

EE/CprE/SE 491 SDMAY-19

Weekly Report 6

11/1/2018 – 11/7/2018

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, the team worked on their own to complete the specific tasks handed to them. We did not meet as a full team as we focused more on developing and testing the program. The front end team worked on making the interface of the application and making sure it is up and running while displaying items show in the previous wireframe diagram drawn. The backend team continued slow, but slowly progressing work on backend architecture. Due to some difficulty Collin and Jacob will be moving away from vagrant. Although it may be possible to connect Vagrant to Xen it has required using Vagrant incorrectly. This implementation is somewhat weak and not executable for a Senior Design project. Research is going into Openstack Nova Compute and Docker Library. Lucas has continued work into Proxy setup using modern tools and integrating IseRink into project as a Xen Domain that will route all traffic. This will fulfill future security requirements. We will be meeting with the client in the coming week.

Past week accomplishments

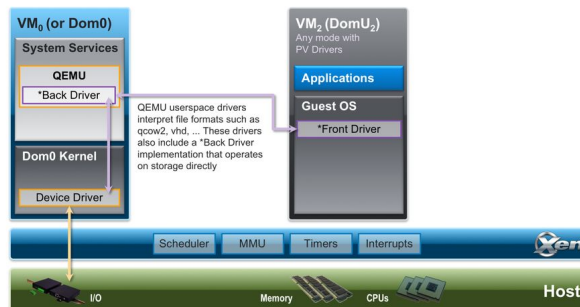
The team worked on their own specific tasks such as building up the interface and setting up the backend. We will be showing the results of the week to the client in the upcoming meeting. Tasks distributed and the outcome is shown as below :

❖ • Bernard :

- Created the History page interface that will pull information from the database based on the wireframe diagram produced last week.
- Worked with MaterializeCSS to design the web interface
- Ran the interface with MySQL
- Had issues with using myphpadmin to manage the database but went along with using the admin features provided by the Django framework

❖ • Jacob :

- Current Xen Architecture Pictured below.



https://wiki.xen.org/wiki/Xen_Project_Software_Overview

- This has proven to be difficult architecture to implement. Partially due to inexperience with virtualization techniques; Partially due to the complexity of qemu parameter initialization.
- A lot of research has gone into proper initialization parameters. More is needed to fully implement.
- Background: we initially had hoped to directly connect Vagrant which will allow us to connect to chef, et. al. as needed to define the scenario dependent builds (applications, etc.)
- Current Standing: Able to initialize virtual machines through vagrant-libvirt connection to qemu. However, the flag (-xen-create) which supposedly connects to xen backend (hypercalls) to initialize xen virtual machine does not seem to work properly.

- Read through code and found possibly useful parameters : -kernel, -initrd, -boot, -
- Attempting using flags such as: 'cdrom' to initialize using xen hvmloder (supposed to connect to qemu [qemu-dm] architecture, however, this seems to disconnect from vagrant configuration... Have to manually specify kernel, initrd, etc. most likely problematic)
- ❖ • Collin :
 - Worked with Hazem on creating web wireframes to go over the frontend of the project. As well as helping with the understanding of communication with the backend.
- ❖ • Lucas:
 - Configuration and attempted conversion of iseRINK from esxi to xenserver using starwind v2v converter (continued attempts due to ongoing incompatibility issues)
 - Squid proxy server installed and configured as a potential second option
- ❖ • Abdelrahman:
 - Worked with Hazem on creating the interface of configuring the VMs page. Implemented the basic template of the page with limited functionality
- ❖ • Hazem :
 - Participated in creating the web interface that the back-end will be based upon. The web interface was constructed via the wireframe diagrams that the client wanted to be added in the design.

 - Mocked the database by adding sample data to the main database for the web interface and fetched data to see how final output will look like. Data was fetched fine. Everything worked perfectly. This is the progress so far for the front-end development of the project.

Individual contributions

Team member	Contribution	Weekly Hours	Cumulative Hours
Bernard Ang	Worked on creating the Web interface with Django Framework	9	32 + 9 = 41
Collin Mcelvain	Created new wireframes according to discussions	7	29 + 7 = 36
Jacob Perin	Continued research into Xen and Qemu connection through vagrant automation tool, challenging...	8	36 + 8 = 44
Lucas Tang	Attempted iseRink conversion and setup of squid as a secondary option	8	33 + 8 = 41
Abdelrahman Baz	Created the basic template of the interface responsible for creating the VMs	7	32 + 7 = 39
Hazem Abdeltawab		7	43 + 7 = 50

Plan to accomplish for the next week

- ❖ Bernard
 - Change the look of the web interface according to what will be discussed by the client.
 - Connect the whole web interface together, using the same mock database.
- ❖ Hazem
 - Change the web interface design from Django to Apache to see how changes would appear on the web interface. Include Php files on Apaches, as they were unable to be added in the Django framework.

 - Connect Apache of front-end with Apache on back-end to make sure we can have a connection for the final design.
- ❖ Abdelrahman
 - Add more functionality to the interface of configuring the VMs if possible

- Search for possible more effective kind of server to use

- ❖ Jacob :

- Continue Qemu + Xen + Vagrant Setup ... Aka use proper parameters in qemu to forward properly to Xen ... Currently Qemu does not seem to be speaking to Xen with Hypercalls...

-

- ❖ • Lucas:

- Continue attempted conversion of iseage
 - Squid proxy server compatibility test
 - Configure potential tertiary Streisand option