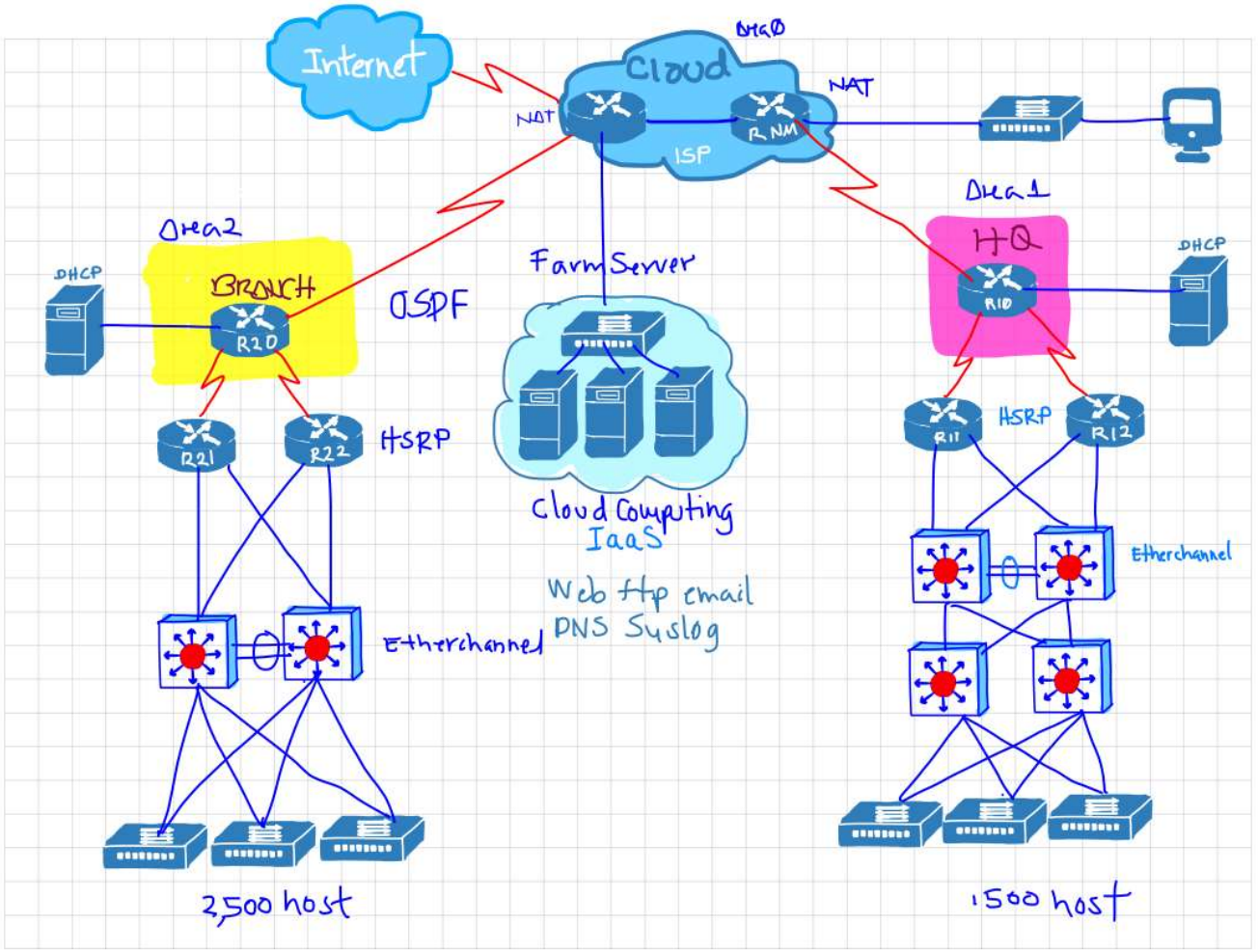

Figure #1. Scenario Topology

Study Case **Redes de Computadoras**

Scenario

It is a small to mid-size company with corporate offices and a branch. This company contracted a service provider for *Cloud Computing* services in the mode of IaaS for their 250 servers, also the service provider will help in the management activities remotely in such a way that they have to make the necessary configurations to allow the company to access the company's servers.

The architecture of the LAN has a **hierarchical design** (Access, Distribution, Core), which meets the design requirements of a fault tolerant network, scalability, QoS, and security.

Will practice and be evaluated in the following skills:

A. Configuration of initial device settings
B. Interface addressing
C. Configuration of **VLANs** and **trunking**
D. Routing between **VLANs**
E. Dynamic routing with **OSPF single-area**
F. Configuration of standard, extended **ACLs**
G. **Switch port security** configuration
H. Remote switch management configuration
I. **Syslog** and **NTP** configuration
J. Interface activation and addressing in IPv4
K. Static and default routing in IPv4
L. **Static** and dynamic **NAT** configuration
M. **DHCP** server configuration
N. Configure dynamic routing OSPF
O. Configure **standard** and **extended** IPv4 ACLs.
P. EtherChannel & HSRP

Tasks to do

		Deliverable
1. Create the **multiuser mode** topology in Packet Tracer according to the diagram		**MultiUser mode topology**
a. Design a VLSM addressing scheme that meets the requirements of the company. b. VLANs c. Required segments d. Distribution tables of network segments e. Static IP addresses for servers and intermediate devices f. Dynamic IP addresses for end-devices		**Addressing scheme** according the requirements
2. Initial configuration of device values		
3. Configure the addressing of the interfaces		
4. Configure **VLANs** and **Truncking** (Branch & HQ)		
5. Configure inter-VLAN Router- on- a- Stick required		
6. Dynamic routing a. **OSPF** sigle-area		Output of the ip route commands of the configured routers
7. Configuration of standard, and extended ACLs a. According to the requirements of the company, create the necessary ACLs: The company that was hired to assist in the administration remotely can: 1. Access the Farm Servers 2. Remote access must be through a secure SSH connection 3. Extended ACLs must be created so that only allowed traffic can flow through the network		Test of connectivity
8. **Servers**: They must have static IP addresses according to the assigned segment. They must also be configured with **static NAT** so that they can be accessed from anywhere in the network (Internet). a. WEB b. FTP c. Email d. Syslog e. DNS		Test of connectivity
9. **Security** a. Firewall (ACLs)		

10. **Management** a. Configure the following services: i. DNS. Assign the domain name ii. NAT iii. Syslog iv. NTP v. DHCP		
11. • The servers in the farm-servers zone must be configured to have a **static NAT** in such a way that they can be accessed from any part of the internetwork • **PAT (overload)** for others situations		
12. **DHCP** • There must be one server in HQ and another in Branch to assign IP addresses to hosts that require it • Configure a DHCP server as show in the topology • Configure DHCP relay agents as required		
13. **LAN** a. Switch **port security** configuration b. **Remote switch management** configuration c. VLANs i. **VLANs** (Sales(150 host), Accounting(250 host), HR(100 host), Production(450 host), Management(10 host), Native) ii. Router- on- a- Stick as Inter-VLAN routing d. **Redundancy** i. Configure **Etherchannel** where necessary, making use of: 1. **LACP** 2. **PAgP** ii. HSRP 1. **According the topology**		A plus VLAN for voice

NOTE:

There are activities that are not completely specified it is possible to make improvements to the design, if there are no radical changes to the design proceed to apply it, and document them in a section for that purpose.

If the changes are radical consult with the instructor before applying it.

Any modification that is required to make over the original topology must be justified to the instructor and reported before performing.