24.0/21 | 255.255.248.0 |  | 2046 | No |  |
| **1** | 10.0.24.0/23 | 255.255.254.0 | 503 | 510 | Yes | Students |
| **1** | 10.0.26.0/23 | 255.255.254.0 |  | 510 | No |  |
| **1** | 10.0.28.0/23 | 255.255.254.0 |  | 510 | No |  |
| **1** | 10.0.30.0/23 | 255.255.254.0 |  | 510 | No |  |
| **2** | 10.0.26.0/24 | 255.255.255.0 | 203 | 254 | Yes | Visitors |
| **2** | 10.0.27.0/24 | 255.255.255.0 |  |  | No |  |
| **3** | 10.0.27.0/25 | 255.255.255.128 | 83 | 126 | Yes | Staff |
| **3** | 10.0.27.128/25 | 255.255.255.128 |  |  | No |  |
| **4** | 10.0.27.128/28 | 255.255.255.240 | 9 | 14 | Yes | Management |
| **4** | 10.0.27.144/28 | 255.255.255.240 |  | 14 | No |  |
| **4** | 10.0.27.160/28 | 255.255.255.240 |  | 14 | No |  |
| **4** | 10.0.27.176/28 | 255.255.255.240 |  | 14 | No |  |
| **4** | 10.0.27.192/28 | 255.255.255.240 |  | 14 | No |  |
| **4** | 10.0.27.208/28 | 255.255.255.240 |  | 14 | No |  |
| **4** | 10.0.27.224/28 | 255.255.255.240 |  | 14 | No |  |
| **4** | 10.0.27.240/28 | 255.255.255.240 |  | 14 | No |  |
| **5** | 10.0.27.144/30 | 255.255.255.252 | 2 | 2 | Yes | Server |
| **5** | 10.0.27.148/30 | 255.255.255.252 | 2 | 2 | Yes | North-East |
| **5** | 10.0.27.152/30 | 255.255.255.252 | 2 | 2 | Yes | South-East |
| **5** | 10.0.27.156/30 | 255.255.255.252 | 2 | 2 | No |  |

\*Subnet Number” is the index (starting from 0) of the subnet as the result of subnetting.

# **Table B** Device Interface IP Addressing Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Device** | **Interface** | **IPv4 address** | **Subnet Mask** |
| **ISP** | Fa0/0 (West) | 209.165.200.209/30 | 255.255.255.252 |
| Se0/0/0 (East) | 209.165.200.213/30 | 255.255.255.252 |
| loopback0 | 1.1.1.1/32 | 255.255.255.255 |
| **West** | Fa0/0 (ISP)  Fa0/1.10 (Students)   Fa0/1.20 (Visitors)   Fa0/1.30 (Staff)   Fa0/1.99 (Management) | 209.165.200.210/30  10.0.24.1/23  10.0.26.1/24  10.0.27.1/25  10.0.27.129/28 | 255.255.255.252  255.255.254.0  255.255.255.0  255.255.255.128  255.255.255.240 |
| **North** | Fa0/0 (North-East)  Fa0/1.10 (Students)   Fa0/1.20 (Visitors)   Fa0/1.30 (Staff)   Fa0/1.99 (Management) | 10.0.27.149/30   10.0.24.2/23   10.0.26.2/24   10.0.27.2/25   10.0.27.130/28 | 255.255.255.252   255.255.254.0   255.255.255.0   255.255.255.128   255.255.255.240 |
| **South** | Se0/0/1 (South-East)  Fa0/1.10 (Students)   Fa0/1.20 (Visitors)   Fa0/1.30 (Staff)  Fa0/1.99 (Management) | 10.0.27.153/30   10.0.24.3/23   10.0.26.3/24   10.0.27.3/25   10.0.27.131/28 | 255.255.255.252   255.255.254.0   255.255.255.0   255.255.255.128   255.255.255.240 |
| **East** | Se0/0/0 (ISP)  Fa0/0 (North-East)  Fa1/0 (Server)  Se0/0/1 (South-East) | 209.165.200.214/30  10.0.27.150/30  10.0.27.145/30  10.0.27.154/30 | 255.255.255.252  255.255.255.252  255.255.255.252  255.255.r255.252 |
| **Thomas** | Vlan99 | 10.0.27.132/28 | 255.255.255.240 |
| **Harry** | Vlan99 | 10.0.27.133/28 | 255.255.255.240 |
| **Jones** | Vlan99 | 10.0.27.134/28 | 255.255.255.240 |

# **Table C** Host Addressing Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Host** | **IPv4 Address** | **Subnet Mask** | **Gateway** |
| **PC1 Network Admin** | 10.0.27.135/28 | 255.255.255.240 | 10.0.27.129 |
| **PC2**  **Staff** | 10.0.27.4/25 | 255.255.255.128 | 10.0.27.1 |
| **PC3**  **Student** | 10.0.24.4/23 | 255.255.254.0 | 10.0.24.1 |
| **PC4**  **Server** | 10.0.27.146/30 | 255.255.255.252 | 10.0.27.145 |