

## *EE/CprE/SE 491 WEEKLY REPORT XY*

*1/8/18 – 1/26/18*

*Group number: 16*

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*Project title: Implementing OpenPLC's into a Cyber Defense Competition*

*Client &/Advisor: Drs. Jacobson and Rursch*

### *Team Members/Role:*

*Matthew McGill — Meeting Facilitator, Project Manager*

*Brennen Ferguson — Hardware Engineer*

*Joseph Young — Security Engineer*

*Liam Briggs — Hardware Engineer*

*Joshua Przybyszewski — Software Engineer*

*Nicholas Springer — Security Engineer*

*Val Chapman — Testing Engineer*

### ○ Weekly Summary

These weeks were mostly spent discussing and planning our schedule for the semester and regrouping where we left off. We managed to meet with our advisors and schedule an appointment members of the student committee that runs the cyber defense competition. When spinning up our virtual machines to make changes we noticed significant performance issues. We attributed these to the virtual machine's software as Dr. Rursch has noticed issues in other machines with the same software.

### ○ Past week accomplishments (please describe as what was done, by whom, when or collectively as a group)

**Matthew McGill:** Coordinated a meeting with our faculty advisors. We, as a team, met with them and discussed our current progress, as well as got some contact info for the Information Assurance Group White Team. We plan on reaching out to the President of this org for guidance on how to craft a complete CDC scenario. I also did some UI design for our Angular Dart application, and continued to read through documentation on the Factory I/O API.

**Brennen Ferguson:** Wrote some OpenPLC code and Setup Visual Studio for Factory I/O API

**Joseph Young:** Continued working in VCenter once the memory leak issue (described by Nicholas) was fixed with a reboot; this includes researching common vulnerabilities that may be injected into the system via misconfiguration or intentional installation of a framework.

**Liam Briggs:** Reinstalled Factory I/O and spent time with the scenario from last semester attempting to make it more complex and run more realistically while not changing the basic goal.

**Joshua Przybyszewski:** Added functionality and features to our client-side app in Dart.

**Nicholas Springer:** Worked on fixing an issue we were experiencing in VCenter. We believe there is a memory leak in VCenter and currently the only solution is to reboot the server. After fixing this issue, I finished the setup of the Windows Server and installed all of the necessary software. I also created the powerpoint for the presentation that we are giving next week.

**Val Chapman:** Looked into testing practices for making dart web applications. Looked into testing frameworks to allow for automatic dart testing. Started looking for test students to run our mock CDC and find interested parties.

○ **Pending issues (if applicable)**

**Matthew McGill:** Documentation on the Factory I/O API is very sparse, so it's been difficult connecting to a running instance of the software. I have been writing a series of simple requests to further troubleshoot these issues.

**Brennen Ferguson:**

**Joseph Young:** Assist Nicholas in investigating issues with the VCenter, if able.

**Liam Briggs:** Creating a large interconnected factory scenario

**Joshua Przybyszewski:** Make Client-side app more robust. Write a generator for client-side app. Create test hooks so Val can test things or something.

**Nicholas Springer:** Continue looking into potential memory leak issue in VCenter.

**Val Chapman:** Working with the White CDC team to figure out documentation needed to make passing off the product to the CDC teams easier and allow for implementation of our project into future CDC's.

○ **Individual contributions**

Team Member	Contribution	Weekly Hours	Total Hours
Matthew McGill	Planned meetings with our faculty advisors, contacted the president of the Information Assurance Group on campus, and continued development on the implementation of the Factory I/O API.	6	46
Brennen Ferguson	Wrote some OpenPLC code and Setup Visual Studio for Factory I/O API	6	50

Joseph Young	Researched previously discussed vulnerabilities for clearer interpretation in our vulnerabilities document	4	46
Liam Briggs	Improve the scenario	5	52
Joshua Przybyszewski	Made progress on web app and made changes to overall web app format	6	47
Nicholas Springer	Maintained and updated virtual machines and the teams credentials for testing	7	68
Val Chapman	Started working on documentation for CDC and working with our product. Looked into testing dart and the frameworks available.	5	43

- **Comments and extended discussion**

- **Plan for coming week**

Meet with CDC moderators and create a deliverable that connects to their standards for intuitive implementation.