Albion University network Project

Albion University is large university which has two campuses situated 20 miles apart.

The university’s students and staff are distributed in 4 faculties; these include the faculties of health and science; business; engineering/computing and arts/ design. Each member of staff has a PC and students have access to PC in the labs

**Requirements**:

1. Create a network topology with the main component to support the following:

* **Building A:** Administrative staff in the department of management, HR and Finance. The admin staff PC’s are distributed in the building offices and it is expected that they will share the networking equipment (Hint: use of VLANs in expected here.)

The faculty of business is also situated in this building.

* **Building B:** Faculty of engineering and Computing and Faculty of the Art and Design.
* **Building C:** Student’slab and IT department. The IT department hosts the University Web Server and other services
* There is also and email hosted externally on the Cloud

1. a Smaller Campus:

* Faculty of Health and Science ( staff and students lab are situated on separate floors)

1. You will be expected to configure the core devices and few end devices to provide end-to-end connectivity and access to internal servers and external servers.

* Each Department/faculty is expected to be on its own separate IP networks
* The switches should be configures with appropriate VLAN’s and security settings
* RIPv2 will used to provide routing for the routers in the internal network and static routing for the external servers.
* The devices in building A will be expected to acquire dynamic IP addresses from a router-based DHCP server.

**My Task:-**

**Task 1.** Your task is toplan, design, and prototype the network topology for Albion University’s network using Cisco Packet Tracer. **Formative feedback will be given on this task in week 6**.

**Task 2.** Configure in Packet Tracer the network with appropriate setting to achieve the connectivity and functionalities specified in the requirements.

**Task 3.** Produce a report (Max 1500 words) including evaluation your personal network design and critical appraisal on your network work. Your evaluation should include Performance, scalability, reliability and security of your proposed network.

**Router setting**

En

Conf t

Interface serial 0/1/0

Or interface GigaEthernet 0/0

No shutdown

**Switch setting**

En

Conf t

Interface Range fastEthernet 0/1-24

Switchport mode access

Switchport access vlan 60

show interfaces trunk

Port Mode Encapsulation Status Native vlan

Gig1/0/1 on 802.1q trunking 1

Port Vlans allowed on trunk

Gig1/0/1 90,100

Port Vlans allowed and active in management domain

Gig1/0/1 90,100

Port Vlans in spanning tree forwarding state and not pruned

Gig1/0/1 90,100

**Setting up DHCP server.**

Router 1

En

Conf t

Int gig 0/0.90

Encapsulation dot1q 90

Ip address 192.168.9.1 255.255.255.0

Exit

Do wr

**RIPv2 Setup**

Conf t

Router rip

Version 2

Network 192.168.9.0

Exit