**Packet Tracer – Skills Integration Project**

**A diagram of a computer network

AI-generated content may be incorrect.Addressing Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Device** | **Interface** | **IP Address** | **Subnet Mask** | **Default Gateway** |
| R1 | G0/0.10 | 172.31.10.1 | 255.255.255.224 | N/A |
| G0/0.20 | 172.31.20.1 | 255.255.255.240 | N/A |
| G0/0.30 | 172.31.30.1 | 255.255.255.128 | N/A |
| G0/0.40 | 172.31.40.1 | 255.255.255.192 | N/A |
| G0/1 | DHCP Assigned | DHCP Assigned | N/A |
| PC1 | NIC | DHCP Assigned | DHCP Assigned | DHCP Assigned |
| PC2 | NIC | DHCP Assigned | DHCP Assigned | DHCP Assigned |
| PC3 | NIC | DHCP Assigned | DHCP Assigned | DHCP Assigned |
| PC4 | NIC | DHCP Assigned | DHCP Assigned | DHCP Assigned |

**VLAN Port Assignments and DHCP Information**

|  |  |  |  |
| --- | --- | --- | --- |
| **Ports** | **VLAN Number - Name** | **DHCP Pool Name** | **Network** |
| Fa0/5 – 0/9 | VLAN 10 - Sales | VLAN\_10 | 172.31.10.0/27 |
| Fa0/10 – Fa0/14 | VLAN 20 - Production | VLAN\_20 | 172.31.20.0/28 |
| Fa0/15 – Fa0/19 | VLAN 30 - Marketing | VLAN\_30 | 172.31.30.0/25 |
| Fa0/20 - Fa0/24 | VLAN 40 - HR | VLAN\_40 | 172.31.40.0/26 |

**Scenario**

In this culminating activity, you will configure VLANs, trunks, DHCP Easy IP, DHCP relay agents, and configure a router as a DHCP client.

**Requirements**

Using the information in the tables above, implement the following requirements:

·         Create VLANs on **S2** and assign VLANs to appropriate ports. Names are case-sensitive

·         Configure **S2** ports for trunking.

·         Configure all non-trunk ports on **S2** as access ports.

·         Configure **R1** to route between VLANs. Subinterface names should match the VLAN number.

·         Configure **R1** to act as a DHCP server for the VLANs attached to S2.

-       Create a DHCP pool for each VLAN. Names are case-sensitive.

-       Assign the appropriate addresses to each pool.

-       Configure DHCP to provide the default gateway address

-       Configure the DNS server 209.165.201.14 for each pool.

-       Prevent the first 10 addresses from each pool from being distributed to end devices.

·         Verify that each PC has an address assigned from the correct DHCP pool.

**Note:** DHCP address assignments may take some time. Click **Fast Forward Time**to speed up the process.

·         Configure **R1** as a DHCP client so that it receives an IP address from the ISP network.

·         Verify all devices can now ping each other and **www.cisco.pka**.