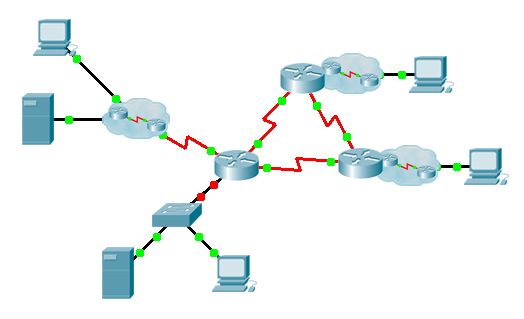
Packet Tracer – Skills Integration Challenge

1. Topology



1. Addressing Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| **[[R1Name]]** | G0/0.15 | **[[R1G0sub15Add]]** | **[[R1G0sub15SM]]** | N/A |
| G0/0.30 | **[[R1G0sub30Add]]** | **[[R1G0sub30SM]]** | N/A |
| G0/0.45 | **[[R1G0sub45Add]]** | **[[R1G0sub45SM]]** | N/A |
| G0/0.60 | **[[R1G0sub60Add]]** | **[[R1G0sub60SM]]** | N/A |
| S0/0/0 | **[[R1S000Add]]** | 255.255.255.252 | N/A |
| S0/0/1 | **[[R1S001Add]]** | 255.255.255.252 | N/A |
| S0/1/0 | **[[R1S010Add]]** | 255.255.255.252 | N/A |
| **[[R2Name]]** | G0/0 | **[[R2G00Add]]** | **[[R2R3LanSM]]** | N/A |
| S0/0/0 | **[[R2S000Add]]** | 255.255.255.252 | N/A |
| S0/0/1 | **[[R2S001Add]]** | 255.255.255.252 | N/A |
| **[[R3Name]]** | G0/0 | **[[R3G00Add]]** | **[[R2R3LanSM]]** | N/A |
| S0/0/0 | **[[R3S000Add]]** | 255.255.255.252 | N/A |
| S0/0/1 | **[[R3S001Add]]** | 255.255.255.252 | N/A |
| **[[S1Name]]** | VLAN 60 | **[[S1VLAN60Add]]** | **[[R1G0sub60SM]]** | **[[R1G0sub60Add]]** |
| **[[PC1Name]]** | NIC | DHCP Assigned | DHCP Assigned | DHCP Assigned |

1. VLANs and Port Assignments Table

|  |  |  |
| --- | --- | --- |
| VLAN Number - Name | Port assignment | Network |
| 15 - Servers | F0/11 - F0/20 | **[[R1-VLANsrvNet]]** |
| 30 - PCs | F0/1 - F0/10 | **[[R1-VLANpcNet]]** |
| 45 - Native | G0/1 | **[[R1-VLANntvNet]]** |
| 60 - Management | VLAN 60 | **[[R1-VLANmanNet]]** |

1. Scenario

This culminating activity includes many of the skills that you have acquired during this course. First, you will complete the documentation for the network. So make sure you have a printed version of the instructions. During implementation, you will configure VLANs, trunking, port security and SSH remote access on a switch. Then, you will implement inter-VLAN routing, DHCP, RIPv2, default routing, and NAT on a router. Finally, you will use your documentation to verify your implementation by testing end-to-end connectivity.

1. Documentation

You are required to fully document the network. You will need a print out of this instruction set, which will include an unlabeled topology diagram:

* 1. Label all the device names, network addresses and other important information that Packet Tracer generated.
  2. Complete the **Addressing Table** and **VLANs and Port Assignments Table**.
  3. Fill in any blanks in the **Implementation** and **Verification** steps. The information is supplied when you launch the Packet Tracer activity.

1. Implementation

Note: All devices in the topology except **[[R1Name]],** **[[S1Name]]**, and **[[PC1Name]]** are fully configured. You do not have access to the other routers. You can access all the servers and PCs for testing purposes.

Implement to following requirements using your documentation:

**[[S1Name]]**

* Configure remote management access including IP addressing and SSH:
  1. Domain is cisco.com
  2. User **[[UserText]]** with password **[[UserPass]]**
  3. Crypto key length of 1024
  4. SSH version 2, limited to 2 authentication attempts and a 60 second timeout
  5. Clear text passwords should be encrypted.
* Configure, name and assign VLANs. Ports should be manually configured as access ports.
* Configure trunking.
* Implement port security:
  1. On F0/1, allow 2 MAC addresses that are automatically added to the configuration file when detected. The port should not be disabled, but a syslog message should be captured if a violation occurs.
  2. Disable all other unused ports.
* Configure VTY lines to be accessible via SSH only

**[[R1Name]]**

* Configure inter-VLAN routing.
* Configure DHCP services for VLAN 30. Use **LAN** as the case-sensitive name for the pool.
* Implement routing:
  1. Use RIP version 2
  2. Disable automatic summarization
  3. Configure one network statement for the entire **[[DisplayNet]]** address space
  4. Configure a default route to the Internet.
* Implement NAT:
  1. Configure a standard, one statement ACL number 1. All IP addresses belonging to the

**[[DisplayNet]]** address space are allowed.

* 1. Refer to your documentation and configure static NAT for the File Server.
  2. Configure dynamic NAT with PAT using a pool name of your choice, a /30 mask, and these two public addresses:
     1. **[[NATPoolText]]**
  3. Bind the NAT pool to ACL 1 and configure PAT. Packet Tracer does not grade this command.
  4. Activate NAT on all appropriate interfaces.

[[PC1Name]]

Verify **[[PC1Name]]** has received full addressing information from **[[R1Name]]**

1. Verification

All devices should now be able to ping all other devices. If not, troubleshoot your configurations to isolate and solve problems. A few tests include:

* Verify remote access to **[[S1Name]]** by using SSH from a PC.
* Verify VLANs are assigned to appropriate ports and port security is in force.
* Verify a complete routing table.
* Verify NAT translations and statics.
  1. **Outside Host** should be able to access **File Server** at the public address.
  2. Inside PCs should be able to access **Web Server**.

1. Suggested Scoring Rubric

Packet Tracer scores 70 points. Documentation is worth 30 points.