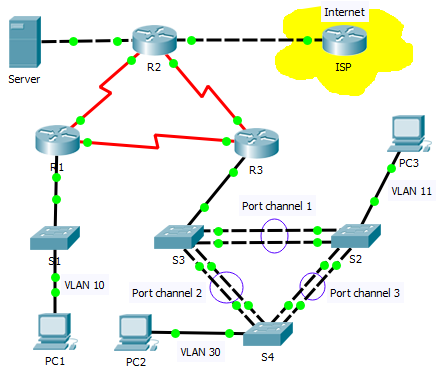
CST3562 Case Study

1. Student Number: M00688589 Student Name: Dens Sevcuks
2. Introduction

An International Travel Agency (ITA) network is shown in the topology diagram. The network has been implemented based on the requirements but some of the required functions are not working properly. Carefully examining the requirements and troubleshooting the network as necessary.

1. *Download the Packet Tracer activity file and the word document (this document) from Unihub and rename both files by replacing the M00xxxxxx with your student number. This case study uses a variety of technologies including routing, port security, EtherChannel, DHCP, NAT and PPP. Devices in the topology have been pre-configured with some errors introduced. Therefore the configurations do not entirely meet with the requirements. Your task is to review the requirements, isolate and resolve any issues, and then document the steps you took to verify the requirements.*
2. Topology



1. Addressing Table

*Packet Tracer file will randomly generate address sets automatically. Therefore, each student may get different addresses. Filling this address table based on the information from your packet tracer instruction window. You need this information as the reference for your troubleshooting.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Device | Interface | IP Address | Subnet Mask | Default Gateway |
| R1 | G0/0 | 192.168.132.1 | 255.255.255.0 | - |
| S0/0/0 | 10.1.200.1 | 255.255.255.252 | - |
| S0/0/1 | 10.3.49.1 | 255.255.255.252 | - |
| R2 | G0/0 | 209.165.200.225 | 255.255.255.224 | - |
| G0/1 | 192.168.255.1 | 255.255.255.0 | - |
| S0/0/0 | 10.1.200.2 | 255.255.255.252 | - |
| S0/0/1 | 10.2.65.1 | 255.255.255.252 | - |
| R3 | G0/1.11 | 192.168.5.1 | 255.255.255.0 | - |
| G0/1.30 | 192.168.65.1 | 255.255.255.0 | - |
| S0/0/0 | 10.3.49.2 | 255.255.255.252 | - |
| S0/0/1 | 10.2.65.2 | 255.255.255.252 | - |
| S1 | VLAN10 | DHCP assigned | DHCP assigned | - |
| S2 | VLAN11 | 192.168.5.2 | 255.255.255.0 | - |
| S3 | VLAN30 | 192.168.65.2 | 255.255.255.0 | - |
| PC1 | NIC | DHCP assigned | DHCP assigned | DHCP assigned |
| PC2 | NIC | 192.168.65.10 | 255.255.255.0 | 192.168.65.1 |
| PC3 | NIC | 192.168.5.10 | 255.255.255.0 | 192.168.5.1 |
| Server | NIC | 192.168.255.254 | 255.255.255.0 | 192.168.255.1 |

1. Requirements:

**DHCP**

* R1 is the DHCP server for the R1 LAN.

**Switching Technologies**

* Port security is configured to only allow **PC1** to access **S1's** F0/3 interface. All violations should disable the interface.
* Link aggregation using EtherChannel PAgP protocol is configured on **S2**, **S3**, and **S4**. Ports should actively ask if the other side can or will participate.

**Routing**

* All routers are configured with OSPF process ID 1 and no routing updates should be sent across interfaces that do not have routers connected.
* R2 is configured with a default route pointing to the ISP and redistributes the default route.
* NAT is configured on R2 and no untranslated addresses are permitted to cross the Internet.

**WAN Technologies**

* The serial link between R1 and R2 uses HDLC encapsulation.
* The serial link between R2 and R3 uses HDLC encapsulation~~.~~
* The serial link between R1 and R3 uses PPP with PAP.

**Connectivity**

* Devices should be configured according to the Addressing Table.
* Every end device should be able to ping every other device.

