Short Demo: *ResiliNets TopView*

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The analysis of residential and commercial L1 and L3 networks is a very daunting task. The sources of this network data provide you with a list of all the nodes in the networks and an adjacency matrix to show you how all the nodes are linked together to form the network, but it is very difficult to visualize and analyze the networks when they are in this form. A tool must be created to allow researchers to be able to see the networks in the way they actually appear when they have been built out, so that they can test the resilience and other metrics of the network. The creation of the ResiliNets TopView website aims to do just that. It will allow researchers and analysts to easily visualize computer networks on a Google Maps interface, and provide them with important network statistics that will allow them to further their research. Revision one of the TopView website (V1) already exists, but for researchers to be able to fully utilize the tool, a second revision (V2) must be created with several improvements. To begin we used the V1 website to attempt an analysis and a visualization of several networks to grasp what improvements needed to be made in the V2 website. Several of the possible improvements were: the ability to easily add networks into the website to allow for easy scalability, dynamic loading of the networks for the user e.g. only loading networks when the user wants them, and a redesigned interface to allow the user to more easily do what they wanted with the website. Maintaining all of the functionality of the V1 website was also a top priority as those features had already been vetted as essential by various network researchers. We designed the V2 website with all of the above features in mind and also many other that we discovered along the development process. The V2 website has the latest revision (v3) of the Google Maps interface integrated into it to allow simplistic visualization of all networks. It takes on a minimalistic design style of hiding all of the tools of the website away so that the focus can be on the map with the networks. It also load the networks dynamically when the user requests them to take the strain off of the client system and will not bog it down with transferring hundreds of networks to the client. It is also easily scalable from the approximate three hundred networks that are in the website right now to several thousands of possible networks all across the world. All of these features are the main foundation of the V2 website, and it represents a significant increase in the functionality from the V1 website. The V2 website is now a very effective tool for networks researchers that can aid them in the analysis of L1 and L3 networks alike. It will continue to evolve as a network analysis tool with bug fixes and new features to get better, but in the meantime it is a very effective network analysis tool and a very successful evolution from the V1 website.