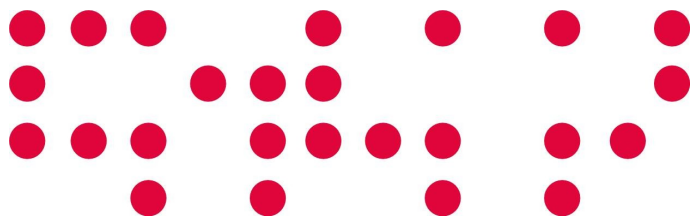# Topology Service
Overview of current Status & Installation

Ulisses Alonso
Cándido Rodriguez

{ulisses.alonso, candido.rodriguez}@rediris.es

11st January '07. Cambridge

RedIRIS

Índice

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

red.es

Overview of the Service

Basic use cases

- Topology visualization
- Provide a global vision on the network and its status, across several domains: basic information for planning, design, optimization

Targeted Fuctionality

- Service storing perfSonar services' topology information:
  - One Topology service holds information for each domain.
  - Topology services are located through Lookup Service.
  - Archive network elements' information holding graph information.

- Data hold in the database
  - Network elements and basic information
  - It's interfaces, layer 3 and basic layer 2 information

- Implemented using NMWG's XML schemas and perfSonar API

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

red.es

How does it work? Deployment diagram

• ToS service servers register to LookupService (one server per administrative domain) in order the client can locate ToS servers.
• Clients can:
  • Download all or partial* topology information
  • Register from being kept informed when a change happens.
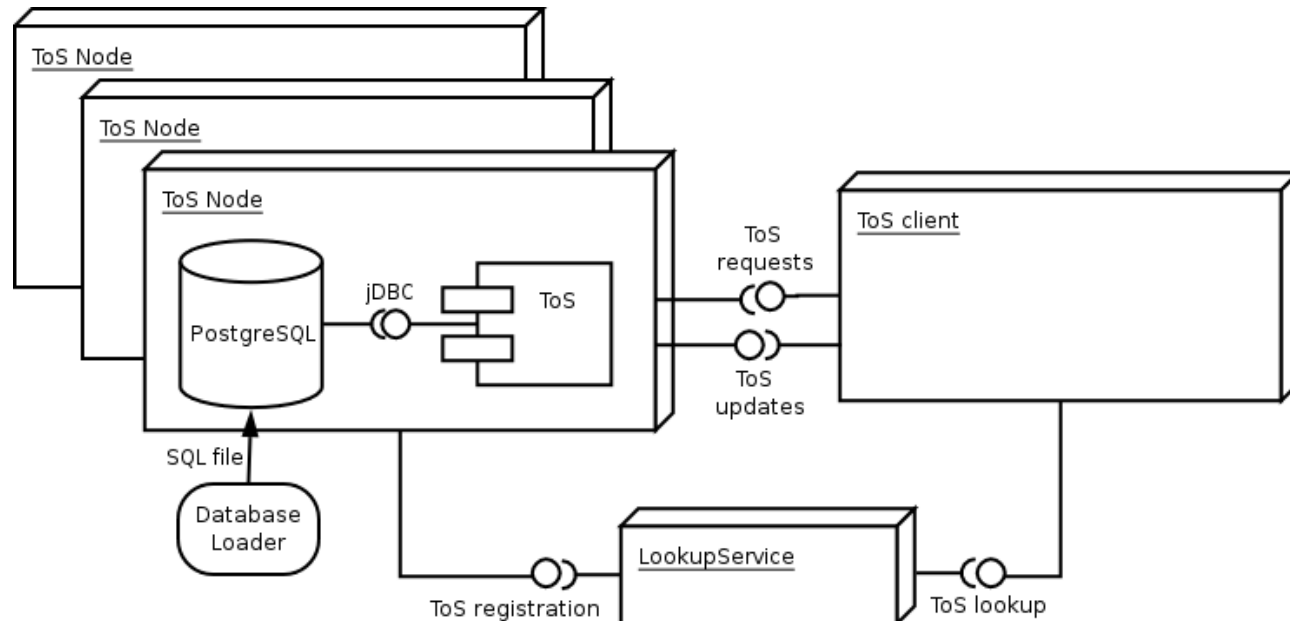
Client-Server interaction

