

The Recruit

Owen Hendricks recently joined the CIA as a lawyer. Within his first working week, he gets entangled in a dangerous game of international politics when a former CIA asset threatens to leak potential officers' private information/emails. Owen has hired your team as network engineers to set up a network topology across the United States CIA departments so that he can get first-hand information about the former asset if he tries to get access to any of the CIA databases.

Owen has informed you and your team that the headquarters of the CIA is in **New York (NY)**. This department will be monitoring the rest of the departments across the United states. Owen also deciphered that the rogue agent contacted them from **Texas (TX)**. Therefore, extra precautions need to be taken in that state as well. The distance between each city and the number of computer devices in the departments (host devices) are listed below:

	NY	CA	TX	AZ	FL	NV
NY(30)	0					
CA (60)	1148	0				
TX(20)	758	246	0			
AZ(10)	918	108	198	0		
FL(50)	545	678	304	414	0	
NV(40)	1025	55	276	116	765	0

*The numbers in brackets () specify the number of devices in the city and the values in the table specify the distance (in kilometers) between branches. *

NY=New York | CA =California | TX=Texas | AZ=Arizona | FL=Florida | NV=Nevada

!! Please find your setup requirements on the next page !!

Requirements:

While creating the network infrastructure, you were provided with certain restrictions and rules that you needed to follow:

- Choose an appropriate network address and create subnets to assign to each branch with the least amount of waste.
- **New York** will have its own web server and a DNS server. Users can access the **New York** server where upon entering the server, it will show the message :
“**Welcome to CIA Headquarters**”
- As mentioned, **New York** and **Texas** are the most important cities; for security, they will use static addressing while the other branches' IP addresses will be assigned using DHCP and handled by their network's DHCP server.
- **New York** and **Texas** will be communicating a lot which is why they will require email servers to be set up so that they can exchange mail among themselves. Make sure the email configurations are all set up.
- **Nevada - California** and **Arizona - Texas** must be connected with each other manually.
- Establish connections among all the branches with the shortest route possible. When establishing a connection, keep the following things in mind:
 - There has to exist at least one floating route among the branches.
- Showing **1 device** per 10 devices is enough to represent the full active computers in the departments. Keep in mind that **Florida** and **California** will have one laptop in each city.
- Configure at least one network to be routed dynamically and one to be routed statically.
- Default routes can not be configured in any of the routers for security reasons.

- You have to be able to ping from one city to another after all the setups are properly completed

Deliverables:

- The network mentioned above should be implemented in packet tracer, with the necessary devices and full configuration.
- After completion, you should be able to test the conditions imposed.
- You will have to submit the followings:
 - Network topology diagram with proper labels
 - The configuration commands of all the routers you have implemented.
 - VLSM tree
 - IP address table