**CPNT300 Project: Designing a Network**

**Group 6 Subnetting table**

**Subnetting and summarizing table**

**10.28.0.0/16**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Site name | | Subnet name | | host | | Subnet address | Subnet mask | | 1st usable address | | last usable address | | Broadcast address | | Summary address | | |
| * Site 1 | | Lan 1 | | 2083 | | 10.28.0.0/20 | 255.255.240.0 | | 10.28.0.1 | | 10.28.15.254 | | 10.28.15.255 | | |  | | --- | |  |  |  | | --- | | 10.28.0.0/19 | | | |
| Lan 2 | | 411 | | 10.28.16.0/23 | 255.255.254.0 | | 10.28.16.1 | | 10.28.17.254 | | 10.28.17.255 | |
| Lan 3 | | 163 | | 10.28.19.0/24 | 255.255.255.0 | | 10.28.19.1 | | 10.28.19.254 | | 10.28.19.255 | |
| Lan 4 | | 226 | | 10.28.18.0/24 | 255.255.255.0 | | 10.28.18.1 | | 10.28.18.254 | | 10.28.18.255 | |
| Site 2 | | Lan 1 | | 363 | | 10.28.32.0/23 | 255.255.254.0 | | 10.28.32.1 | | 10.28.33.254 | | 10.28.33.255 | | 10.28.32.0/21 | | |
| Lan 2 | | 276 | | 10.28.34.0/23 | 255.255.254.0 | | 10.28.34.1 | | 10.28.35.254 | | 10.28.35.255 | |
| Lan 3 | | 15 | | 10.28.36.64/27 | 255.255.255.224 | | 10.28.36.65 | | 10.28.36.94 | | 10.28.36.95 | |
| Lan 4 | | 57 | | 10.28.36.0/26 | 255.255.255.192 | | 10.28.36.1 | | 10.28.36.62 | | 10.28.36.63 | |
| Site 3 | | Lan 1 | | 115 | | 10.28.44.0/25 | 255.255.255.128 | | 10.28.44.1 | | 10.28.44.126 | | 10.28.44.127 | | 10.28.44.0/25 | | |
| Deta Center | | Servers | | 15 | | 10.28.42.0/27 | 255.255.255.224 | | 10.28.42.1 | | 10.28.42.30 | | 10.28.42.31 | | * 10.28.40.0/22 | | |
| WLAN 1 | | Employees | | 150 | | 10.28.40.0/24 | 255.255.255.0 | | 10.28.40.1 | | 10.28.40.254 | | 10.28.40.255 | |  | | |
| WLAN 2 | | Guests’ | | 150 | | 10.28.41.0/24 | 255.255.255.0 | | 10.28.41.1 | | 10.28.41.254 | | 10.28.41.255 | |
| Inter-Connections | Link 1 | | 2 | | 10.28.44.128/30 | | | 255.255.255.252 | | 10.28.44.129 | | 10.28.44.130 | | 10.28.44.131 | |  |
|  | Link 2 | | 2 | | 10.28.44.132/30 | | | 255.255.255.252 | | 10.28.44.133 | | 10.28.44.134 | | 10.28.44.135 | |  |
|  | Link 3 | | 2 | | 10.28.44.136/30 | | | 255.255.255.252 | | 10.28.44.137 | | 10.28.44.138 | | 10.28.44.139 | |  |
|  | Link 4 | | 2 | | 10.28.44.140/30 | | | 255.255.255.252 | | 10.28.44.141 | | 10.28.44.142 | | 10.28.44.143 | |  |
|  | Link 5 | | 2 | | 10.28.44.144/30 | | | 255.255.255.252 | | 10.28.44.145 | | 10.28.44.146 | | 10.28.44.147 | |  |
|  | Link 6 | | 2 | | 10.28.44.148/30 | | | 255.255.255.252 | | 10.28.44.149 | | 10.28.44.150 | | 10.28.44.151 | |  |
|  | Link 7 | | 2 | | 10.28.44.152/30 | | | 255.255.255.252 | | 10.28.44.153 | | 10.28.44.154 | | 10.28.44.155 | |  |
|  | Link 8 | | 2 | | 10.28.44.156/30 | | | 255.255.255.252 | | 10.28.44.157 | | 10.28.44.158 | | 10.28.44.159 | |  |
|  | Link 9 | | 2 | | 10.28.44.160/30 | | | 255.255.255.252 | | 10.28.44.161 | | 10.28.44.162 | | 10.28.44.163 | |  |
|  | Link 10 | | 2 | | 10.28.44.172/30 | | | 255.255.255.252 | | 10.28.44.173 | | 10.28.44.174 | | 10.28.44.175 | |  |
|  | Link 11 | | 2 | | 10.28.44.176/30 | | | 255.255.255.252 | | 10.28.44.177 | | 10.28.44.178 | | 10.28.44.179 | |  |
|  | Link 12 | | 2 | | 10.28.44.188/30 | | | 255.255.255.252 | | 10.28.44.189 | | 10.28.44.190 | | 10.28.44.191 | |  |
|  | Link 13 | | 2 | | 10.28.44.196/30 | | | 255.255.255.252 | | 10.28.44.197 | | 10.28.44.198 | | 10.28.44.199 | |  |

