Network Load Balancing Visualization

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CPE 400

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Overview

Load balancers exist to distribute incoming traffic on a network to servers supporting an application. The load balancer's job is to distribute client loads in such a way that servers do not experience degraded performance caused by load or other factors. A load balancer can use one of many algorithms to route client requests. This project will attempt to simulate and display how these algorithms work.

Goals

1. Simulate how the following load balancing algorithms work:
    Least Used/Most Frequently Used
    Lowest Latency
    Enforced
    Additional algorithms and group created algorithm if time permits.
2. Display the simulation in a graphical way
3. Learn and analyze different load balancing scenarios

Specifications

- Simulations will be done utilizing the following technology stacks:

1. Javascript
2. HTML/CSS
3. HTML5 Canvas
4. Snap.svg (javascript)

Roles

- Benjamin Nicholes
    - Research and Development of algorithms, with a focus on the front end visualization. Support of documentation.
- Martin Revilla
    - Research and Development of algorithms, with a focus on back end simulation. Support of documentation.
- Meliton Padilla
    - Research and Development of algorithms, with a focus on back end simulation. Support of documentation

Milestones

I. Successful understanding of load balancing algorithm.
II. Successful implementation and simulation of the majority of simulations.
III. Successful visualization of simulations.