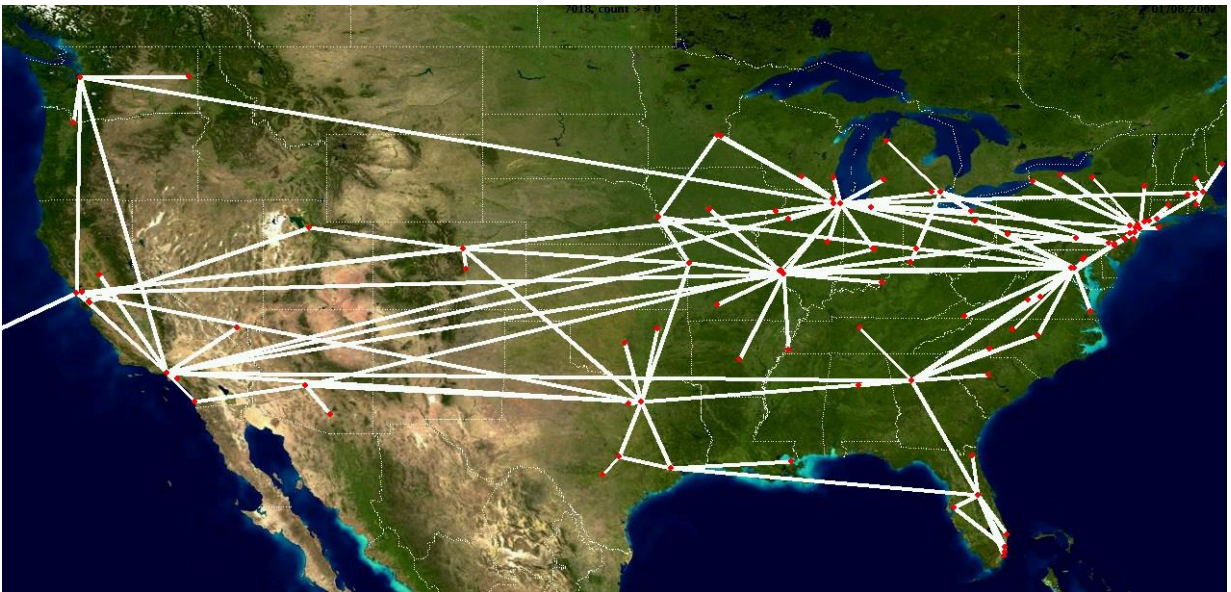# ISP Mapping using RocketFuel Technique

Abstract:

Real Internet Service Providers (ISP) topologies today are not publicly available, since ISPs generally regard their router-level topologies as confidential. Some ISPs publish simplified topologies on the Web, but these lack router-level connectivity, Point-Of-Presence (POP) structure and are in most cases out of date.

The RocketFuel technique presents a measurement algorithm to infer high quality ISP maps while using as few measurements as possible. The RocketFuel is based on TraceRoute results and uses BGP routing information to choose only those traceroutes that are likely to transit the ISP being mapped. It also suppresses traceroutes that are likely to yield paths through the ISP network that have been already been traversed. These two techniques reduce the number of traces required to map an ISP by three orders of magnitude compared to a brute-force, all-to-all approach, without compromising on the accuracy.

Goals:

Implement the RocketFuel technique in Dublin TraceRoute tool (Open Source). Map the top 5 ISPs in Israel (012 Smile, 014 Bezeq International..) , 2 ISPs in Europe and 2 in US. Mapping should include for each ISP the following online updated items:

a. Backbone Topology on a map.
b. Number of routers, links , POPs and average latency.

Requirements:

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C++, Python