**Addressing Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device Name | Interface | IP Address | Subnet Mask | Gateway |
| MGR-3560-01 | F0/1 | 10.28.44.129/30 | 255.255.255.252 | N/A |
| F0/2 | 10.28.44.133/30 | 255.255.255.252 |
| F0/3 | 10.28.44.141/30 | 255.255.255.252 |
| F0/4 | 10.28.44.149/30 | 255.255.255.252 |
| F0/5 | 10.28.44.157/30 | 255.255.255.252 |
| F0/6 | 10.28.44.161/30 | 255.255.255.252 |
| F0/7 | 10.28.44.177/30 | 255.255.255.252 |
| F0/8 | 10.28.44.181/30 | 255.255.255.252 |
| F0/9 | 10.28.44.189/30 | 255.255.255.252 |
| F0/10 | 10.28.44.201/30 | 255.255.255.252 |
| MGR-3560-02 | F0/1 | 10.28.44.130/30 | 255.255.255.252 | N/A |
|  | F0/2 | 10.28.44.137/30 | 255.255.255.252 |
| F0/3 | 10.28.44.145/30 | 255.255.255.252 |
| F0/4 | 10.28.44.153/30 | 255.255.255.252 |
| F0/5 | 10.28.44.165/30 | 255.255.255.252 |
| F0/6 | 10.28.44.169/30 | 255.255.255.252 |
| F0/7 | 10.28.44.173/30 | 255.255.255.252 |
| F0/8 | 10.28.44.185/30 | 255.255.255.252 |
| F0/9 | 10.28.44.193/30 | 255.255.255.252 |
| F0/10 | 10.28.44.197/30 | 255.255.255.252 |
| MGR-2811-01 | F0/0 | 10.28.44.134/30 | 255.255.255.252 | N/A |
| F0/1 | 10.28.44.138/30 | 255.255.255.252 |
| G0/0/0 | 200.200.200.1/30 | 255.255.255.252 |
| MGRA-3560-01 | F0/3 | 10.28.44.142/30 | 255.255.255.252 | N/A |
| F0/4 | 10.28.44.146/30 | 255.255.255.252 |
| VLAN 10 VIP | 10.28.15.252/20  10.28.15.254/20 | 255.255.240.0 |
| VLAN 20  VIP | 10.28.17.252/23  10.28.17.254/23 | 255.255.252.0 |
| VLAN 30  VIP | 10.28.19.252/24  10.28.19.254/24 | 255.255.255.0 |
| VLAN 40  VIP | 10.28.18.252/24  10.28.18.254/24 | 255.255.255.0 |
| MGRA-3560-02 | F0/3 | 10.28.44.150/30 | 255.255.255.252 | N/A |
| F0/4 | 10.28.44.154/30 | 255.255.255.252 |
| VLAN 10  VIP | 10.28.15.253/20  10.28.15.254/20 | 255.255.240.0 |
| VLAN 20  VIP | 10.28.17.253/23  10.28.17.254/23 | 255.255.252.0 |
| VLAN 30  VIP | 10.28.19.253/24  10.28.19.254/24 | 255.255.255.0 |
| VLAN 40  VIP | 10.28.18.253/24  10.28.18.254/24 | 255.255.255.0 |
|  |  |  |  |
| MGRA-2960-01 | VLAN 10 | 10.28.15.251/20 | 255.255.240.0 | 10.28.15.254 |
| MGRA-2960-02 | VLAN 20 | 10.28.17.251/23 | 255.255.252.0 | 10.28.17.254 |
| MGRA-2960-03 | VLAN 30 | 10.28.19.251/24 | 255.255.255.0 | 10.28.19.254 |
| MGRA-2960-04 | VLAN 40 | 10.28.18.251/24 | 255.255.255.0 | 10.28.18.254 |
| MGRB-3560-01 | F0/3 | 10.28.44.162/30 | 255.255.255.252 | N/A |
| F0/4 | 10.28.44.170/30 | 255.255.255.252 |
| VLAN 50 | 10.28.33.254/23 | 255.255.254.0 |
| VLAN 60 | 10.28.35.254/23 | 255.255.254.0 |
| VLAN 70 | 10.28.36.94/27 | 255.255.255.224 |
| VLAN 80 | 10.28.36.62/26 | 255.255.255.192 |
| MGRB-2960-01 | VLAN 50 | 10.28.33.251/23 | 255.255.254.0 | 10.28.33.254 |
| MGRB-2960-02 | VLAN 60 | 10.28.35.251/23 | 255.255.254.0 | 10.28.35.254 |
| MGRB-2960-03 | VLAN 70 | 10.28.36.91/27 | 255.255.255.224 | 10.28.36.94 |
| MGRB-2960-04 | VLAN 80 | 10.28.36.60/26 | 255.255.255.192 | 10.28.36.62 |
| MGRC-3560-01 | F0/3 | 10.28.44.178/30 | 255.255.255.252 |  |
| F0/4 | 10.28.44.174/30 | 255.255.255.252 |  |
| VLAN 90 | 10.28.44.126/25 | 255.255.255.128 |  |
| MGRC-2960-01 | VLAN 90 | 10.28.44.123/25 | 255.255.255.128 | 10.28.44.126 |
| MGRDC-3560-01 | F0/3 | 10.28.44.190/30 | 255.255.255.252 |  |
| F0/4 | 10.28.44.198/30 | 255.255.255.252 |  |
| VLAN 100(Management-DC) | 10.28.42.29/27 | 255.255.255.224 |  |
|  | VLAN 110 (Employees-DC) | 10.28.40.254/24 | 255.255.255.0 |  |
|  | VLAN 120(Guests-DC) | 10.28.41.254/24 | 255.255.255.0 |  |
| DHCP | Fa0 | 10.28.42.1 | 255.255.255.128 | 10.28.42.30 |
| REDIUS | Fa0 | 10.28.42.2 | 255.255.255.128 | 10.28.42.30 |
| Server3 | Fa0 | 10.28.42.3 | 255.255.255.128 | 10.28.42.30 |
| Server4 | Fa0 | 10.28.42.4 | 255.255.255.128 | 10.28.42.30 |
| Server5 | Fa0 | 10.28.42.5 | 255.255.255.128 | 10.28.42.30 |
| Server6 | Fa0 | 10.28.42.6 | 255.255.255.128 | 10.28.42.30 |
| Server7 | Fa0 | 10.28.42.7 | 255.255.255.128 | 10.28.42.30 |
| Server8 | Fa0 | 10.28.42.8 | 255.255.255.128 | 10.28.42.30 |
| Server9 | Fa0 | 10.28.42.9 | 255.255.255.128 | 10.28.42.30 |
| Server10 | Fa0 | 10.28.42.10 | 255.255.255.128 | 10.28.42.30 |
| WLC | Management | 10.28.42.27 | 255.255.255.224 | 10.28.42.29 |
| EMP-AP | G0/0 | DHCP | DHCP | DHCP |
| GUEST-AP | G0/0 | DHCP | DHCP | DHCP |
| EMP-Laptop1 | Wireless | DHCP | DHCP | DHCP |
| Guest-Laptop1 | Wireless | DHCP | DHCP | DHCP |