Message exchange: collaboration diagram

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

red.es
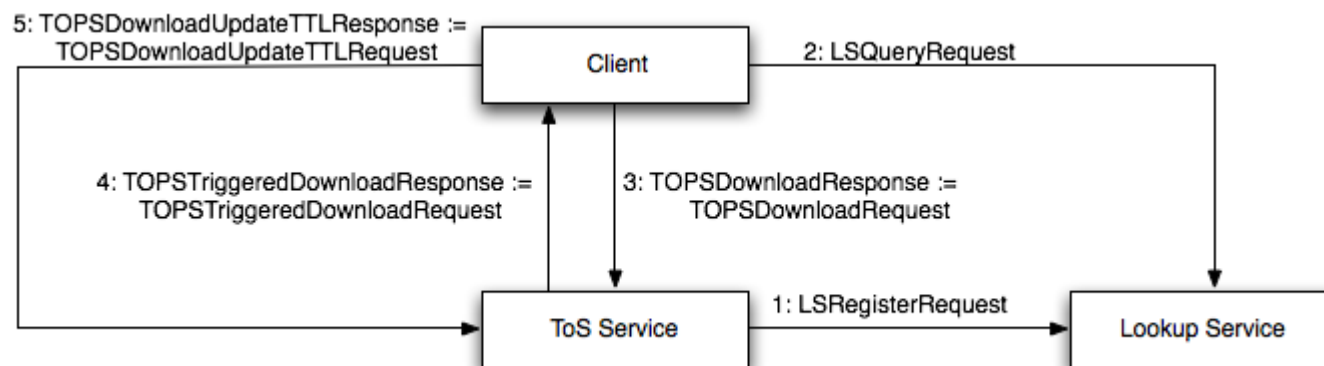
Installation and checking the service

RedIRIS

Installation from scratch* (PostgreSQL, Java, Ant prerequisites)

Download the source (currently from a separate branch)

```
$ svn co https://svn.perfsonar.net/svn/perfsonar/branches/ulisseskan
```

Change to the appropiate directory

```
$ cd ulisseskan/ant/
```

Configure it, thinks to know in advance:

• Tomcat configuration, if already existing configuration
• LS URL
• JDBC configuration

```
$ ant -f build-tops.xml configure
```

Additional questions and optionally download Tomcat

```
$ ant -f build-tops.xml pre-install
```

3. Defined use cases & implentation

Download perfSonar precompiled libraries and JDBC driver for postgreSQL

```
$ ant -f build-tops.xml libs-tops
```

Build the topology service

```
$ ant -f build-tops.xml build
```

Deploy the service

```
$ ant -f build-tops.xml deploy
```

That's all!

BUT REMEMBER: Java, Ant, PostgreSQL must be installed be

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

red.es

Checking the service

Perform a full database download:

```
$ ant -f build-tops.xml run-tops-client
```

Check the output and don't trust the `BUILD SUCCESSFUL` message. If something looks wrong:

• Check the URL mentioned in the message in a browser:

```
[java] End point: http://localhost:8080/perfSONAR-ToS/services/TopologyService
```

• Check the output of the service specified in the URI (and its timestamp):

```
[java] Response file: /home/ulisses/tmp/tmp2/ulisseskan/schema/example-
instances/perfSONAR/TOPS/test/TOPSDownloadResponse.xml
```

• Check the log files:
   • tomcat: <installation directory>/logs
   • ToS   : <installation directory/log

RedIRIS

Status & Roadmap

4. Status & Roadmap

- Implemented basic functionality
  - ToS registration in Lookup Service
  - Full Database download

- Designed messages for all defined interactions
  - Partial download functionality
  - Client registration for ToS triggered updates
  - Client keealives for ToS triggered updates

- Documentation uploaded to the wiki
  http://wiki.perfsonar.net/jra1-wiki/index.php/Topology_Service

- cNIS will replace ToS and provide more functionality, first prototype expected due to MAY '07.

Thanks for your attention

Questions or Feedback?

MINISTERIO
DE INDUSTRIA, TURISMO
Y COMERCIO

red.es

Red IRIS