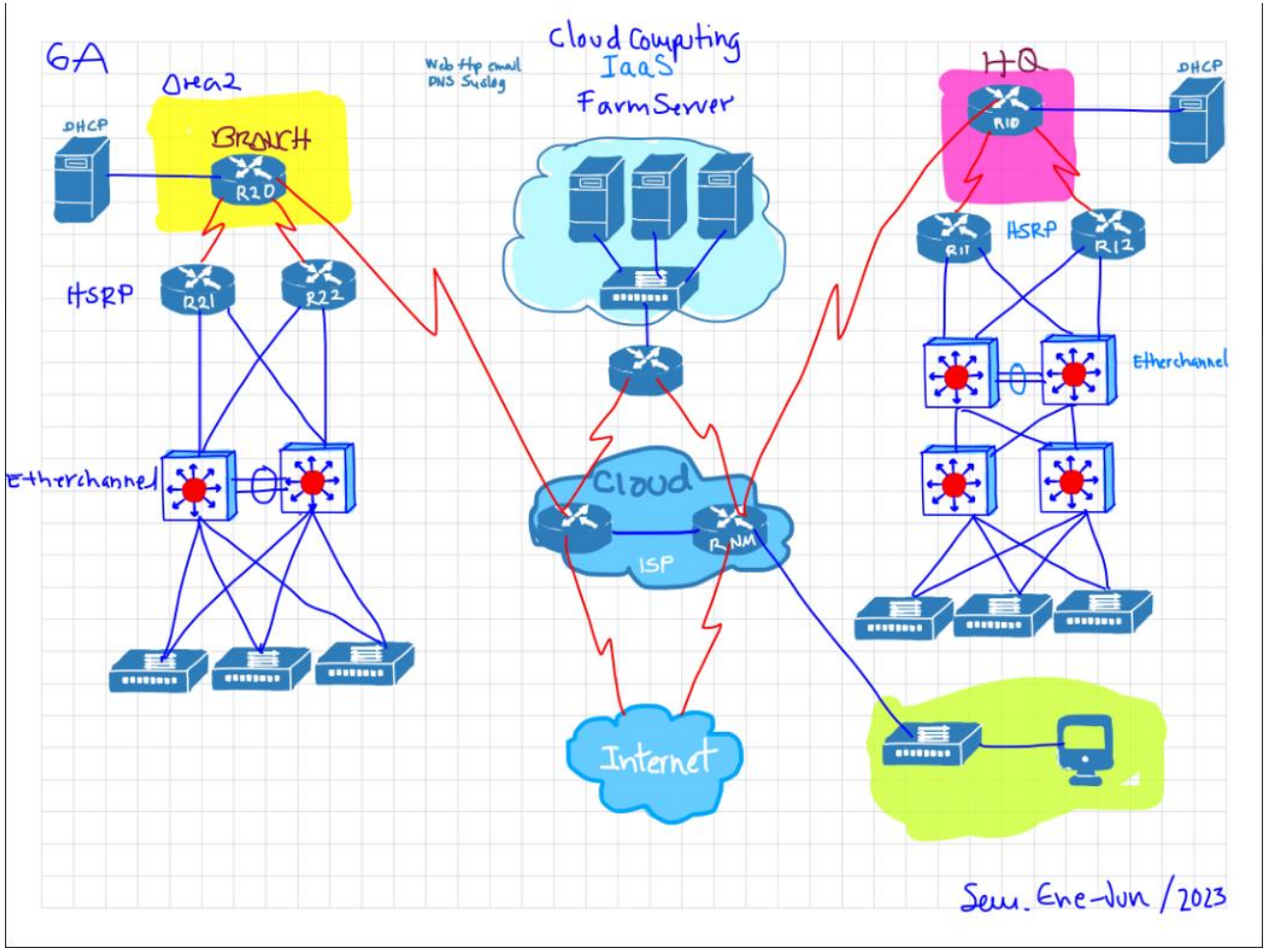

Figure #1. Scenario Topology

Tecnológico Nacional de México/ Instituto Tecnológico de Querétaro
@Ing. Ricardo Díaz Sánchez/ ricardo.ds@queretaro.tecmnm.mx

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. Configuring multiuser topology
B. Configuration of initial device settings
C. Interface addressing
D. Interface activation and addressing in IPv4
E. Configuration of **VLANs** and **trunking**
F. Configuring Inter-VLAN Routing Router-on-a-stick
G. Static and default routing in IPv4
H. **DHCP** server configuration
I. Configure several network services like: Web, FTP, email, DNS
J. **Syslog** and **NTP** configuration
K. **Switch port security** configuration
L. Remote switch management configuration
M. Redundancy with EtherChannel & HSRP

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@Ing. Ricardo Díaz Sánchez/ ricardo.ds@queretaro.tecmnm.mx

Tasks to do

Task 1

		Deliverable
1. Create the **multiuser mode** topology in Packet Tracer according to the diagram		**MultiUser mode topology**
2. Design a VLSM addressing scheme that meets the requirements of the company. a. VLANs b. Required segments c. Distribution tables of network segments d. Static IP addresses for servers and intermediate devices e. Dynamic IP addresses for end-devices		**VLSM Addressing scheme** according the requirements. Deliver in the attached format.
3. Initial configuration of device values		
4. Configure the addressing of the interfaces		Perform connectivity test
5. Configure VLANs and Truncking (Branch & HQ)		
6. Configure inter-VLAN Router- on- a- Stick required		
7. Static routing Configure at least one static routes, and one default static route, where required.		Output of the IP route commands of the configured routers
8. On the edge router (BR) configure a floating backup route with a service provider.		
9. **LAN** a. Switch **port security** configuration b. **Remote switch management** configuration c. VLANs i. **VLANs** (Sales(), Accounting(), HR(), Production(), Management(), Native ii. Router- on- a- Stick as Inter-VLAN routing d. **Redundancy** i. Configure **Etherchannel** where necessary, making use of: ii. **PAgP** iii. HSRP 1. **According the topology**		A plus VLAN for voice, with VoIP telephones to test with a conversation.

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Task 2

10. **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		
11. **Servers**: They must have static IP addresses according to the assigned segment. a. WEB b. FTP c. Email		Test of connectivity
12. **Management** a. Configure the following services: i. DNS. Assign the domain name ii. Syslog iii. NTP iv. DHCP		

Task 3

13. Remote access must be through a secure SSH connection		Test of connectivity
14. **Security** a. Port security		

Task 4

15. Team work evidence		
16. Lesson Learned		
17. Troubleshooting		

NOTE:

Several activities 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.

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