1. Troubleshooting Documentation

|  |  |  |
| --- | --- | --- |
| **Device** | **Error** | **Correction** |
| R1 | Default router and network addresses were wrongly configured in DHCP pool and according to scope | IP address configured according to the table and scope  ip dhcp pool Access  network 192.168.132.0 255.255.255.0  default-router 192.168.132.1 |
| R1 | IP address were wrongly configured for S0/0/0 | IP address configured according to the table  interface Serial0/0/0  ip address 10.1.136.1 255.255.255.252 |
| R1 | IP address were wrongly configured for S0/0/1 | IP address configured according to the table  interface Serial0/0/1  ip address 10.3.190.1 255.255.255.252 |
| R1 | Network was not defined in the OSPF process | Network defined in the ospf process  router ospf 1  log-adjacency-changes  passive-interface GigabitEthernet0/0  network 192.168.132.0 0.0.0.255 area 0  network 10.1.200.0 0.0.0.3 area 0  network 103.3.49.0 0.0.0.3 area 0 |
| R2 | IP address were wrongly configured for S0/0/0 | IP address configured according to the table  interface Serial0/0/0  ip address 10.1.200.2 255.255.255.252 |
| R2 | IP address were wrongly configured for S0/0/1 | IP address configured according to the table  interface Serial0/0/1  ip address 10.2.65.1 255.255.255.252 |
| R2 | Network was not defined in the OSPF process | Network defined in the ospf process  router ospf 1  log-adjacency-changes  redistribute static  passive-interface GigabitEthernet0/1  network 192.168.255.0 0.0.0.255 area 0  network 10.1.200.0 0.0.0.255 area 0  network 10.1.200.0 0.0.0.3 area 0  network 10.2.65.0 0.0.0.3 area 0  default-information originate |
| R3 | IP address were wrongly configured for S0/0/0 | IP address configured according to the table  interface Serial0/0/0  ip address 10.3.49.2 255.255.255.252 |
| R3 | IP address were wrongly configured for S0/0/1 | IP address configured according to the table  interface Serial0/0/1  ip address 10.2.65.2 255.255.255.252 |
| R3 | Network was not defined in the OSPF process | Network defined in the ospf process  router ospf 1  router-id 3.3.3.3  log-adjacency-changes  network 192.168.5.0 0.0.255 area 0  network 192.168.65.0 0.0.0.255 area 0  network 10.3.49.0 0.0.0.3 area 0  network 10.2.65.0 0.0.0.3 area 0 |
| R3 | Passive-interface default was issued in the ospf | Removed the default statement and issued correct statement |
| R3 | Subinterface ip address for vlan 30 was not correct | IP address configured according to the table |
| R3 | Subinterface ip address for vlan 11 was not correct | IP address configured according to the table |
| S1 | Port security was incorrectly configured on the interface | interface FastEthernet0/3  switchport access vlan 10  switchport mode access  switchport port-security  switchport port-security mac-address sticky  switchport port-security mac-address sticky 0090.0c83.313E |
| S2 | Etherchannel was configured with Auto option | Correct Etherchannel configuration was issued |
| S2 | Vlans were not created | Vlans created |
| S3 | Etherchannel was configured with Auto option | Correct Etherchannel configuration was issued |
| S3 | Vlans were not created | Vlans created |
| S4 | Etherchannel was configured with Auto option | Correct Etherchannel configuration was issued |
| S4 | Vlans were not created | Vlans created |
| PC2 | IP address wrongly configured | IP address configured according to the table |
| PC3 | IP address wrongly configured | IP address configured according to the table |

(Add more rows if needed)

1. Verification Documentation

Capture output from verification commands and provide documentation proving that each of the requirements has been satisfied.

|  |
| --- |
| **Changing R1 S0/0/0 and S0/0/1 addresses**    **Changing R2 S0/0/0 and S0/0/1 addresses**    **Changing R3 S0/0/0 and S0/0/1 and addresses**    **Changing PC2 IP address subnet mask and default gateway according to table**    **Changing PC3 IP address subnet mask and default gateway according to table**    **DHCP Configuration on R1**    **Port Security Configuration on S1 port f0/3**    **PagP Etherchannel on S2**    **PagP Etherchannel on S3**    **PagP Etherchannel on S4**    **OSPF Configuration on R1**    **OSPF Configuration on R2**    **OSPF Configuration on R3**    **NAT and Default route on R2** |
|  |

1. Submission
2. Save this document (troubleshooting and verification), save the Packet Tracer activity file you have completed, submit both files via Unihub before the deadline which is by the Friday of Week 24.

Packet Tracer scores: 60%. The troubleshooting/verification documentation: 40%.