



Database output for Freimap

Google Summer of Code 2010
WCW 2010 - Berlin



Who am I

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Name: Stefano Pilla

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Degree in Computer Science

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<http://wiki.ninux.org>

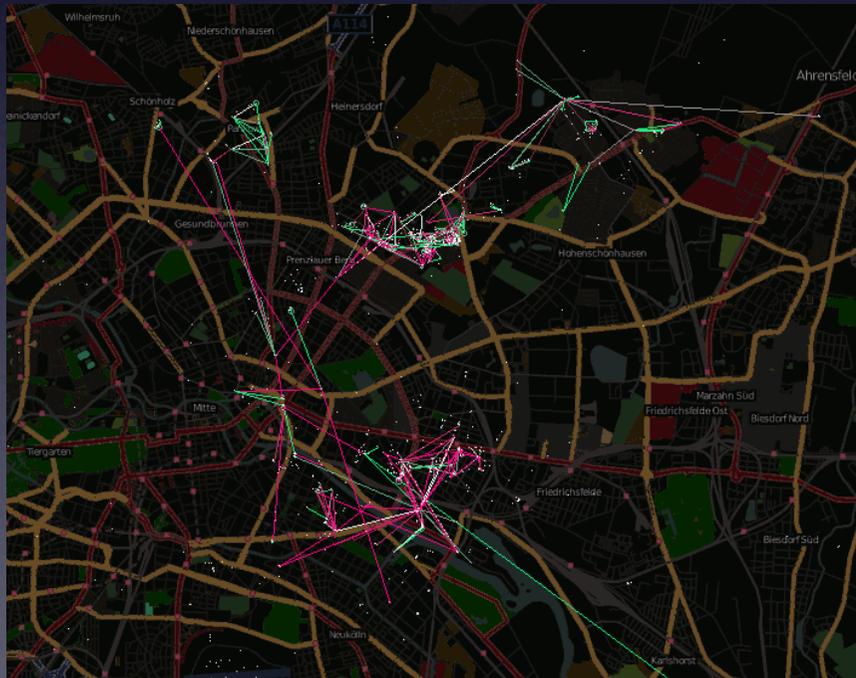
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Freimap is an Open Source visualization and analysis framework for (most) mesh networks, such as for example Freifunk.net. It can read many different data source and display them as different layers.

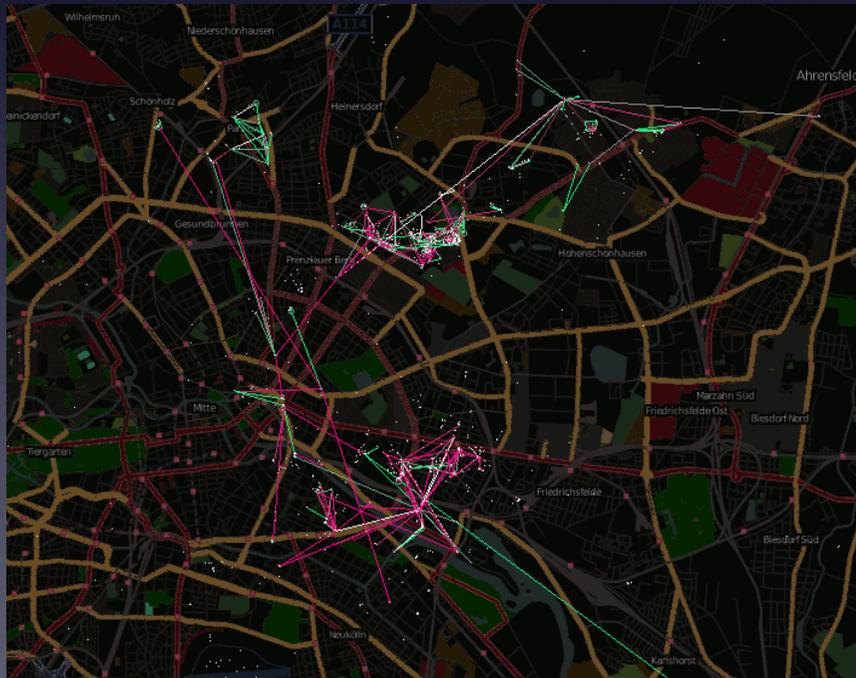
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Is a Java based application

