# Network Visualization Tool (NVT) Synopsis

## Overview

While working on one of the earlier class assignments that included examining a PCAP file to answer various questions about certain network activity, I discovered that there is not an easy to use and effective tool to visualize the network data. Being able to quickly visualize captured network data and drill-down into the data without an in-depth understanding of tcpdump or WireShark filters would be useful when conducting analysis of the data. As the examiner does not necessary desire to become an expert in using a specific tool but rather in extracting useful information from the data, ease of use and a low learning curve are desirable qualities in such a tool.

## Objectives

- Written in Python, HTML, and JavaScript.
- Utilize the D3.js JavaScript library which allows manipulation of HTML documents based on the data provided:
    - "*D3 helps you bring data to life using HTML, SVG and CSS. D3's emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation.*[1]"
- Import feature to convert supplied PCAP file to JSON format that can be used by the D3 library.
- Browser-based tool to take advantage of common interface.
- Standalone localhost server using Python to reduce installation and setup time.
- Allow user to drill-down into network data.
- Visualization of useful statistics such as network communications based on local host and port, remote host and port, and protocols.
- Extensible framework so that additional visualizations can be added in the future.

[1] http://d3js.org/.