# **Project Idea : Build enterprise network ( many site )**

A diagram of a diagram

Description automatically generated

* **Team members**

1. Ahmed Elshahat Mahmoud Elshahat (Team leader)
2. Noor Alain Adel Mazroa
3. Ahmed Mohamed Ragab
4. Ebrahim Talat Ebrahim

* **Under the supervision of the engineer**

**E.g.** **Muhammad Nasr**

* **Training company**

**Harvest company**

**Week 1: ( Build internal network )**

## **Tasks:**

**Install internal network using cisco Switchs&Router**

## **Deliverables:**

Using Cisco packet tracer &Gns3

Design Contain (4Routers \_2 DSW \_ 6 ASW \_ 4 PC\_6 Server )

* **Participations:**

1-Ahmed Elshahat Mahmoud Elshahat (Team Leader) led the network design and installation, configuring the core infrastructure and guiding the team.

2-Noor Alain Adel Mazroa assisted in setting up the network layout and ensuring scalability.

3-Ahmed Mohamed Ragab helped configure switches and validate connectivity.

4-Ebrahim Talat Ebrahim supported the setup and testing of network components

## **Week 2: Configuration for Access &Distribution Switches**

* **Tasks:**

**Configuration for Access switches** :manually make a configuration for four Access layer switches

**Configuration for Distrubtion switches: manually** make a configuration for two

Distribution Switch

* **Deliverables:**

Basic configuration

* + Hostname
  + Enable secret and VTY password ( cisco )
  + Welcome Message
  + Encrypt all password
  + Create VLAN 10 ( sales ) and VLAN 20 (IT) VLAN 30 ( HR ) and VLAN 40 (Manger)
  + Assign port to VLAN at access SW F0/1-5 >> VLAN 10

F0/6-10 >> VLAN 20 F0/11-15 >> VLAN 30

* + Config trunk port
  + Config ether channel using LACP
  + Config DSW 1 as Root bridge for vlan 1,10,20 & Config it as Root primary
  + Config DSW 2 as Root bridge for vlan 30 & Config it as Root secendary
  + Config access port as portfast at Access SW
  + Protect Access port from receive unexpected PBDU
  + Config port security at access SW
  + Save Config at NVRAM
* **Participations:**

1- Ahmed Elshahat (Team Leader) configuration of branch 1

VLAN

Inter-VLAN routing.

Host Standby Router Protocol (HSRP) for redundancy.

EtherChannel

SSH and config Root bridge

2- Noor Alain (Team Member) configuration of branch 2

VLAN

Inter-VLAN routing.

Host Standby Router Protocol (HSRP) for redundancy.

EtherChannel

SSH and config Root bridge

3- Ebrahim Talat (Team Member) configuration of branch 3

VLAN

Inter-VLAN routing.

Host Standby Router Protocol (HSRP) for redundancy.

EtherChannel

SSH and config Root bridge

4- Ahmed Mohamed Ragab(Team Member) configuration of branch 1,2,3

Config access port as port fast at Access SW

o Protect Access port from receive unexpected PBDU

o Config port security at access SW

o Save Config at NVRAM

## **Week 3: Configuration for Routers**

* **Tasks:**

**Configuration for Routers: manually** make a configuration for two .

## **Deliverables:**

* Basic configuration
  + Hostname
  + Enable secret and VTY password ( cisco )
  + Welcome Message
  + Encrypt all password
  + Config sub interface
  + Ip address for serial port
  + Config DHCP for Sales and IT network at Mans and Alex router
  + Config EIGRP AS 1
  + Config default route from Cairo Branch to ISP
  + Advertise default route from Cairo router to all other branch
  + Save Config at NVRAM
  + Backup Config to TFTP at Cairo router
* **Participations:**

 Ahmed Elshahat Mahmoud Elshahat (Team Leader) led the overall router configuration. HSRP Between ISP

 Noor Alain Adel Mazroa, Ahmed Mohamed Ragab, and Ebrahim Talat Ebrahim all contributed equally, configuring routers, setting up EIGRP , DHCP, and ensuring routes were correctly advertised.

## **Week 4: Services configuration& Final presentation**

* **Tasks:**

**Configuration for Services such as NTP,Log server,PPP,ACLs :** To monitor your traffic

**Final Presentation:** Prepare a report and presentation summarizing the project work, including network that you make, model and Design

## **Deliverables:**

* + Config all router to syn time with NTP server at Cairo router
  + Config ACL to permit traffic from IT department to Facebook and deny Sales department
  + Config NAT at Cairo router
  + Config PPP between Cairo router and ISP
  + Config all router to send log message to log server
  + Final report and presentation
* **Participations:**

1. NTP Configuration (Ahmed Mohamed Ragab):  
   All routers were synchronized with the NTP server at the Cairo router, ensuring accurate timekeeping across the network.

2-ACL Configuration (Ahmed Elshahat Mahmoud Elshahat):  
Configured Access Control Lists (ACLs) to permit IT department traffic to Facebook while restricting access for the Sales department, adding a layer of security and traffic control.

3-PPP Configuration (Noor Alain Adel Mazroa):  
A PPP connection was established between the Cairo router and the ISP, ensuring reliable and secure communication.

4- Syslog Configuration (Ebrahim Talat Ebrahim):  
Configured all routers to send log messages to the log server, enabling effective traffic monitoring and troubleshooting through centralized logging