DESIDGN SCENARIO

Design and Implementation

By

Eng. Ibrahim Amreya

Dr. Amjad Hawwash

An-Najah National University

Topology (To be drawn by the student)

Addressing Table (Filled by the student)

Device	Model	Interfaces Used	IP Address	Gateway

Scenario

The current project is a network for a Car Dealer company. This company has 3 branches in two different cities. The main branch is at Ramallah city, the second and third ones are at Nablus. Ramallah branch has about 80 hosts, and Nablus branches have 40 hosts. The current infrastructure at all sites is one flat LAN at each branch. All branches are connected via a leased line subscription. The redesign is supposed to enhance performance and reliability of the network; they are asking for the following:

1. Ramallah branch is to be divided into two different networks as follows:
    a. DMZ: 10 hosts.
    b. Staff: 70 employees.
2. Nablus first branch is to be divided into Organizational departments as follows:
    a. Sales: 15 employees.
    b. Management: 5 hosts.
3. Nablus second branch is only one LAN for all 20 employees.
4. Both Nablus branches have a metro Ethernet connection.
5. Both of Nablus branches are connected via leased serial connections.
6. Main internet connection is at Ramallah (Lab network is to be used as an ISP network).

Conceptual Requirements

Required Concepts that must be included in your design:

a. Next hop, directly connected, and floating static routes.
b. Network address translation.
c. Extended ACLs.

Tasks

1. Design the logical topology as per the requirements.
2. Design an appropriate addressing scheme.
3. Connect the topology proposed.
4. Configure all devices with the required configurations.
5. Configure all conceptual requirements.
    a. Use static routing only as per the requirements. Nablus second branch should favor routing through Nablus first branch for all destination except internet connectivity; but should have backup routes directly to Ramallah.
    b. Proper NATing should be used to enable internet communication. Noting to not make an address overlap with the university address ranges.
        i. PAT for internet.
        ii. Static NAT for DMZ (use a loopback interface to simulate a DMZ host).
    c. Security:
        i. Only HTTP, HTTPS, and mail are allowed for all LAN hosts.
        ii. No traffic is allowed to originate from the DMZ.

   iii. HTTP, HTTPS, ICMP, and telnet requests is to be allowed to the DMZ.
   iv. Configure HTTP OR/AND HTTPS services on the DMZ host for proper testing. (could also use a PC with either windows or Linux OS with apache installed to simulate DMZ).

6. Use a lab PC as an internet host to test requirements.
7. Test connectivity and all required services.

GOOD LUCK