Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| Building1 | G0/0 |  |  | N/A |
| G0/1 |  |  | N/A |
| S0/0/0 |  |  | N/A |
| Building2 | G0/0 |  |  | N/A |
| G0/1 |  |  | N/A |
| S0/0/0 |  |  | N/A |
| ASW-1 | VLAN 1 |  |  |  |
| ASW-2 | VLAN 1 |  |  |  |
| ASW-3 | VLAN 1 |  |  |  |
| ASW-4 | VLAN 1 |  |  |  |
| Host-A | NIC |  |  |  |
| Host-B | NIC |  |  |  |
| Host-C | NIC |  |  |  |
| Host-D | NIC |  |  |  |

1. Examine the Network Requirements
   1. Determine the number of subnets needed.

How many subnets are needed in the network topology? Answer here:

* 1. Determine the subnet mask information for each subnet.
     1. ASW-1 LAN:
     2. ASW-2 LAN:
     3. ASW-3 LAN:
     4. ASW-4 LAN:
     5. WAN LAN:

1. Design the VLSM Addressing Scheme
   1. Divide the [[DisplayNet]] network based on the number of hosts per subnet.
      1. Use the first subnet to accommodate the largest LAN. **ASW-1 LAN**
      2. Use the second subnet to accommodate the second largest LAN. **ASW-2 LAN**
      3. Use the third subnet to accommodate the third largestLAN. **ASW-3 LAN**
      4. Use the fourth subnet to accommodate the fourth largestLAN. **ASW-4 LAN**
      5. Use the fifth subnet to accommodate the connection between **Building1** and **Building1**. **WAN** **LAN**
   2. Document the VLSM subnets.

Complete the **Subnet Table**,listing the subnet descriptions (e.g. [[S1Name]] LAN), number of hosts needed, then network address for the subnet, the first usable host address, and the broadcast address. Repeat until all addresses are listed.

1. Subnet Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Subnet Description | Number of Hosts Needed | Network Address/CIDR | First Usable Host Address | Last Usable Host Address | Broadcast Address |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

* 1. Document the addressing scheme.
     1. Assign the first usable IP addresses to **[[R1Name]]** for the two LAN links and the WAN link.
     2. Assign the first usable IP addresses to **[[R2Name]]** for the two LANs links. Assign the last usable IP address for the WAN link.
     3. Assign the second usable IP addresses to the switches.
     4. Assign the last usable IP addresses to the hosts.

1. Assign IP Addresses to Devices and Verify Connectivity

Most of the IP addressing is already configured on this network. Implement the following steps to complete the addressing configuration.

* 1. Configure IP addressing on [[R1Name]] LAN interfaces.
  2. Configure IP addressing on [[S3Name]], including the default gateway.
  3. Configure IP addressing on [[PC4Name]], including the default gateway.
  4. Verify connectivity.

You can only verify connectivity from [[R1Name]], [[S3Name]], and [[PC4Name]]. However, you should be able to ping every IP address listed in the **Addressing Table**.