Scenario

CryptoMine is an international company that specializes in production and distribution of cryptocurrency mining hardware (ASICs). Recently, four major mining companies merged together to form CryptoMine. CryptoMine has many corporate sites located across North America, including locations in Toronto, Vancouver, Chicago and Mexico.

CryptoMine will be creating multiple different departments managed at each of its different branch locations. The main office will be located in Chicago, and is managed by a team of students located in Oshawa, Ontario. Presently there are four main sites:

1) **Chicago Headquarters** – this site houses the corporate management employees and is also the main site of manufacturing and distribution of mining ASICs.

2) **Vancouver Branch** – this site houses the server farm for both internal and external connections. There are also some admin staff who manage/monitor the servers to which they have direct contact.

3) **Toronto Branch** – this site is the primary location for our Sales department.

4) **Mexico Branch** – this site is responsible for research and development.

Your task is to develop a pilot network capable of being integrated such that all branches will be connected through a dedicated WAN connection using BGP and can be managed completely remotely from the Ontario Tech Residence.

Required Resources

- All configurations can be completed using Cisco Packet Tracer 8.2.1 or newer logged in with your Netacad account.
  - For all routers, please use the "4331" router model. Once you create the device, click on it, power it off (click the power switch), and add a "NIM-2T" to an open socket. Power the device back on.
  - For the WAN device (simulating the Internet), please use the "4331" router model. Once you create the device, click on it, power it off (click the power switch), and add **two** "NIM-2T" cards to the empty sockets. Power the device back on.
  - For the Chicago core and distribution switches, please use the "3650 24PS" model. Once you create the device, click on it, and add an "AC-POWER-SUPPLY" module to one of the empty slots to power the device on. The switch will power on automatically when the power supply module is added.
  - For the access switches in Chicago, Vancouver, and Mexico, please use the "2960" switch model.
- Note: Anywhere you see an "XX" in the middle of an IP address denotes group number (e.g., 10.XX.10.1/24 would be 10.1.10.1/24 for group 1).
- To connect the Gateway routers on each site to the Internet router, use the **Serial** cable from the **Connections** tab on the bottom.
- For all other connections, use the **Copper Straight-Through** cable from the **Connections** tab.

Logical Topology
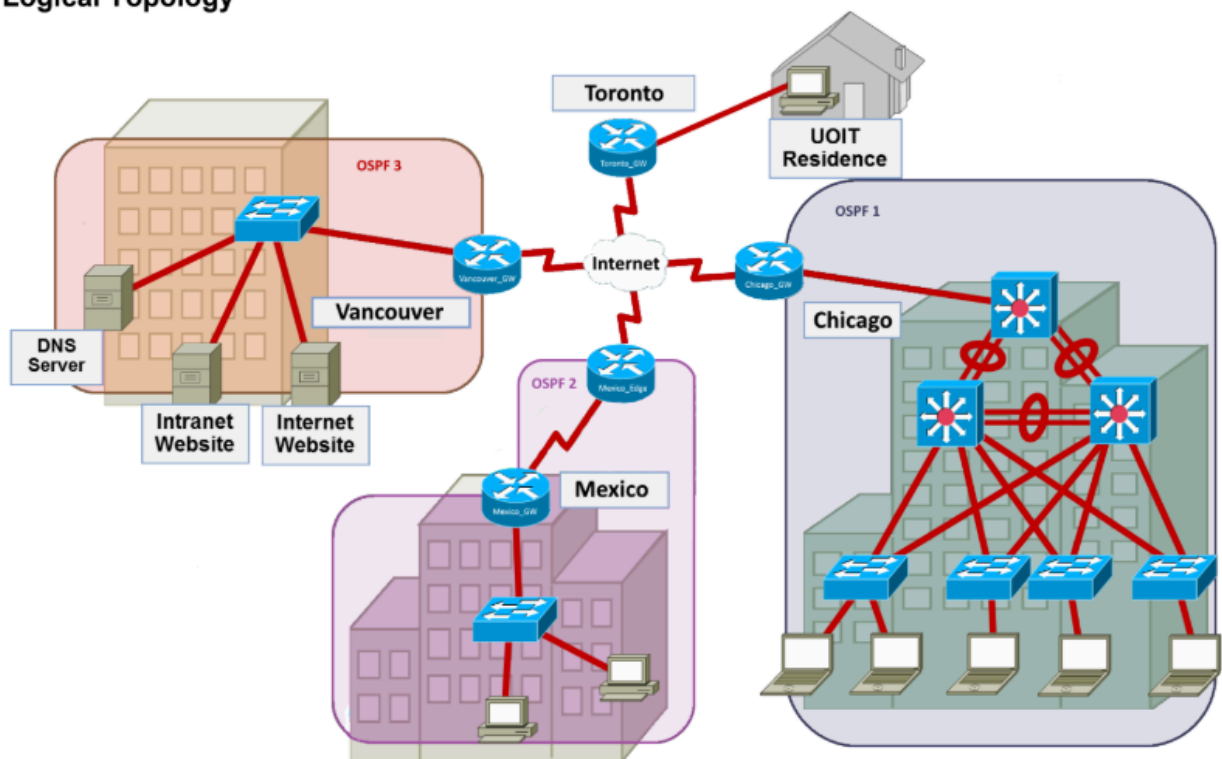
Chicago VLAN Information Table

