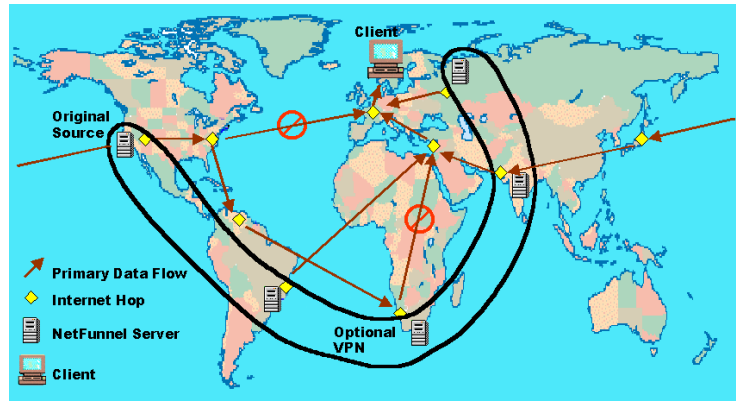


Networking and NetFunnel™

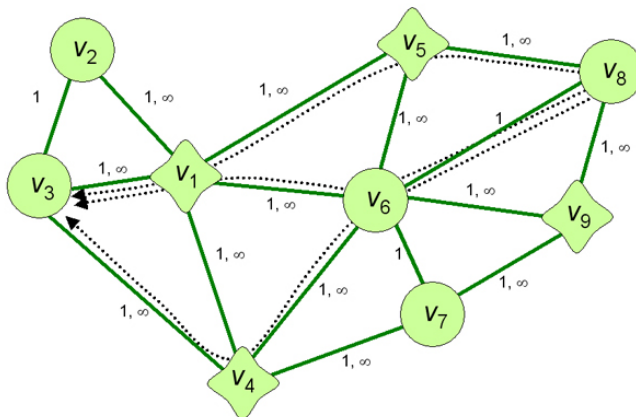
OpCoast is developing several new, patent-pending technologies to address the problems of routing and quality of service (QoS) in wired and ad hoc wireless networks supporting military, emergency, law enforcement and any other critical communication.

NetFunnel™ is a patent-pending wide-area congestion avoidance and QoS technique. Fully compatible with the existing Internet core and protocols, NetFunnel provides dynamic packet delivery using what might be called ‘overlay’ routing from a set of collaborating hosts that form the ‘Rim.’ As congestion dynamically arises, packets are re-routed via the Rim hosts such that the clients are completely unaware that re-routing took place. This allows smooth delivery of latency-critical packets and helps to prevent transmission protocol timeouts, etc. Since the method exploits dynamic re-routing, content replication is not required, thereby allowing database-driven sites to remain ‘in one place.’



NetFunnel Operation

Our new, patent-pending *multi-state routing technologies* can be used with NetFunnel to efficiently precompute multiple routes as well as routing other application areas. Our multi-state, dynamic shortest path algorithm (**MSD-SPA**) efficiently finds shortest paths in networks that may have failed links or links that depend on environmental or control conditions. Efficiency is achieved by both leveraging dynamic programming and only finding solutions for the set of ‘dominant states’ that covers any possible edge metric setting for the graph. The routine can be used to efficiently compute all possible routes for all possible network conditions including link or node failures.



Multistate Network Solution

Another application of the algorithm addresses wireless systems that utilize *directional antennas*. Since link connectivity and quality changes based on antenna directional state, solving the multi-state routing problem is essential to route determination and antenna control. This application of MSD-SPA has been documented in our *IEEE MILCOM'04* paper entitled “Efficient Routing In Ad Hoc Networks With Directional Antennas” which can be downloaded at our website.



www.OpCoast.com

For further information, please contact:

OpCoast
1101 Richmond Ave, Suite 103
Point Pleasant, NJ 08742 USA
info@opcoast.com
732 598 5342