Progress Iteration 4

- **New Look and Feel:** One of the main focuses of this iteration was refactoring the entire look and feel of our application. This included writing a CSS structure from the bottom up, which allows our application to be much more readable, malleable, and all around better looking. This includes writing key frames to make animations, such as hovering over links animating them, and text animating when you enter a page. As well, many fields which could grow very large are wrapped within scroll tables, in order to increase visibility and allow our simulation to handle large amounts of devise and networks.

- **Re-wrote Simulation Creation:** Previously, the way we created simulations was flawed in multiple ways. Previously, if while creating a simulation, the user edited the number of networks or devices they would be creating, this would cause multiple errors within the simulation. As well, previously fields would be able to be left blank, or entered invalidly, for example a letter could be entered as a number. This iteration, we completely overhauled everything in create simulation. Now this problems are gone, and our create simulation feature is much more streamlined.

- **Automatic Test Scripts:** The large feature which we tackled this iteration was the introduction of automatic test scripts. To do this, we created a structure for the test script so that a user can create one. Test scripts are able to randomly move users between devices, connect and disconnect networks, and have devices interact with the replicated data types in the simulation. These actions are performed according to various specifications outlined in the test script.

- **Allow Users to Retain Their Tokens When Closing a Browser Tab:** Previously, our application had been designed in such a way as to allow different browser tabs to represent different devices. This came at the cost of a user losing their token when that browser tab is closed. Upon speaking with Dr. Fiech, he stated that it was more important for a user to retain their token. Therefore, this iteration we ensured that a devices token is stored in local history, and therefore is retained even when the device is turned off.

- **Devices Able to Exist Outside of Networks:** During the previous iterations, we did not allow devices to exist outside of networks. This iteration we allowed devices to exist outside of any networks.

- **New Example Applications/Test Scripts/Replicated Data Types:** In order to show off the power and malleability of the way in which we designed replicated data types, applications, and test scripts within our simulation, we created multiple examples of each of these, which the user can view and use as a template. These examples include an application which we are most proud of,

which allows you to search for and view different you-tube videos and like them using a replicated data type.

- **Fixed Bugs:** The main focus of this iteration was to fix all bugs which previously existed within our simulation. This included fixing the following bugs:
    - **Topology Not Loading:** In the previous iterations there existed a bug where occasionally, the topology view page would not load and one would have to restart the server. This is fixed.
    - **Topology Not Able To Interact With:** In the previous iteration, there existed a bug, which was derived from the event log views, which would cause the topology not to be able to be interacted with. This has now been fixed in this iteration.
    - **User Able To Manipulate Topology Within Event Logs View:** In the previous iteration, it was possible, occasionally, to edit the network topology within the simulation history view. This was a big problem, as this would be editing a topology which was not current, and would cause large problems with our simulation.
    - **Repeated Uploads of a Single Replicated Data Type/ Application:** In the previous iteration, there existed a bug where if, after uploading an RDT or application, one could press the “upload” button again and the same RDT or application would be uploaded, rather than a new one. In this iteration, this is fixed.