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Is a Java based application

Completely manually coded

“New” Freimap

GSoC2009/2010

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Created with Netbeans IDE

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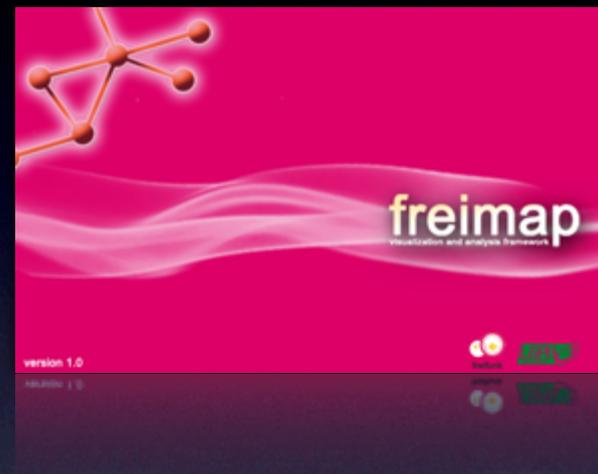
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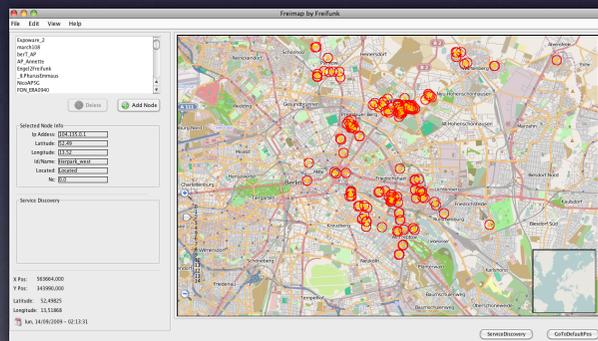
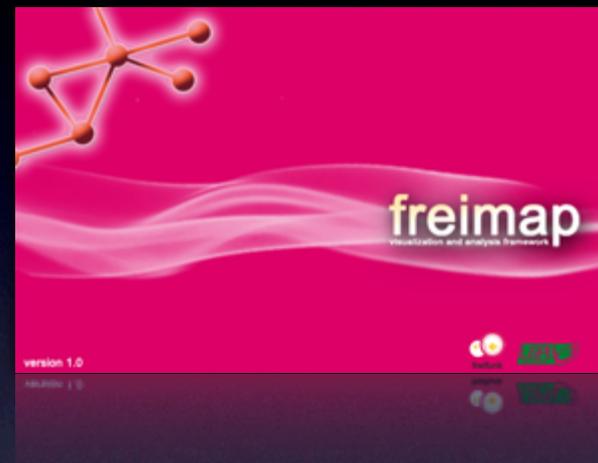
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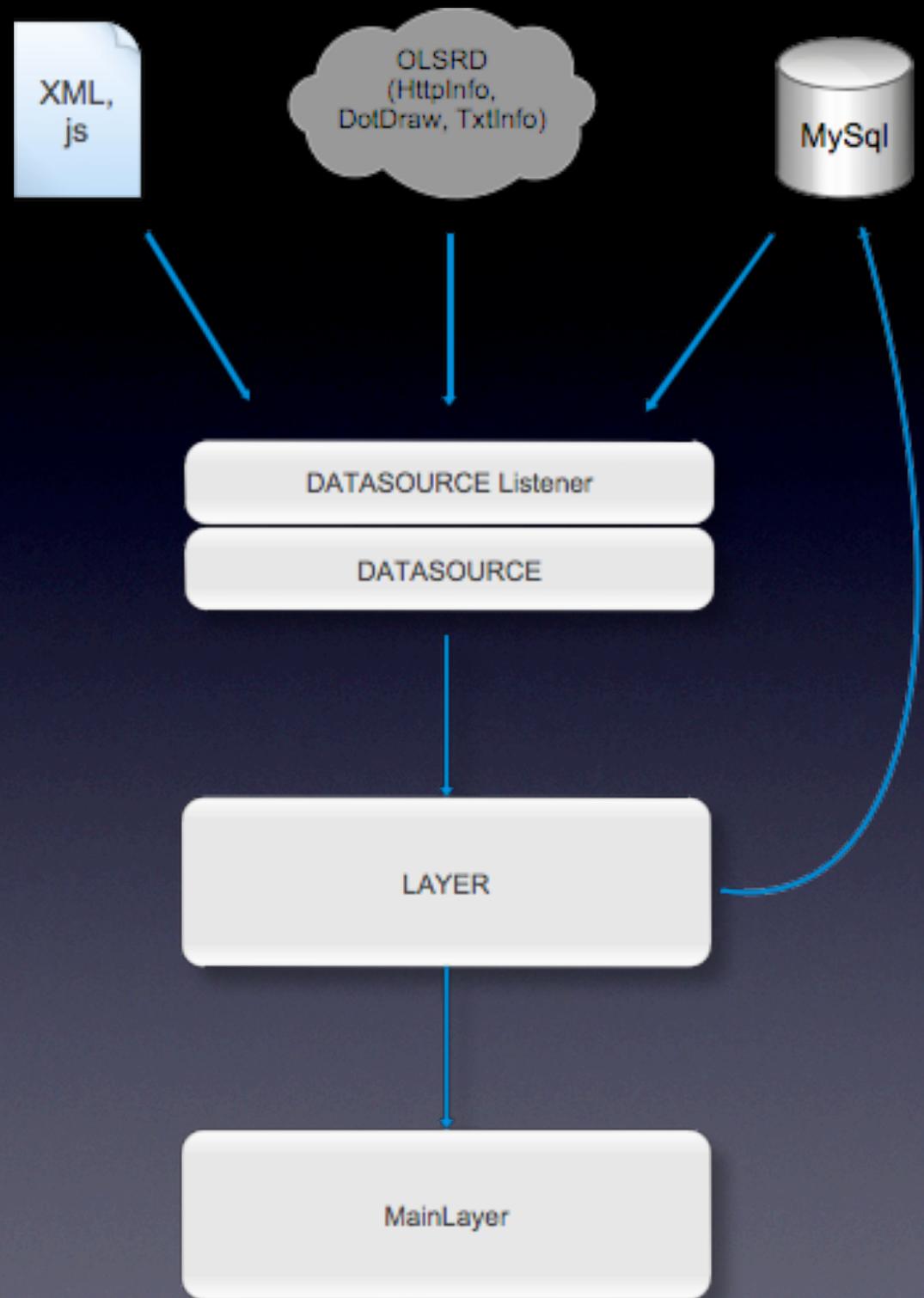
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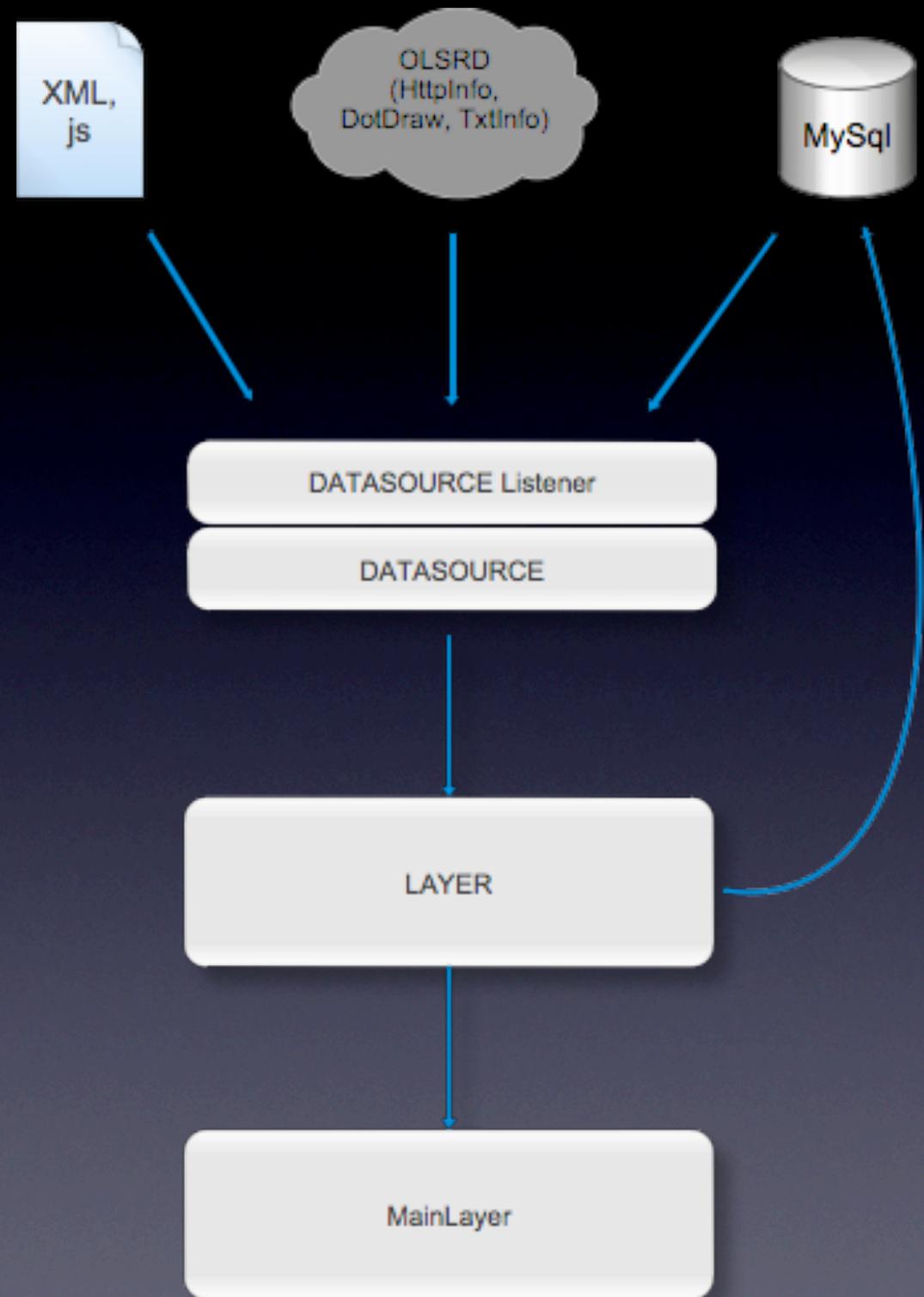


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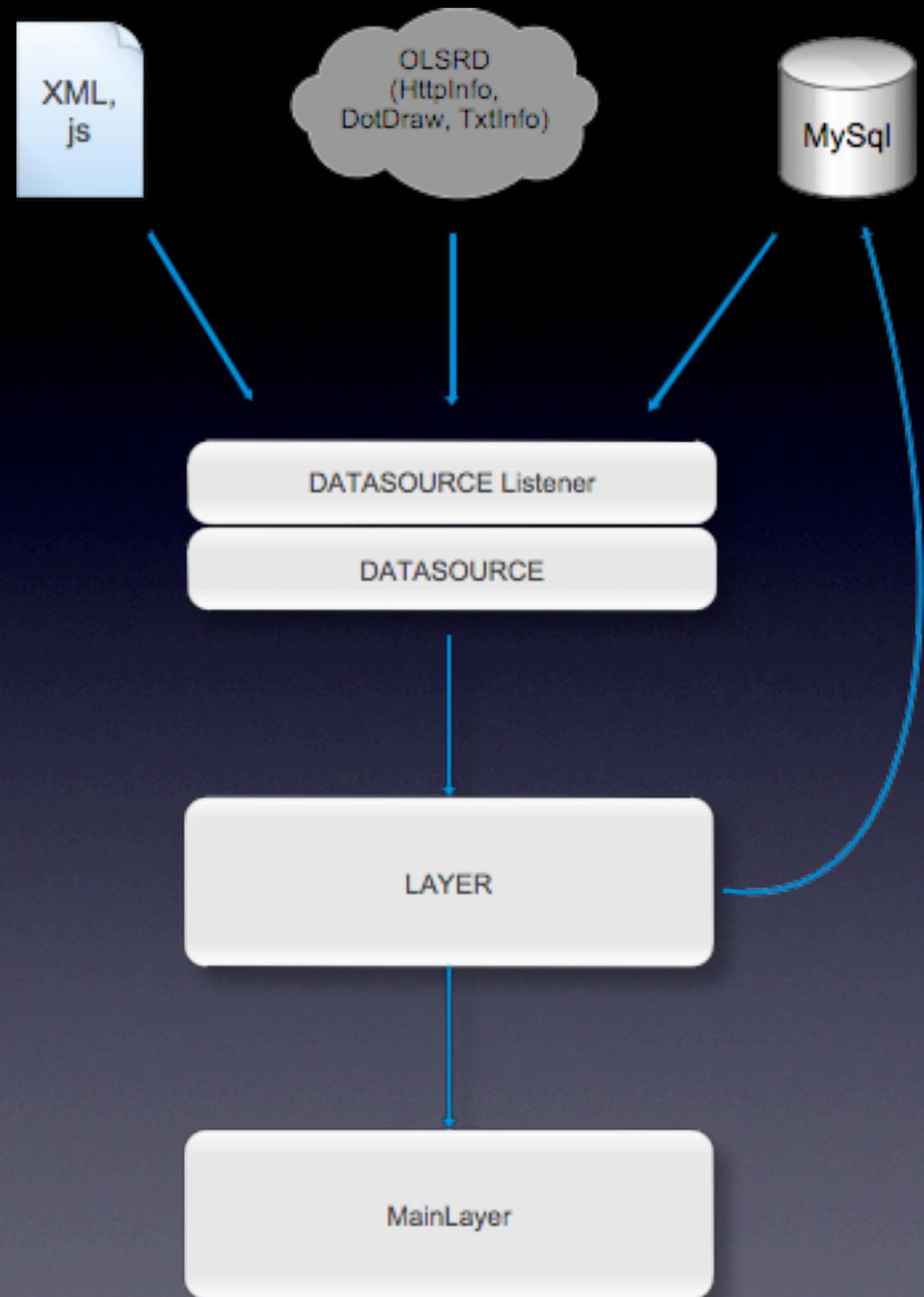
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Datasource Listener