VLAN Number	Network Address	VLAN Name	Port Mapping
10	10.XX.10.32 /27	MANUFACTURING	Floor Switches Fa0/1-5
20	10.XX.10.64 /27	DISTRIBUTION	Floor Switches Fa0/6-10
30	10.XX.10.96 /27	CONFERENCING	Floor Switches Fa0/11-15
40	10.XX.10.128 /27	VOIP	Floor 1 Switch Fa0/16-20
99	10.XX.10.160 /27	MANAGEMENT	All Trunks

IP Addressing Table

Device	Interface	IP Address	Subnet Mask
Toronto_GW Router	S0/1/0	10.XX.10.1	255.255.255.252
Vancouver_GW Router	S0/1/0	10.XX.10.5	255.255.255.252
	Gi0/0/0	10.XX.20.1	255.255.255.0
Mexico_Edge Router	S0/1/0 (to Internet)	10.XX.10.9	255.255.255.252
	S0/1/1 (to Mexico_GW)	10.XX.30.1	255.255.255.252
Mexico_GW Router	S0/1/0 (to Mexico_Edge)	10.XX.30.2	255.255.255.252
	Gi0/0/0.100	10.XX.30.33	255.255.255.224
	Gi0/0/0.200	10.XX.30.65	255.255.255.224
Chicago_GW Router	S0/1/0	10.XX.10.13	255.255.255.252
	Gi0/0/0.10	10.XX.10.33	255.255.255.224
	Gi0/0/0.20	10.XX.10.65	255.255.255.224
	Gi0/0/0.30	10.XX.10.97	255.255.255.224
	Gi0/0/0.40	10.XX.10.129	255.255.255.224
	Gi0/0/0.99	10.XX.10.161	255.255.255.224
Internet (4331 simulating Internet)	S0/1/0 (to Toronto GW)	10.XX.10.2	255.255.255.252
	S0/1/1 (to Vancouver GW)	10.XX.10.6	255.255.255.252
	S0/2/0 (to Mexico Edge)	10.XX.10.10	255.255.255.252
	S0/2/1 (to Chicago GW)	10.XX.10.14	255.255.255.252
Core Switch	VLAN 99	10.XX.10.162	255.255.255.224
Distribution Switch 1	VLAN 99	10.XX.10.163	255.255.255.224
Distribution Switch 2	VLAN 99	10.XX.10.164	255.255.255.224
Floor 1 Access Switch	VLAN 99	10.XX.10.165	255.255.255.224
Floor 2 Access Switch	VLAN 99	10.XX.10.166	255.255.255.224
Floor 3 Access Switch	VLAN 99	10.XX.10.167	255.255.255.224
Floor 4 Access Switch	VLAN 99	10.XX.10.168	255.255.255.224
Internet Webserver	FastEthernet0	10.XX.20.110	255.255.255.0
Intranet Webserver	FastEthernet0	10.XX.20.100	255.255.255.0
DNS Server	FastEthernet0	10.XX.20.101	255.255.255.0

Note: Any interface not being used in the topology can be shut down.

Core	
Distribution	
Access	

Floor 1 Floor 2 Floor 3 Floor 4