EE/CprE/SE 491 WEEKLY REPORT

1/27/2020 – 2/13/2020

Group number: 12

Project title: Applying Blockchain to Energy Delivery Systems

Client &/Advisor: Grant Johnson (Client), Manimaran Govindarasu (Advisor)

Team Members/Role:
    Anthony Cosimo: Test Engineer
    Jacob Dawson: Project Manager
    Keegan Bloedel: API Architect
    Katherine Ringgenberg: UI Architect
    Steven Rein: Blockchain Architect
    Dakota Moore: Cybersecurity Manager

- **Weekly Summary**

  Continued in-depth discussions on specific formation of use cases and data models. Implemented endpoints for API and began blockchain configuration modifications to fit the NASPInet model.

- **Past week accomplishments**
  - Anthony Cosimo:
    - Worked on solving VM space issues, and also helping Katie to test API.
  - Jacob Dawson:
    - Attended a meeting with Grant regarding simulating PMU data, worked with Keegan on implementing POST, PATCH, and PUT endpoints on the API. Troubleshooted with Katie on freeing up space on the VMs and wallet issues when registering a user.
  - Keegan Bloedel:
    - Worked with Jacob to implement POST, PATCH and PUT endpoints on the api. Looked at merge requests.
  - Katherine Ringgenberg:
    - Finished testing components, began writing api calls in the ui, ran into VM memory issues (troubleshooted with Jacob), ran into

issues with certain api calls (read metric, register user) and
investigated individually
- Steven Rein:
  - Attended meeting with Grant to discuss domain objects and
  understanding TCP packets. Began and completed development of
  blockchain configuration to model the NASPInet infrastructure.
- Dakota Moore:
  - Created a small network of 3 VMs to prototype different ways of
  managing the VM's more easily. Worked on getting either
  Parallel-SSH or ClusterSSH set up to configure all of the VMsl at
  once using one CMD.

o **Pending issues** *(If applicable: Were there any unexpected complications? Please
elaborate.)*

- Anthony Cosimo: No unique issues.
- Jacob Dawson: Currently not receiving errors from smart contracts when
creating although we should be since records aren't being created. Will be
troubleshooting that this week.
- Keegan Bloedel: No errors when creating, but when we try get all it shows
that the car we created is not there.
- Katherine Ringgenberg: API endpoint /api/auth/create cannot be called
from the ui and have tried several formatting adjustments, moving on to
other api implementations and will look into this further this week.
- Steven Rein: Need to discuss with team the practicality of having
blockchain network ran locally.
- Dakota Moore: Ran into issues getting Parallel SSH to work properly on
all of the VMs. I could SSH into all of the machines at one time
successfully, but wasn't able to execute necessary commands through it.

o **Individual contributions**

NAME	Individual Contributions *(Quick list of contributions. This should be short)*	Hours this week	HOURS cumulative
Anthony Cosimo	VMs, Api testing	8	23
Jacob Dawson	Discussed above	16	36
Keegan Bloedel	Discussed above	12	28
Katherine Ringgenberg	Discussed above	10	26

Steven Rein	Researched and reconfigured blockchain network.	17	97
Dakota Moore	Prototyped and researched	8	22

- o **Comments and extended discussion**
  - ● Dakota Moore - I am currently on my planned vacation in New Orleans. My team was notified well in advance and I will be returning on the 2nd of March.

- o **Plans for the upcoming week**
  - ● Anthony Cosimo: Continue helping to test various parts of the block chain, come up with a solution to VM space issues
  - ● Jacob Dawson: Finishing POST, PATCH, PUT API endpoints with Keegan. Might begin writing a script with another team member for sending PCAP data to the blockchain.
  - ● Keegan Bloedel: Work with Jacob to finish implementing working POST PATCH and PUT API endpoints. Get a better understanding of the PCAP data that is coming in from powercyber.
  - ● Katherine Ringgenberg: finish implementing api calls in ui (may need assistance if the team wants this finished this week, as I've caught the flu), and if I have time, generate a script to free VM memory
  - ● Steven Rein: Work on stories related to the configuration of specific actor policies in the blockchain network and deploying separate chaincode for different organizations.
  - ● Dakota Moore: Maximize the amount of alcohol consumed in New Orleans, followed by coming back and starting to implement ClusterSSH.

- o **Summary of weekly advisor meeting**

Friday, 14 February - Received PCAP data and talked about possible use cases depending on latency of the blockchain.