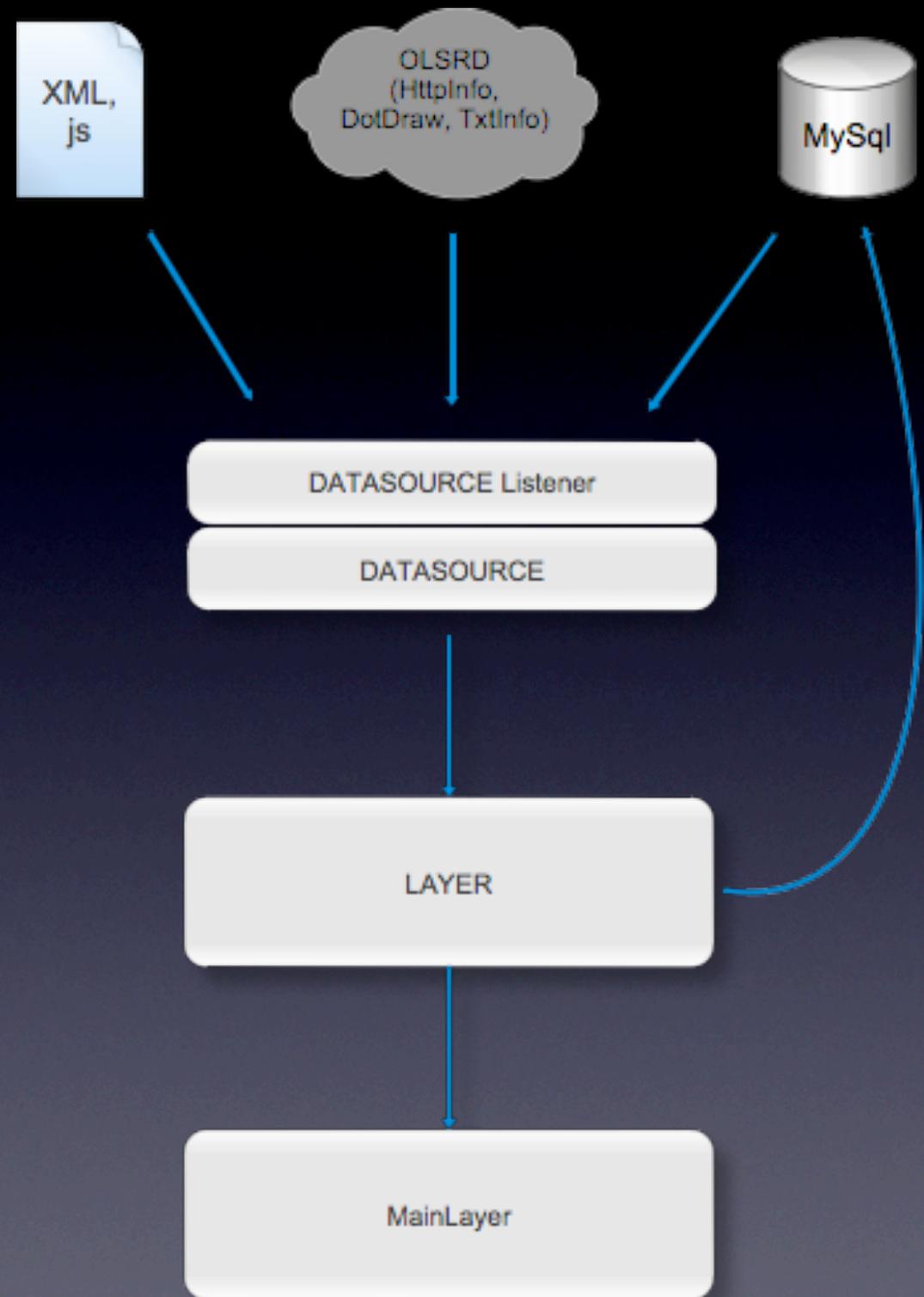


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Datasource Listener

Central Layer



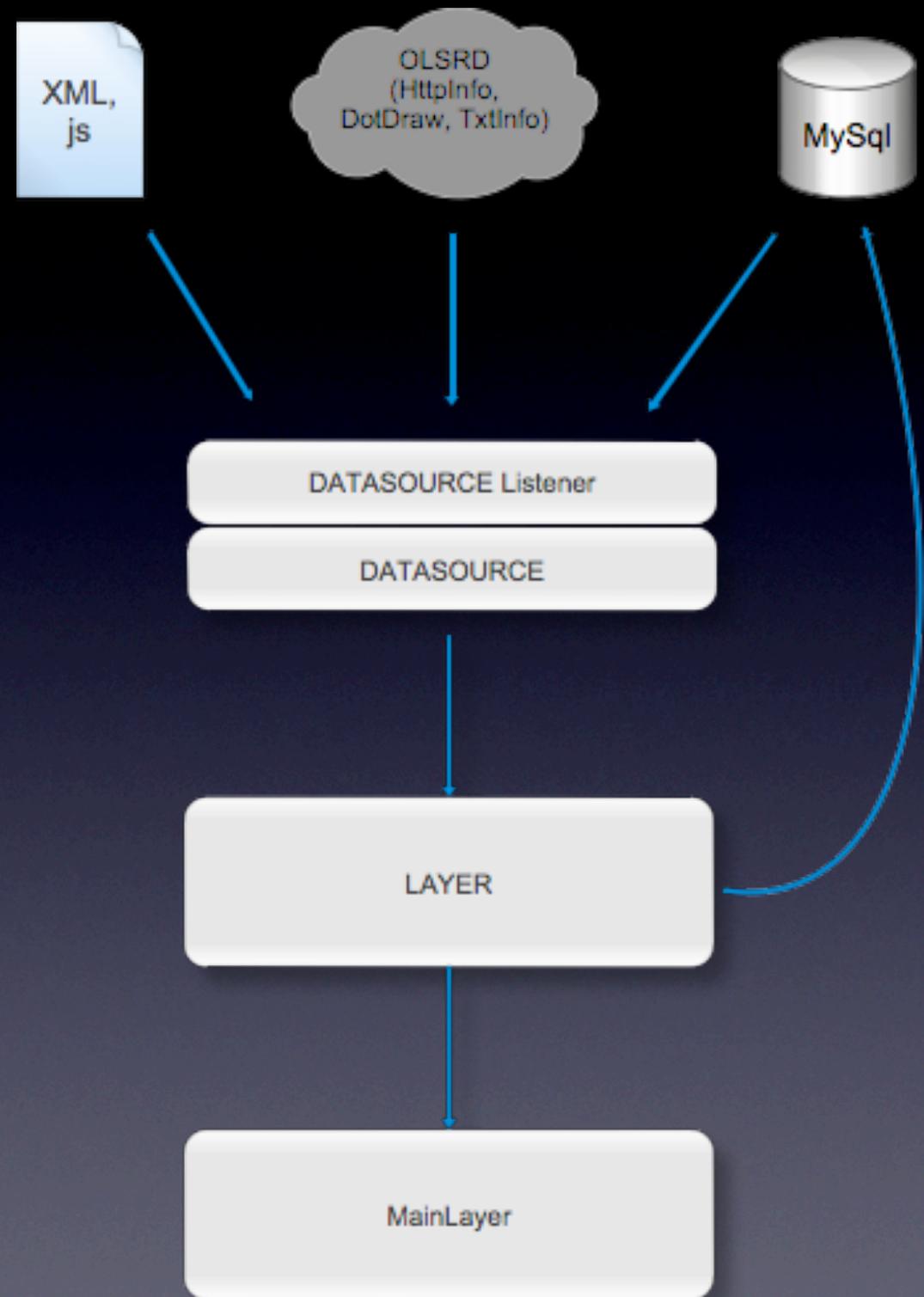
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Datasource Listener

