

## **Milestone 7: Final Report**

I enjoyed working on the project assigned to me during my fellowship here at Ciara. Over the course of the Amlight ExP project, I learned many new concepts, starting off with understanding networking better and the difference between netflow and sflow, as well as some new technologies such as Elasticsearch, Logstash, Kibana, and Grafana.

Throughout the course of the project, I had to keep scalability and efficiency in mind because of the large number of packets we collect per day. This was something I had to be aware of from the beginning, when I had to research what database would be the best for us to utilize when creating the visualizations we needed for the NSF reports.

I started off by working in a test environment provisioned for me which is where I was able to configure everything to my needs. As my work became more concrete, I was given a dedicated server which I set up alongside the test environment, and modified when I saw that the changes in test were sustainable and ready to be ported to production. The server setup was a new experience for me because although I had installed distributions of Linux before, I never had to really think about the configurations I used, as to where this time around, I had to partition the hard disks, install RAID in case of disk failure, and configure other things according to our needs.

Afterwards, I began working on the public dashboard we needed to visualize the data we had been collecting. These visualizations displayed incoming and outgoing traffic rates, daily traffic rates, top talkers, and packet collection rate and are useful for the end of year reports that we have to compile for the NSF.

For access to each of the milestone reports, refer to the following:

- Milestone 1:
  - <https://docs.google.com/a/fiu.edu/document/d/1fja7uMWpe9FKokqriaR8-QAIMD2gr1hbq5vcjsiL748/edit?usp=sharing>

- Milestone 2:
  - [https://docs.google.com/a/fiu.edu/document/d/1ZrK0fF8vVJ8OFMLLc8j\\_CoArYEIJhmJC9G5eWGNFK-c/edit?usp=sharing](https://docs.google.com/a/fiu.edu/document/d/1ZrK0fF8vVJ8OFMLLc8j_CoArYEIJhmJC9G5eWGNFK-c/edit?usp=sharing)
- Milestone 3:
  - <https://docs.google.com/a/fiu.edu/document/d/1wS3YOhzPTIejXHxaaaAmfzCyF68mpxgmvQd8IM5mBL4/edit?usp=sharing>
- Milestone 4:
  - [https://docs.google.com/a/fiu.edu/document/d/1VorPkoI0v7jwyPRzf0PR9vOD4J\\_qCb37pWRINokA-O4/edit?usp=sharing](https://docs.google.com/a/fiu.edu/document/d/1VorPkoI0v7jwyPRzf0PR9vOD4J_qCb37pWRINokA-O4/edit?usp=sharing)
- Milestone 5:
  - <https://docs.google.com/a/fiu.edu/document/d/1Z6zbhBU4DBHday1uxR0lnlICNr4Vnjtf2KVcHI78gzA/edit?usp=sharing>
- Milestone 6:
  - [https://docs.google.com/document/d/1uPPaCPTKaNAQ82otpm\\_k5Owj3u9hRygRJVadnjkyiAQ/edit?usp=sharing](https://docs.google.com/document/d/1uPPaCPTKaNAQ82otpm_k5Owj3u9hRygRJVadnjkyiAQ/edit?usp=sharing)