

EE/CprE/SE 491 SDMAY-19

Weekly Report 10

11/26/2018 – 12/1/2018

Group number: 5

Project title: *Cyber Network Capture Generator*

Client : *Argonne National Laboratory*

Advisor : *Benjamin Blakely*

Team Members:

Jacob Perin - *Scribe*

Luke Tang - *Meeting Facilitator*

Collin McElvain - *Chief Architect*

Abdelrahman Baz - *Chief Architect*

Hazem Abdeltawab - *Test Manager*

Bernard Ang - *Report Manager*

Weekly Summary

This week we held our final semester meeting with Client. Open discussion was held about project struggles, such as: failed system design in backend; trouble initializing web server; students feeling disconnected from parts. This is a work in progress, but there was some light at the tunnel as we discussed moving team members around and research into new technologies. Going into next semester these tasks will require more research, however, there is still some hope. Although admittedly, this project is at risk of not being completed in time due to the technical depth in the back end system.

Past week accomplishments

As a team, we did not meet as a team but we met with the client for the final time in the semester. For the front end team, we concluded the design of the web interface with the client to start the development of the interface on the start of the next semester. We also discussed about the use of the Apache webserver with the Django Framework. For the back end team,

❖ • Bernard :

- Tried to make connections with the apache server using our mocked up interface.
- Made a few tests to send and receive data with the server
- ❖ • Jacob :
 - Research into Xen Build. Further look into using OpenStack. Hopeful development with up-to-date maintained openstack package:

nova-compute-xen: Further, **nova-compute-libvirt** that is tested against the CI Loop (well-supported in Xen)

<https://launchpad.net/ubuntu/bionic/+package/nova-compute-xen>
 - Research into possible configuration for Xen and OpenStack, documented here:

<https://docs.openstack.org/ocata/config-reference/compute/hypervisor-xen-libvirt.html>
 - Research into chef provisioning support for openstack:

<https://github.com/chef/chef-provisioning-fog>
(Fog Driver for Chef to Connect to Xen)

https://docs.chef.io/config_rb.html
(Chef Configuration to Utilize Fog Driver)

<https://docs.openstack.org/python-openstackclient/pike/cli/authentication.html>
(Chef Configuration to Utilize OpenStack Authentication Correctly)
- ❖ • Collin :
 - Finished final mockups.
 - Selenium research and how to create our scenario creation page.
- ❖ • Lucas:
 - Researched targeted and secondary consequence vulnerabilities in the hypervisor, steps should be taken to remove write executions in shared folders as well as research into detonated malware before execution to minimize the compromise of hardware.
- ❖ • Abdelrahman:
 - Had some issues connecting the Django app to Apache server (might go with Nginx instead).
 - For now, The app runs on the default server that comes with Django.
- ❖ • Hazem :
 - Final tests were undergone. Server is in a pretty good shape to enter development phase. We will start adding interface at the start of the second semester.

Individual contributions

Team member	Contribution	Weekly Hours	Cumulative Hours
Bernard Ang	Tested using Django Framework and Apache server	8	61 + 8 = 69
Collin Mcelvain	Finished up final mockup	7	55+7=62
Jacob Perin	Research into necessary configuration for openstack and chef provisioning to work with Xen	8	68 + 8 = 76
Lucas Tang	Research hypervisor vulnerabilities	7	62 + 7 = 69
Abdelrahman Baz	Server tests	7	61 + 7 = 68
Hazem Abdeltawab	Ran final tests with the server	7	74 + 7 = 81

Plan to accomplish for the next week

- ❖ Bernard
 - Begin the final production of the web interface and make sure it is able to connect with the Apache server .
- ❖ • Jacob :
 - Begin setting up server build with proposed technologies.
 - Divide server LVM up better. Should have separate partition to hold virtual machines.
 - Configure OpenStack and Chef Provision to create a dummy virtual machine.
**This will allow other team members to progress with cookbook creation and configuration option input from front end (begin connecting project)*
- ❖ • Collin :
 - Begin full testing on server with Chef and Selenium.
 - Planning out time for the next semester.
- ❖ • Lucas:
 - Finalize server build for next semester
- ❖ • Abdelrahman:
 - Run the app on the production server next semester.
- ❖ • Hazem :

- Add interfaces by the start of the second semester.