Topology Mapping of PerfSONAR data

Status

The working model framework can be downloaded from attachments.

Background

PerfSONAR is a distributed network monitoring protocol that utilises the power of XML and Web-services. In this realm, it is very important that network managers and users can get a feel for the data that the the services provide.

This project focusses on developing advanced visualisation tools that will leverage the power of PerfSONAR such that Network Operation Centers, Network Managers and others can quickly, efficiently and logically drill down to understand network performances etc.

The backend of the PerfSONAR suite will encompass network measurements from Internet2, ESnet, GEANT and various other ISP's throughout Europe and the rest of the world.

Aim

The aim of this project is to implement the visualization of PerfSONAR network topology. Idea is to gather topology related information from multiple PerfSONAR measurement archive and build and map of the topology based on that information.

Starting Code

The Client API will be provided to the student pursuing this project. The detail description and examples from the perfSONAR Client API can be found here. The API require Java JDK 1.6+

Deliverables

1. Plot the perfSONAR interfaces on the world map using graphing API JUNG.
   a. The working model will fetch the list of interfaces from Measurement Archives.
   b. Fetch the latitude and longitude of an interface from GEOIP or DNS LOC. The Lat/long fetch from DNS LOC code is available.
   c. Convert the lat/long into x,y pixel value of the map. (Sheryar and Faran will provide help)
   d. Plot the interface with a small icon on map.
2. Implementation should be completed based on design patterns and should use Object oriented approach.

Further Reading

PerfSONAR
Lookup Services
Mona Lisa
NMWG

Contacts

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