

Lightpath Planning and Monitoring Tool

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This open standards based tool is specifically targeted to hybrid networks and lightpaths. It is in daily use on SURFnet6 and NetherLight. All information is automatically retrieved from the network elements, so there is no need to add new lightpaths to a configuration file. An NDL network topology file is generated from this information. Newly provisioned lightpaths appear automatically in the list of all monitored lightpaths.

<http://nrg.sara.nl/>
<http://nrg.sara.nl/TL1-Toolkit>
<http://nrg.sara.nl/ndl>
<http://noc.netherlight.net/>

Funded by SURFnet and GigaPort.

Lightpath Planning in SURFnet6

The planning tool is used to find (protected) paths in the hybrid SURFnet6 network. The planning tool asks for two end ports, the capacity and whether protection is needed. A constrained based SPF algorithm is used to find a path between two end ports. As result a list of network elements is given in topological order together with timeslot information. These resources can then be reserved in a network state database and later provisioned.

Lightpath Monitoring on NetherLight

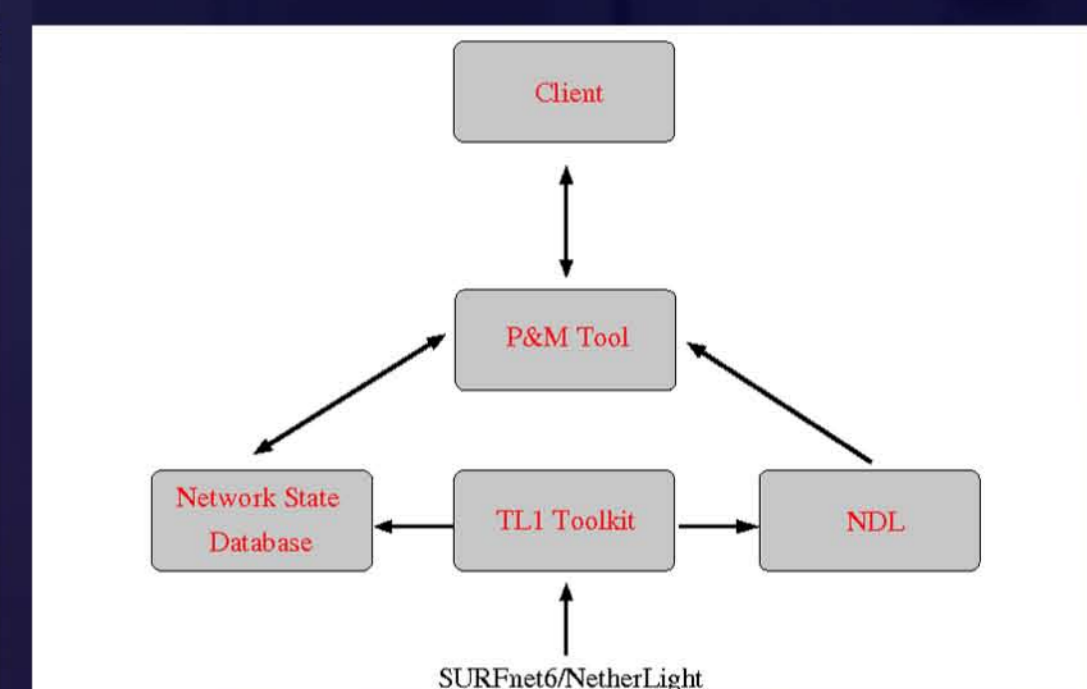
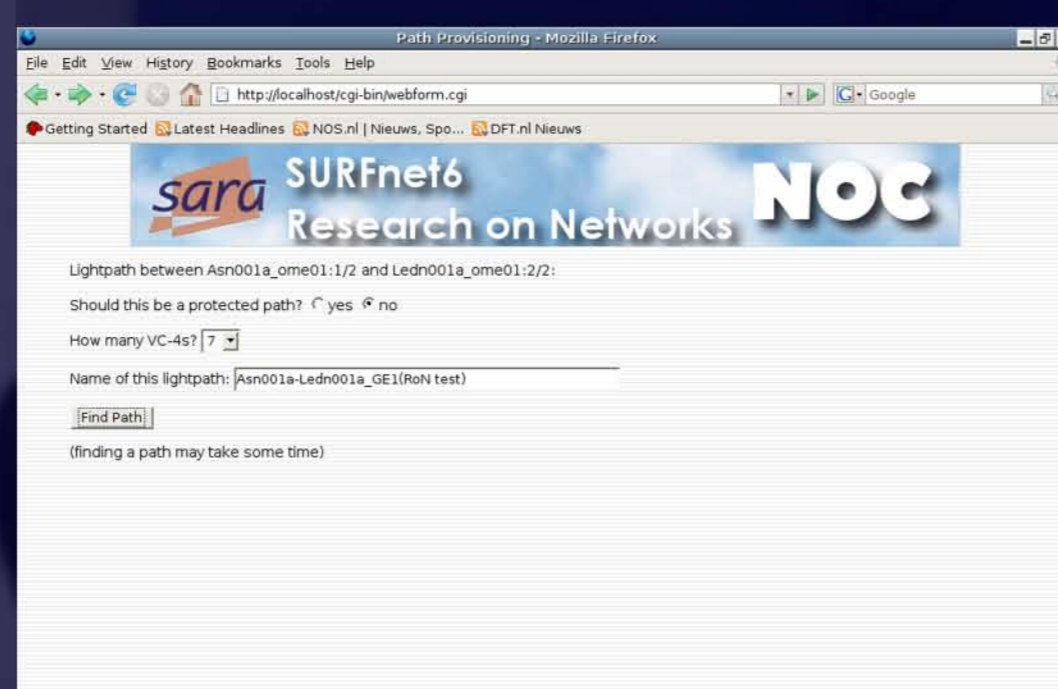
The TL1 Toolkit is used to periodically retrieve alarm and crossconnect information from the network elements. The alarms are then correlated to the lightpaths and as a result a list of lightpaths is generated with corresponding status information. This list gives an overview of all the lightpaths with a status of up or down. A detailed view gives a list of all the network elements of a lightpath, the interfaces and the timeslots used. It also shows on which interface an alarm is present and a description of the alarm.

Planning and Monitoring Tool Architecture

TL1 Toolkit: The TL1 Toolkit is a Perl Module written by SARA and provides an easy interface to TL1 based equipment. It hides the sometimes complex and difficult to understand TL1 commands and output from the user.

NDL: The Network Description Language (NDL) framework is being developed by the University of Amsterdam. It is a formal description of a network and is based on RDF (Resource Description Format), which is a semantic web technique.

Network State Database: The Network State Database (MySQL) is used to store information about the network, like crossconnects and alarm information.



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