**DHCP Table**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pool Name** | **Network Address** | **Subnet Mask** | **Default Gateway** | **DNS Server** | **Domain Name** | **Excluded address** |
| VLAN 10 | 10.28.0.0/20 | 255.255.240.0 | 10.28.15.254 | 200.200.200.10 | magar.ca | 10.28.15.251-254 |
| VLAN 20 | 10.28.16.0/23 | 255.255.254.0 | 10.28.17.254 | 200.200.200.10 | magar.ca | 10.28.17.251-254 |
| VLAN 30 | 10.28.19.0/24 | 255.255.255.0 | 10.28.19.254 | 200.200.200.10 | magar.ca | 10.28.19.251-254 |
| VLAN 40 | 10.28.18.0/24 | 255.255.255.0 | 10.28.18.254 | 200.200.200.10 | magar.ca | 10.28.18.251-254 |
| VLAN 50 | 10.28.32.0/23 | 255.255.254.0 | 10.28.33.254 | 200.200.200.10 | magar.ca | 10.28.33.251-254 |
| VLAN 60 | 10.28.34.0/23 | 255.255.254.0 | 10.28.35.254 | 200.200.200.10 | magar.ca | 10.28.35.251-254 |
| VLAN 70 | 10.28.36.64/27 | 255.255.255.224 | 10.28.36.94 | 200.200.200.10 | magar.ca | 10.28.36.91-94 |
| VLAN 80 | 10.28.36.0/26 | 255.255.255.192 | 10.28.36.62 | 200.200.200.10 | magar.ca | 10.28.36.59-62 |
| VLAN 90 | 10.28.44.0/25 | 255.255.255.128 | 10.28.44.126 | 200.200.200.10 | magar.ca | 10.28.44.123-126 |
| VLAN 100 | 10.28.42.0/27 | 255.255.255.224 | 10.28.42.30 | 200.200.200.10 | magar.ca | 10.28.42.27-10.28.42.30 |
| WLAN 1 | 10.28.40.0/24 | 255.255.255.0 | 10.28.40.254 | 200.200.200.10 | magar.ca | 10.28.40.251-254 |
| WLAN 2 | 10.28.41.0/24 | 255.255.255.0 | 10.28.41.254 | 200.200.200.10 | magar.ca | 10.28.41.251-254 |

**WLAN TABLE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **WLAN Name** | **SSID** | **Authentication** | **Username** | **Password** |
| Employee | Employee\_WLAN | WPA2-Enterprise | Emp1 | password@123 |
| Guest | Guest\_WLAN | WPA2-PSK | Guest1 | password@123 |