

EE/CprE/SE 491 SDMAY-19

Weekly Report 1

2/2/2019 - 8/2/2019

Group number: 5

Project title: *Cyber Network Capture Generator*

Client : *Benjamin Blakely*

Advisor : *Dr. Thomas Daniels*

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

Team has started with a kick-off meeting with our client at ANL. This had to be done online via blue jeans application due to weather constraints. Client encouraged us to organize the project. This recommendation has been taken seriously. Team members will be encouraged to open “Git Issue”, to allow the client and other team members more visibility into each others works. In addition, Collin McElvain has been tasked with clearing conflicting design decisions between frontend and backend architecture.

Lucas has began the process to design a truly isolated network. To prevent possibly malicious guest machines from access to outside web. This will result in a virtual machine running PFSense and Squid to filter web traffic from inside the isolated network. Jacob is involved in the WIP Architecture for automated deployment of virtual guests for deployment.

For the frontend, we met multiple as a team to work on organization of the interface, as well as drawing more diagrams to finalize the final look of the web interface. We also discussed about the databases that we can use to work with our project.

Past week accomplishments

- ❖ • Bernard :
 - Finalized the design with the front end team
 - Create the new pages that are needed and required for the web interface
- ❖ • Jacob :
 - Creation and testing on libvirt networking architecture.
 - Isolated Network Research
 - NAT, Routed Network Research
 - <https://wiki.libvirt.org/page/VirtualNetworking>
 - Note: Currently configured NAT network for static addressing in virtual network. With addition routed network for current openstack configuration. This is due to each box for openstack requiring two NICS
 - Research into how this works over a bridged network (differs when virtualized vs. separate host distributed network)
 - Design and creation (started) of an openstack architecture.
 - Slow and heavily documented process.
 - Described here: <https://docs.openstack.org/install-guide/index.html>
 - Research into minimal IaaS deployment (which services necessary)
 - “Config” Options to setup ... This is a long process
 - Host/Compute Node Networking
 - ◆ Simulation with local host and virtual machine
 - Ubuntu Box Configuration
 - Ongoing: Research into “best practices” when running a hypervisor
 - Resource(s) can be consumed to a point that causes the computer to crash ...
 - https://wiki.xenproject.org/wiki/Xen_Project_Best_Practices
 - Queens Specific Openstack Setup (Recommended by most up-to-date Ubuntu 18)
- ❖ • Collin :
 - Began looking into current design process issues with reporting and version control.
- ❖ • Lucas:
 - Creation of 2 xen boxes and openWRT box with attempts to network the boxes on the host machine using virtmanager.
- ❖ • Abdelrahman:
 - Started looking into how to use Apache and connect it to Django. Apache is our server of choice to serve our web application.

❖ • Hazem :

- Integrated MySQL instead of SQLite in the database development of Django Framework.

Individual contributions

Team member	Contribution	Weekly Hours	Cumulative Hours
Bernard Ang	Created new pages according to new requirements	5	5
Collin Mcelvain	Started researching issues with VC and design	3	3
Jacob Perin	Local Host Setup, Virtual Networking Design, OpenStack Setup, and WIP Automated deployment	12	12
Lucas Tang	Virtual network progress	8	8
Abdelrahman Baz	Server connections	6	6
Hazem Abdeltawab	Database connection	6	6

Plan to accomplish for the next week

❖ Bernard



❖ Hazem Abdeltawab

- Test Front-end connection to database

❖ Jacob Perin

- Deploy Virtual Machine through Openstack (Fully Automated w/ Services)
- Configure Chef Provisioning on top of Openstack. Make use of fog driver to connect to openstack, and for custom automated machine creation and configuration.

❖ Collin McElvain

- Begin talking with frontend about using GIT issues and cleaning up branches.

- ❖ Abdelrahman Baz
 - Get Apache working with our Django project
- ❖ Lucas Tang
 - Create networked boxes on the host machine