Bryce Baxter
CYSE 200T
March 28th, 2025
Proffesor Duvall

What are SCADA Systems?

BLUF: In this assignment, I will explore and look into SCADA systems, what they do, who it is used by, and why it is used.

What are SCADA Systems?

SCADA which also stands for Supervisory Control and Data Aquisition, are often used for monitoring and control of industrial processes such as energy, utilities, and manufacturing. Some of the key functions of SCADA include Data Aquisition, Supervisory control, Human-Machine Interface (HMI), and Communication.

SCADA System Concepts

HMI is the apparatus that gives the human supervisor the data to control the processes. The HMI information is received in the form of mimic diagrams. This means that the operator has the schematic reppresentation of the plant. The RTU (Remote Terminal Unit) is used to convert signals into electrical values, this helps the RTU control the equipment. A supervisory station is the servers and software that allow RTUs and PLCs to communicate with the proper equipment.

SCADA Security Issues

SCADA Systems are often an easy target for hackers and cyberterrorists. Even though they are physically secured and do not require a connection to the Internet, they can still be hacked. Unauthorized access to data systems is a huge issue with SCADA Systems. Another issue is packet access to networks that typically host all SCADA Systems. This means that any person who sends packets to the network is in control of it.

Conclusion

SCADA stands for Supervisory Control and Data Acquisition and is used to control physical processes. It contains multiple subsystems that help with these processes, such as HMIs, RTUs, and PLCs. Security issues have risen for SCADA because it is an easy target for

hackers. Topics such as unauthorized access to networks and packet access make using SCADA very risky and difficult.