

EE/CprE/SE 491 SDMAY-19

Weekly Report 4

10/19/2018 – 10/22/2018

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 met as a whole team once in the TLA. We discussed about how the web interface will interact with the backend and what we will be returning and sending out. In the meeting, we also discussed to split into two different subteams, one handling the backend and one handling the front end. Besides that, the backend team also had a meeting later on to discuss about the drawing of wireframes and how we will be using the Django Framework to make our webpage. We will be meeting the client in the next week.

Past week accomplishments

As a team, we had a full meeting together to talk about the construction of the web interface and how it would interact with the backend. We also came up with several use cases to further narrow down the use of the webpage. The team was then split into 2 different subteams, with Bernard, Hazem and Abdelrahman handling the front-end, while Jacob, Collin and Lucas will be handling the back end. Several tasks of researching and testing the use of backend were tasked to the back-end team, while the front end team were tasked to create wireframe diagrams and come

up with a mock database to be used to test the web interface. The results of our week are posted as below :

- ❖ • Bernard :
 - Drew wireframe diagrams of the expected look of the web interface.
 - Researched on how to use the Django Framework to fulfill each functions and look of the web interface
 - Experimented with a tutorial that is similar to our expected look.
- ❖ • Jacob :
 - Performed research in to Xen Networking, bridged. Documented in readme.md in main project repository. Updated existing xen documentation for setting up a bridged network with automatic DHCP to utilize Ubuntu 18.04 Netplan.
 - Spun up sample virtual machine (Ubuntu 18.04 Server) through the libvirt manager (initial step, prior to connecting libvirt to vagrant tool.)
 - Experimented with XL Toolstack for checking status of hypervisor and obtaining information about created virtual machines.
 - Researched logical volume management, created initial logical volume group for virtual machine -- need to research into how this will work with vagrant ...
- ❖ • Collin :
 - Worked with Jake on vagrant xen connections.
 - Researched the Chef and Vagrant setup. Seems like chef client should be good, however looking into chef solo as well.
 - Helped with the vision of the front end with client as well as trying to make sense of it.
- ❖ • Lucas:
 - Finding networking solutions as well as a proxy/gateway to isolate network traffic to the network environment, referred to ISERink as a potential solution for our virtualization proxy/DNS. Upon further research ISERink is incompatible with our Xen solution and requires VMWare with the ESXi ISO image. Testing with manual proxy solutions work for internet access, but I'm not sure how secure or limiting this makes for monitoring and limiting network traffic.
- ❖ • Abdelrahman:
 - Worked with Bernard and Hazem to create wireframe diagrams for the web interface.
 - Experimented with Django framework which will be used to create the interface.

- Researched how to mock up the backend, still haven't found a solution yet
- ❖ • Hazem :
 - Designed, with the rest of the team, wireframe diagrams that will act as the templates for our project interface,
 - Used an online software to put those wireframe diagrams into context for the client to understand.

Individual contributions

(Creating this section is optional, but it is Required to include the

“Hours Worked for the Week” and their “Total Cumulative Hours” for the project for each member somewhere relevant in your report. Your individual weekly hours should be at a minimum of 6-8 hours for this course. So please manage your time well. Also, ensure that individual contributions support your claim to the weekly hours. Be honest with the reports.)

****TO BE FILLED ****

Team member	Contribution	Weekly Hours	Cumulative Hours
Bernard Ang	Researched on Xen and Puppet	7	19 + 8 = 27
Collin Mcelvain	Researched Vagrant, Chef, and Libvirt connections.	7	
Jacob Perin	Researched LVM allocation, created initial virtual machines (via libvirt), and created/ensured bridge capability by ensuring created virtual machines (dom1) could create to the internet.	7	21 + 7 = 28
Lucas Tang	Researched and tested Proxy solutions	7	19 + 7 = 26
Abdelrahman Baz	Experimented on Django		20 + 6 = 26
Hazem Abdeltawab	Wirefram diagrams design	7	36

Plan to accomplish for the next week

- ❖ Bernard
 - Use the Django Framework to come up with a runnable webpage to test usage of the mock database.
- ❖ Jacob
 - Work with Collin ensure Vagrant is able to connect to Xen Hypervisor through vagrant (accesses libxl driver.)
 - Validate front-end quality, by ensuring mock-up structures accurately represent back end.
- ❖ • Collin :

- Create the config file for chef configuration on Vagrant.
- Testing connections with Jake and Lucas
- ❖ • Lucas:
 - Finalize proxy solution and execute on main machines
- ❖ • Abdelrahman:
 - Use Django to create the wireframes created before
 - Try to come up with the mock up strategy if possible
- ❖ • Hazem :
 - Contact with client to verify wirefram diagrams design,
 - If client wishes, wirefram diagrams will be modified.