Central Layer

Main Layer



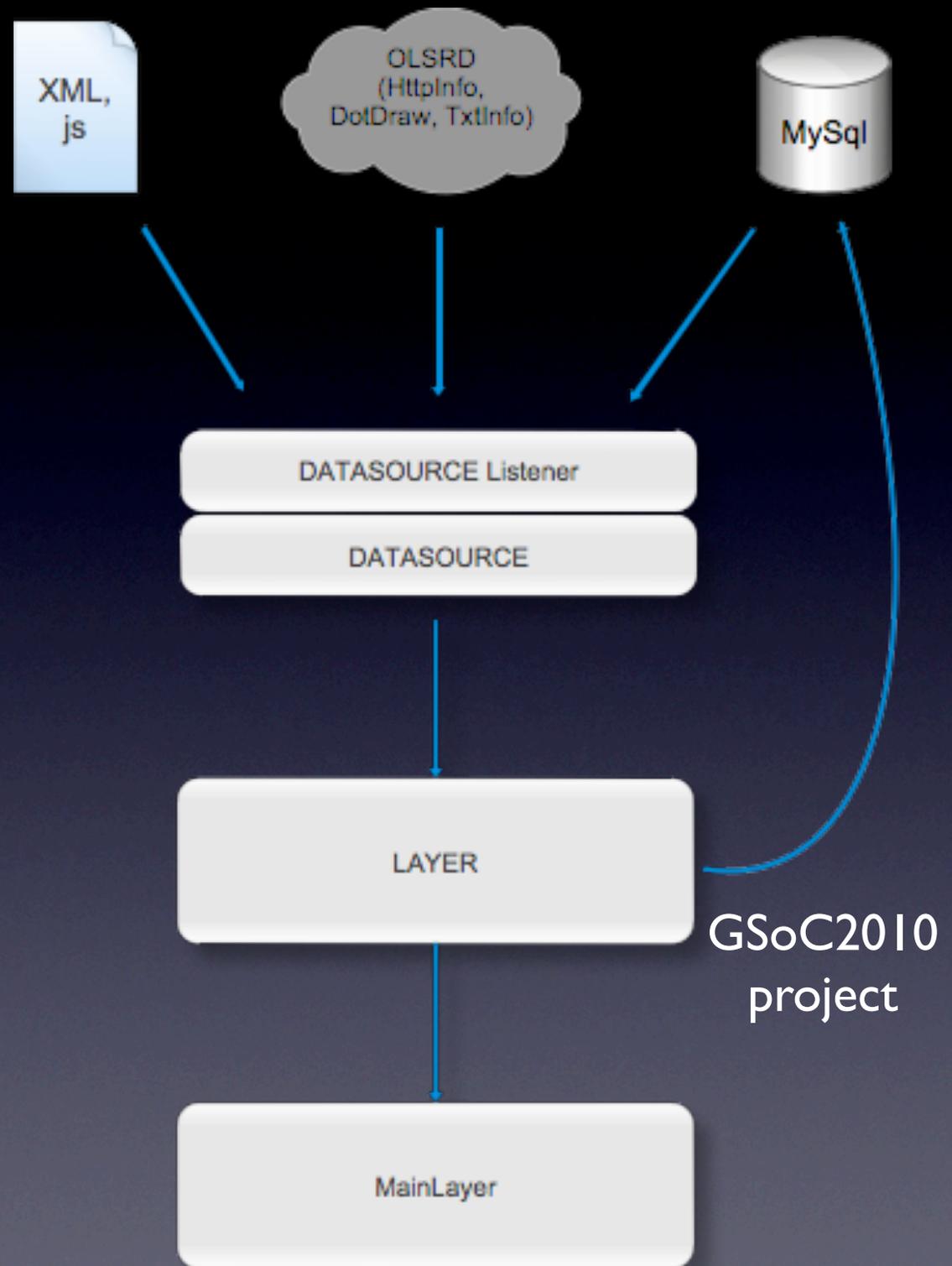
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Datasource Listener

Central Layer

Main Layer



Layer

Layer

The goal is to find a simple way to store
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Create a method to quickly find these data in the database
and draw it on the map

How Database is structured

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Fields and tables depends on which wireless communities you are connected

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Interfaces

Nodes Table

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FQID - IP - Lat - Lon - isGw - GwIP - Uptime - (etc..)

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Interfaces record

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(NodeID, MainAddress(bool), ip)

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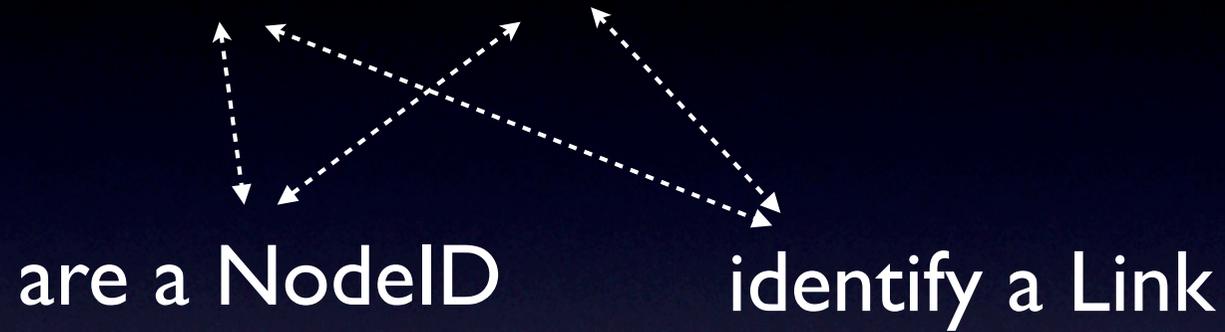
Layer Table

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ID - NodeS - NodeD - FirstTimeSt - LastTimeSt - ...

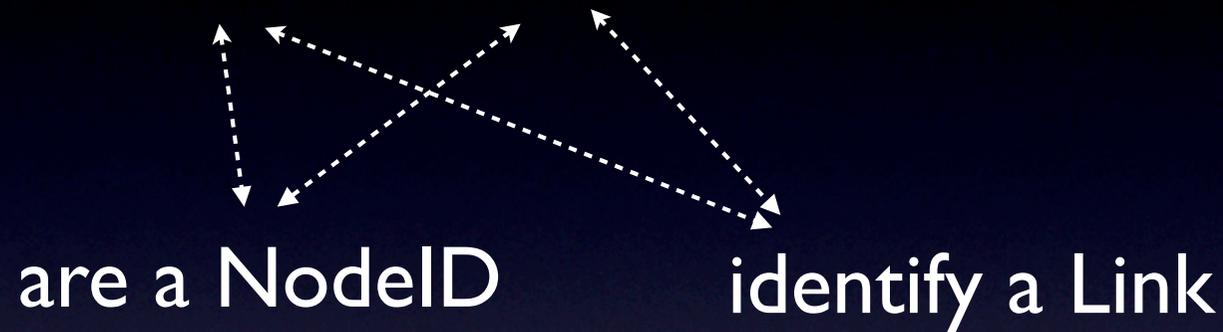
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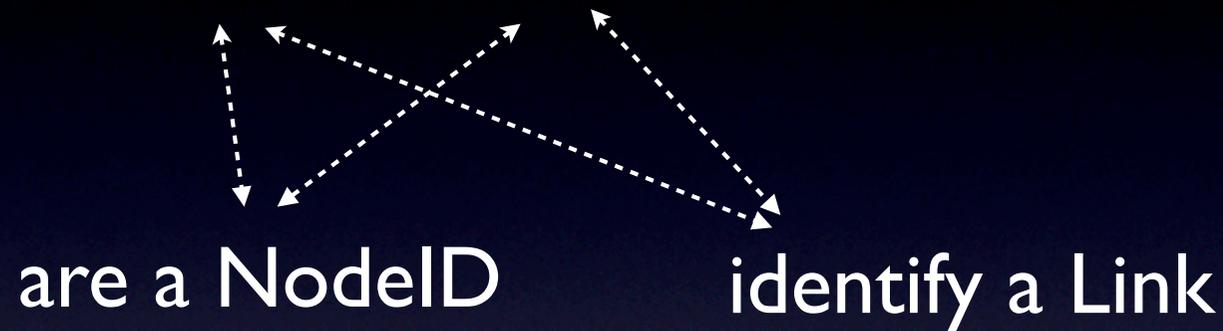
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If two or more layers have the same information I update
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Layer Table

