

## DESIGN SCENARIO INDIVIDUAL ASSIGNMENT

SUBMISSION DATE 26<sup>TH</sup> NOVEMBER 2021

ElectroMyCycle, a manufacturer of new electric motorcycles. ElectroMyCycle has chosen you to design a new network that will let the company scale to a larger size. The campus network will support about 200 employees and a new data center. Another feature of the campus network will be a state-of-the-art manufacturing facility with networked equipment that communicates with servers in the data center that support real-time control and management. Engineers will access the servers from their PCs in the access layer of the campus network.

ElectroMyCycle will sell its new motorcycle both online and through a large retail company. For online sales, ElectroMyCycle plans to have a DMZ that connects a public web server, a DNS server, and an email server. The web server needs to communicate with back-end servers in the data center that hold customer billing data. ElectroMyCycle also plans to open a branch sales office in the city where the retail company's corporate headquarters reside, about 500 miles from ElectroMyCycle's headquarters.

### QUESTIONS

1. List the major user communities for your design.
2. List the major data stores and the user communities for each data store.
3. Identify major network traffic flows in your network topology drawing.
4. How does your design provide security for ElectroMyCycle's network?
5. What questions will you ask ElectroMyCycle about this project as you do your work?
6. Design and document an IP addressing scheme to meet ElectroMyCycle's needs.
7. Specify which IP address blocks will be assigned to different modules of your network design.
8. Document whether you will use public or private addressing for each module.
9. Document whether you will use manual or dynamic addressing for each module.
10. What are ElectroMyCycle's most important assets that must be protected with security mechanisms?
11. What are the biggest security risks that ElectroMyCycle faces?
12. Design a high-level security policy for ElectroMyCycle.
13. Describe how you will achieve buy-in from the major stakeholders for your security policy