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If two or more layers have the same information I update only LastTimeSt

In this way if the network does not change, then for a period of time I can use a single record only

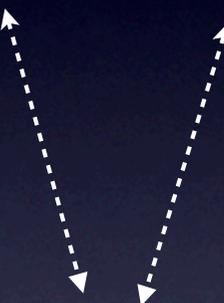
Links Table

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Src - Dest - FirstTimeSt - LastTimeSt - Etx - Lq - nlq

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is a NodeID

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This info are in sync with the routing protocol updates

Freimap Requirements

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MySql Server

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OLSR Network

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Java Enviroment

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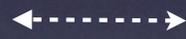


People won't install a
DB

OLSR Network



Java Enviroment



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If I'm not connected
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Java Enviroment



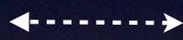
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Solution: Port Freimap as a javascript WebApp in a central
Server

Freimap WebApp - Conclusions

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I Step - Define a common node database schema

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III Step - Create a package for basic installation of the WebApp

In this way the WabApp could be used by all Wireless Communities



Suggestions?

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Q&A



Service Discovery in Freimap

Google Summer of Code 2009



Freimap

Gsoc project

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Service Discovery with DNS query

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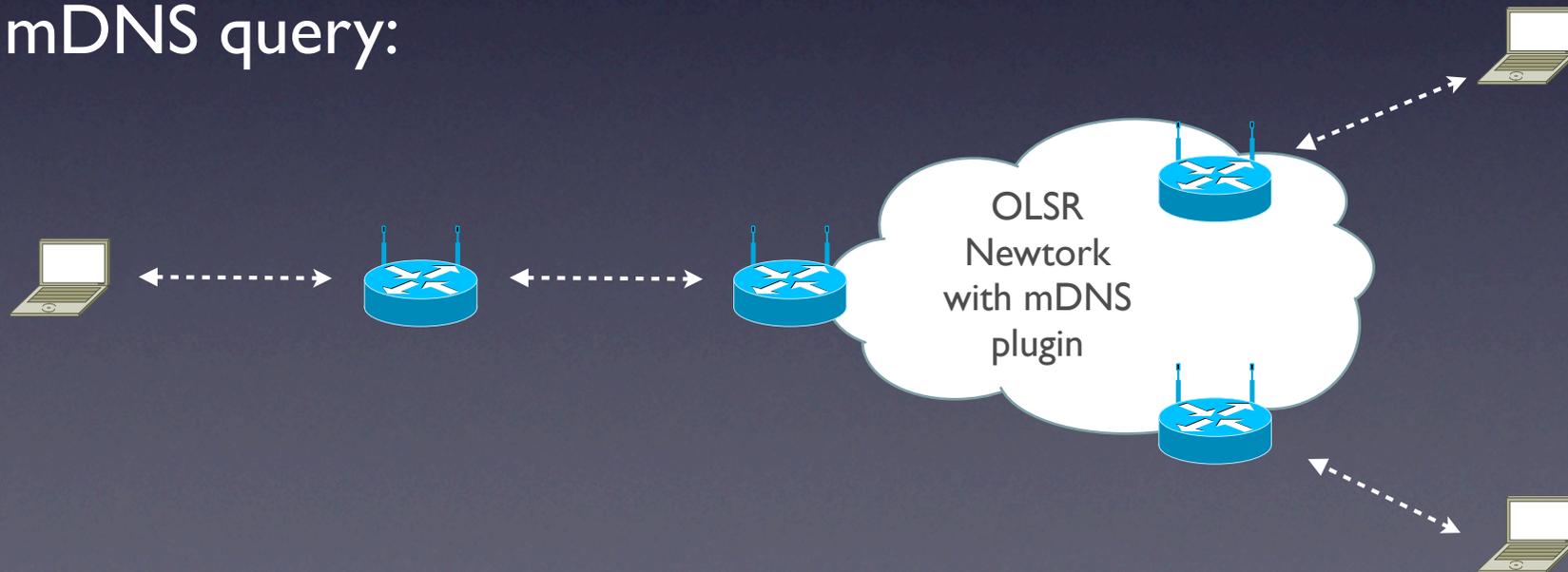
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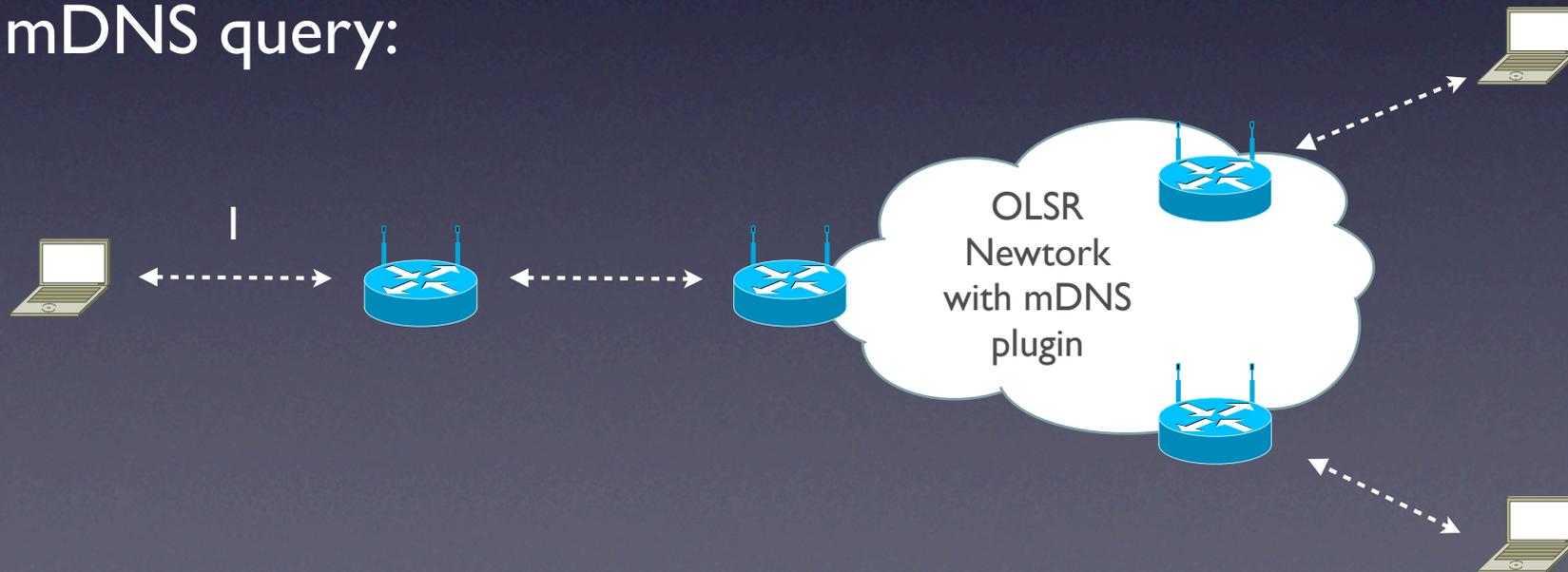
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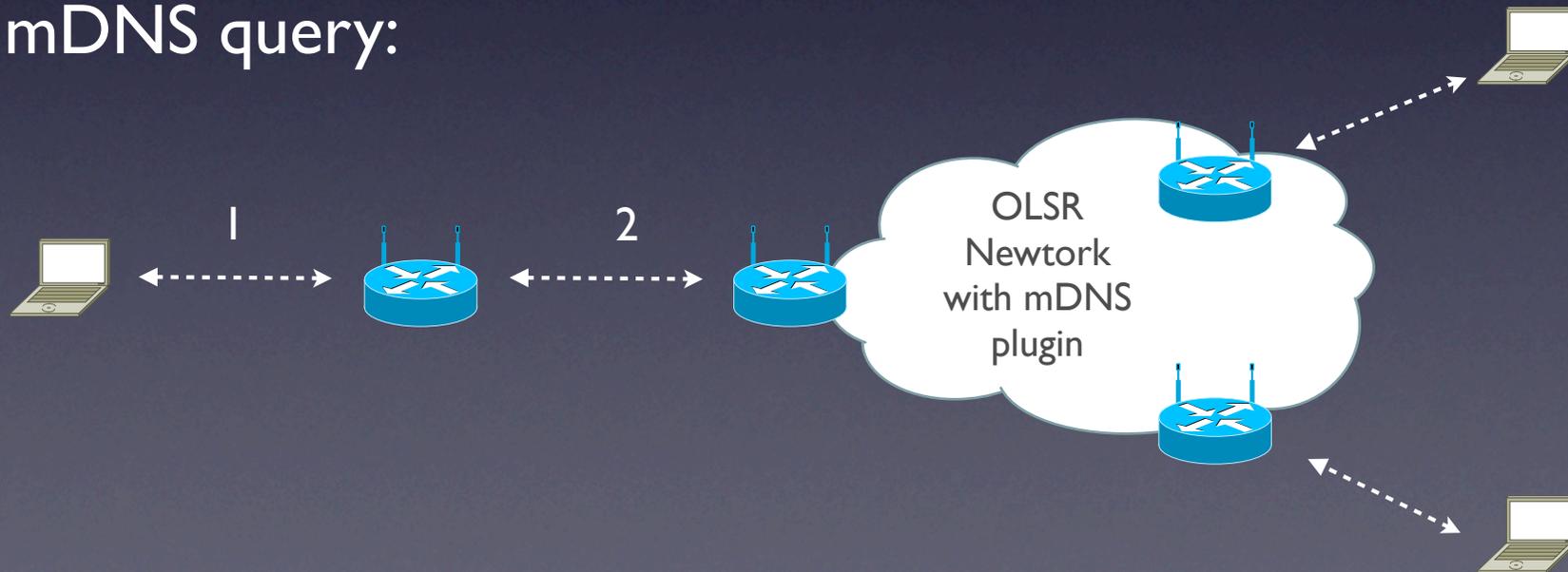
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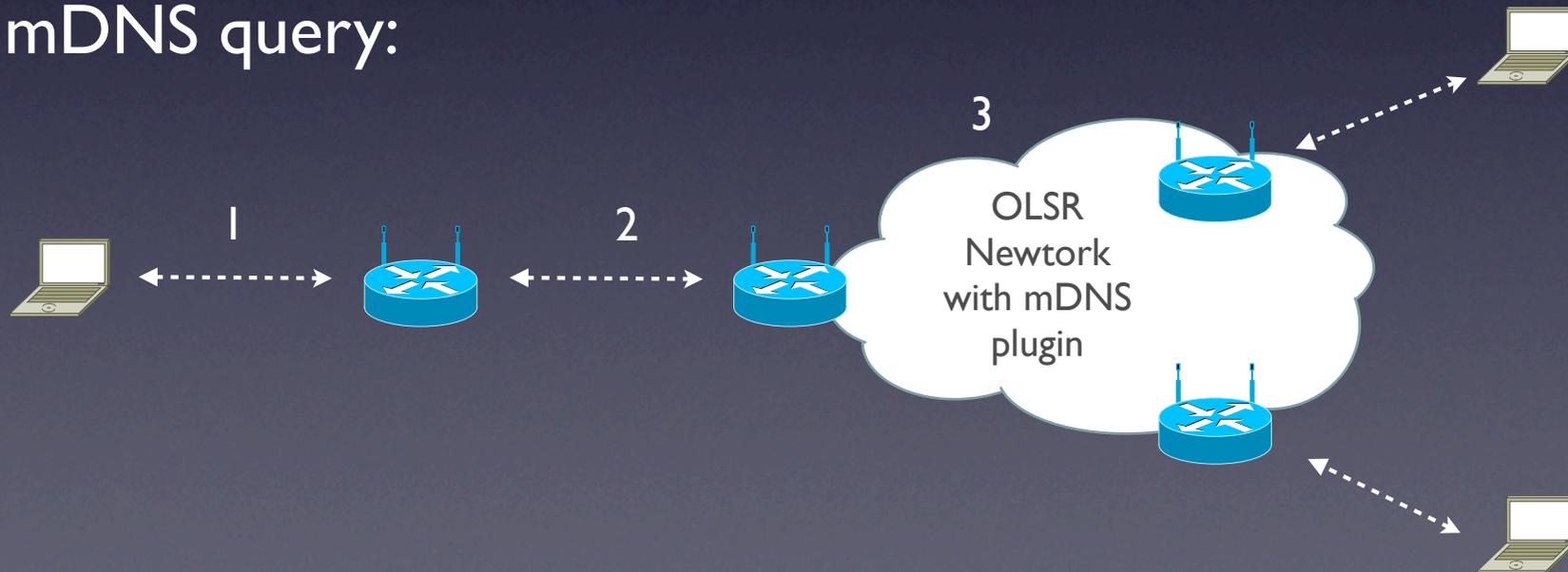
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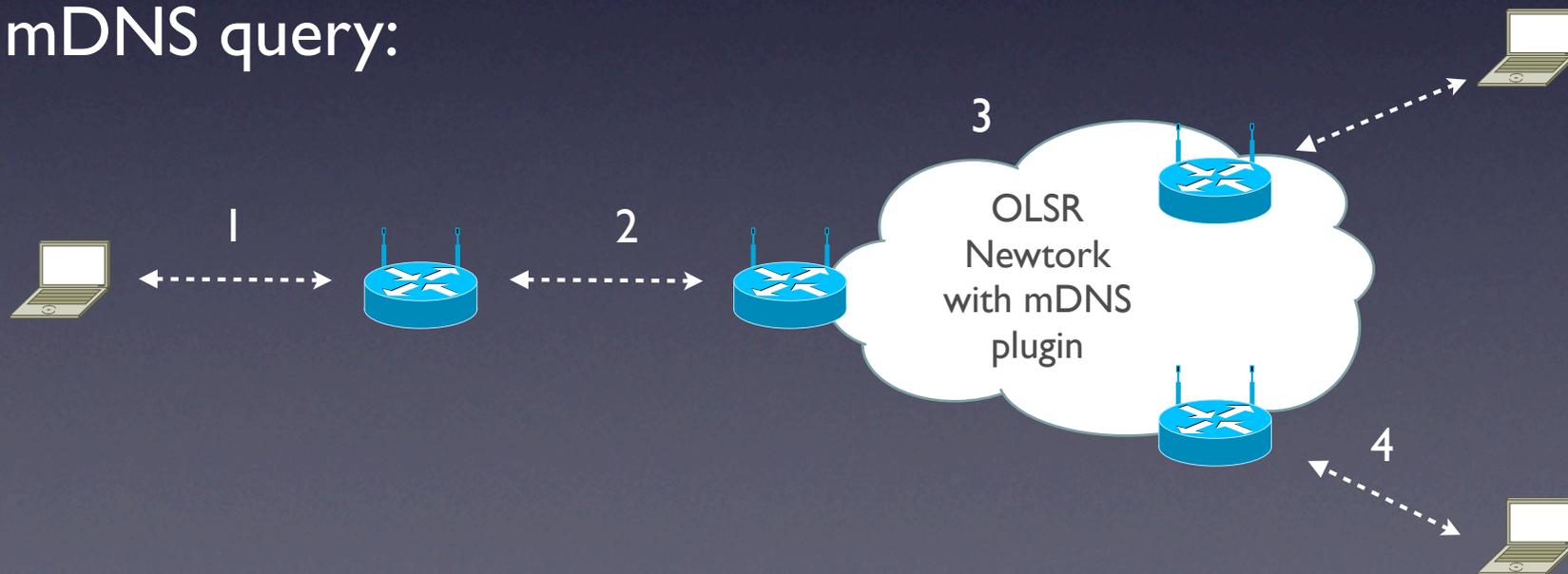
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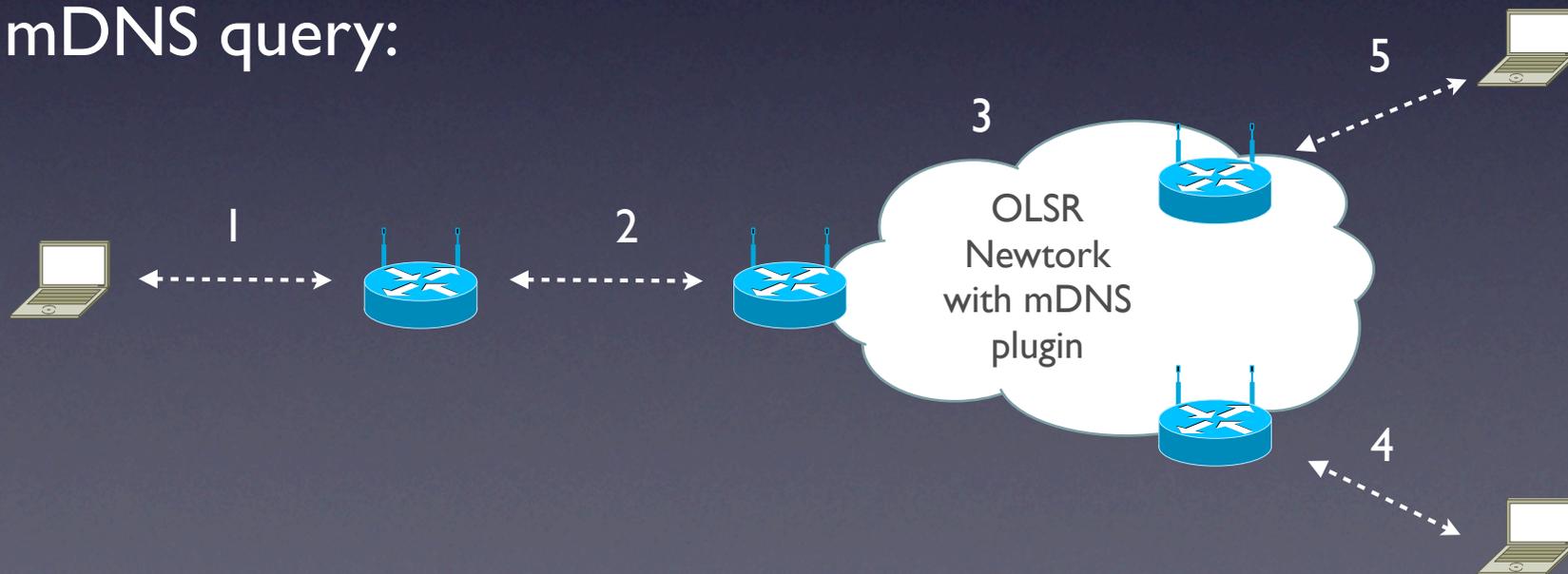
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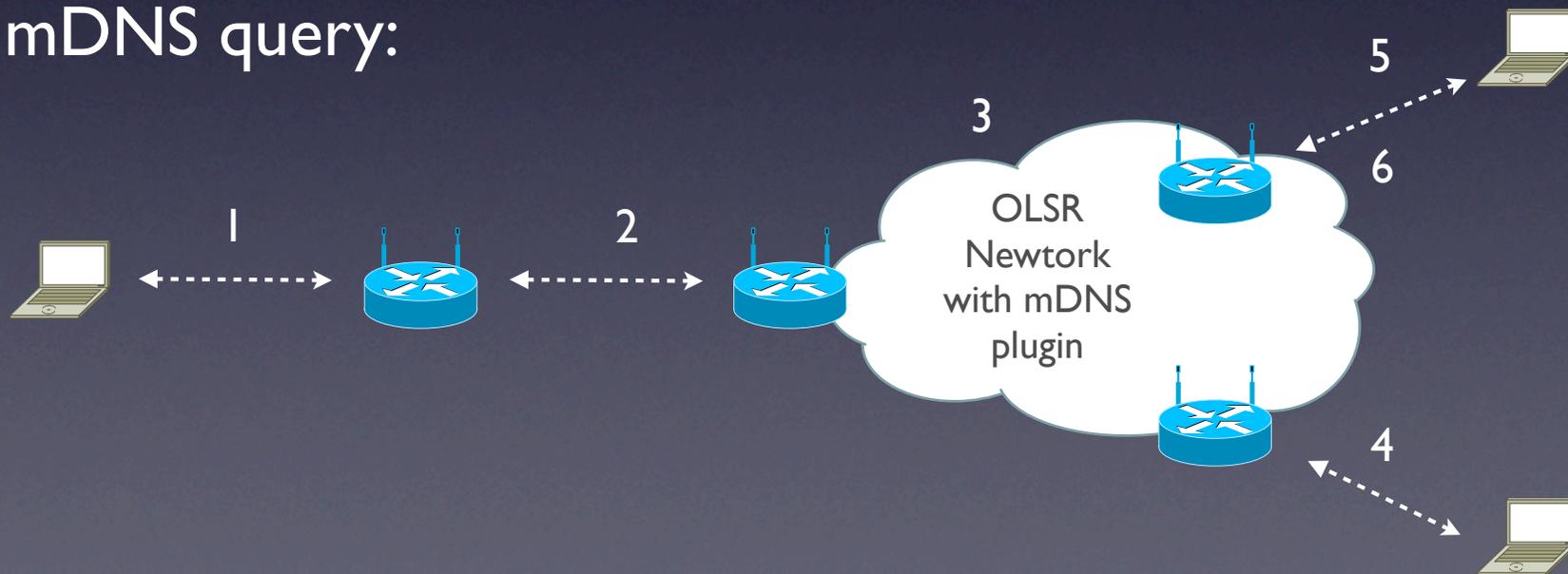
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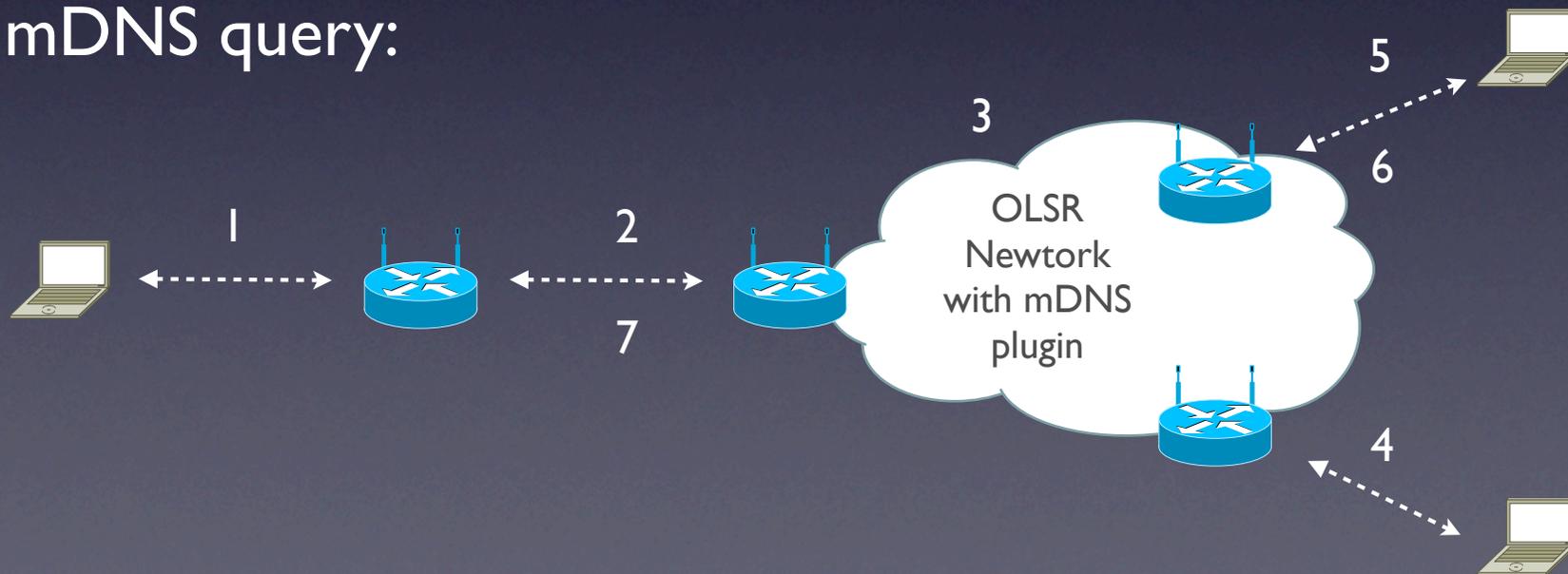
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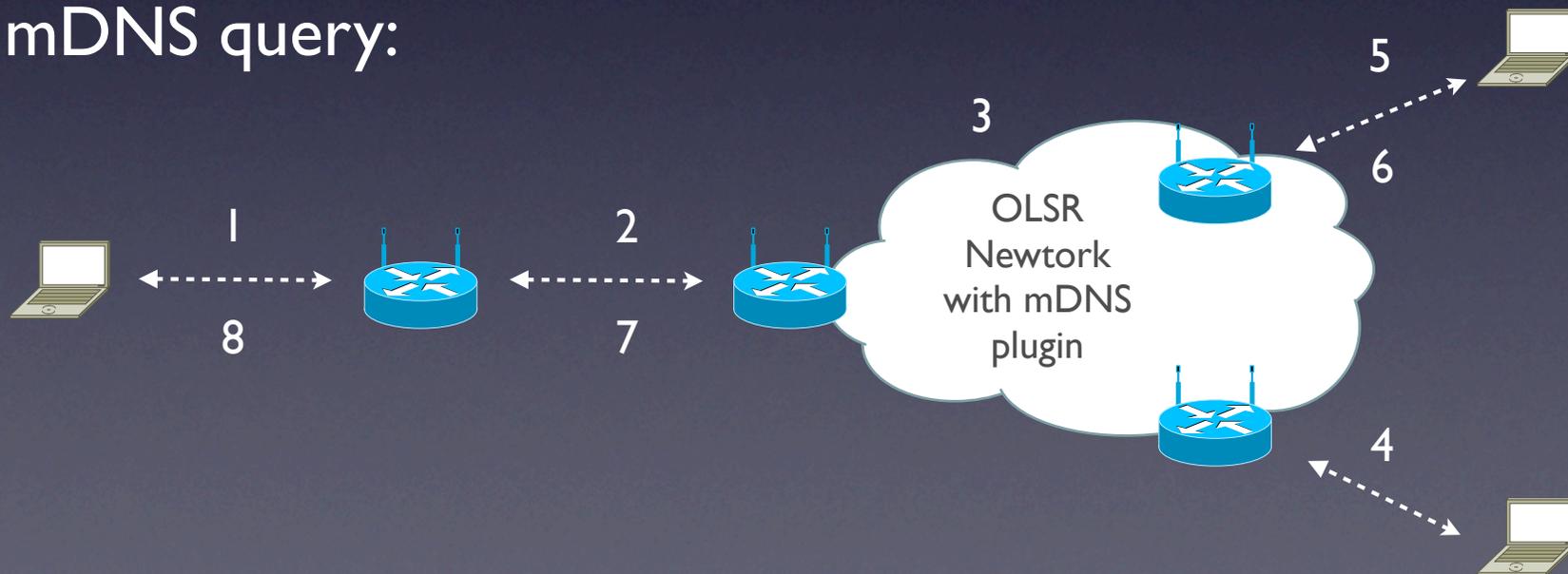
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Discover all service on the network

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Discover all service on the network

Answer could be to the multicast
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Unicast Query:

Address: Main address of the node

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Unicast Query:

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Discover only services of one node

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Address: 224.0.0.251

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Unicast Query:

Address: Main address of the node

Discover only services of one node

Answer to the originator of the
request



Service Discovery

Service Discovery

_afpovertcp._tcp.local.
_airport._tcp.local.
daap._tcp.local.
_distcc._tcp.local.
_eppc._tcp.local.
_ftp._tcp.local.
_h323._tcp.local.
_http._tcp.local.
_ipp._tcp.local.
_net-assistant._tcp.local.
_nfs._tcp.local.
_pdl-datastream._tcp.local.
_presence._tcp.local.
_printer._tcp.local.
_raop._tcp.local.
_riousbprint._tcp.local.
_sftp._tcp.local.
_sip._udp.local.
_smb._tcp.local.
_ssh._tcp.local.
_telnet._tcp.local.
_tftp._tcp.local.
_webdav._tcp.local.
_workstation._tcp.local.
_xserveraid._tcp.local.

Libreria di Stefano Pilla

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_daap._tcp.local.
MacBook-Pro-di-Stefano-Pilla.local.:3689
192.168.1.103:3689
Version=196616
Database ID=A6745260B09E13F4
txtvers=1
Machine ID=E93E3D9DEA87

ServiceType added: _printer._tcp.local.
ServiceType added: _airport._tcp.local.
ServiceType added: _afpovertcp._tcp.local.
ServiceType added: _nfs._tcp.local.
ServiceType added: _webdav._tcp.local.
ServiceType added: _presence._tcp.local.
ServiceType added: _eppc._tcp.local.
ServiceType added: _telnet._tcp.local.
ServiceType added: _raop._tcp.local.
ServiceType added: _ipp._tcp.local.
ServiceType added: _pdl-datastream._tcp.local.
ServiceType added: _riousbprint._tcp.local.
ServiceType added: _daap._tcp.local.
ServiceType added: _distcc._tcp.local.
ServiceType added: _xserveraid._tcp.local.
ServiceType added: _net-assistant._tcp.local.
ServiceType added: _workstation._tcp.local.
ServiceType added: _h323._tcp.local.
ServiceType added: _sip._udp.local.
Service added: Libreria di Stefano Pilla

Add Type

Remove Selected Item

Reload Default Services

Make Super Query



About Node

Node Name: StefanoP
Lat/Lon: 41.8637595/12.5535823
UpTime: 4 days 3h 2m

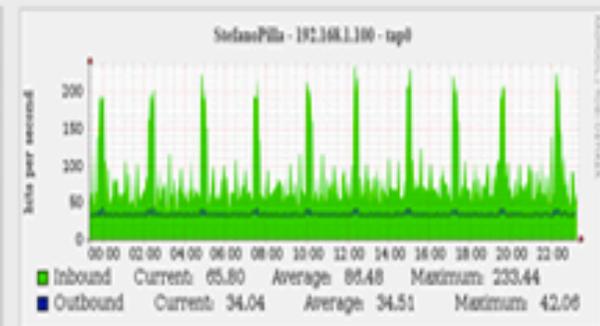
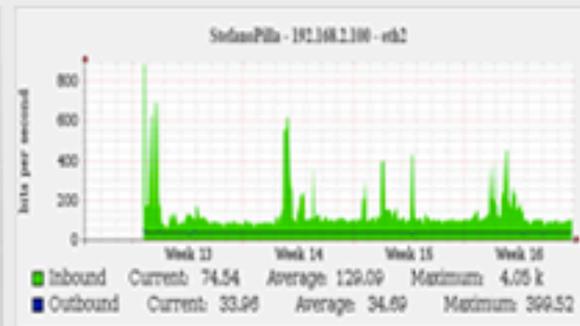
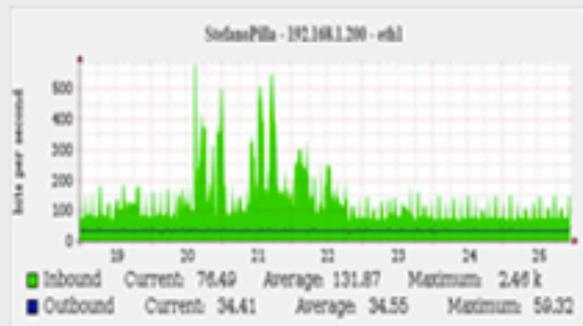
IP: 192.168.1.103

Plugins: mDNS

Attributes: Gateway - 192.168.1.1

[See Fresnel Zone](#)

SNMP Graphs



Service Discovery

Type:

_http._tcp.local.
_skype._tcp.local.
_daap._tcp.local.
_presence._tcp.local.

Services:

Libreria di Stefano Pilla

Detail:

Libreria di Stefano Pilla
_daap._tcp.local.
MacBook-Pro-di-Stefano-Pilla.local.:3689
192.168.1.103:3689
Version=196616
Database ID=A6745260B09E13F4
txtvers=1
Machine ID=E93E3D9DEA87

Conclusion

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Freimap is a really potential software but there are some things that must be improved.

Service Discovery and Database output is only a part of Freimap.

Weakness:

Conclusion

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Weakness:

Performance

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Weakness:

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Use

Solution: Porting Java Freimap as a Webservice with a PHP Framework

Info/Updates



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<http://wiki.freifunk.net/Freimap>



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We waiting you in Rome at the WBMv3 / 2 - 6 June
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More info: <http://battlemesh.org> - contatti@ninux.org

Q&A