TinyOWS

ORGS 2009 - Nantes

Summary

- TinyOWS presentation
- History and contributors
- Architecture
- Client Software
- Implementation
- Config File
- Benchmarks
- Roadmap
- Conclusion and Questions

What TinyOWS is ?

- TinyOWS is
  - ✔ Web Feature Service (WFS-T)
  - ✔ Speed in mind implementation
- Tiny approach
  - ✔ Deeply rely on PostGIS datas storage
  - ✔ Easy to deploy
- OSS Software
  - ✔ MIT Licence
- OGC oriented
  - ✔ Strict OGC standard implementation
  - ✔ OGC Forum France support

Why TinyOWS ?

- Begin as a R&D Project
  - ✔ Yet Another WFS Server...
- Keep lightweight architecture
  - ✔ Perfect couple with MapServer as a WMS
  - ✔ No need to use Tomcat to provide WFS-T
- Implement latest OGC WS standard version
  - ✔ WFS 1.1.0
  - ✔ CITE Unit Test based
- Performance is a priority

Where TinyOWS ?

- Official Site: http://www.tinyows.org

- Mailing Lists:
  - tinyows-dev@lists.maptools.org
  - tinyows-users@lists.maptools.org

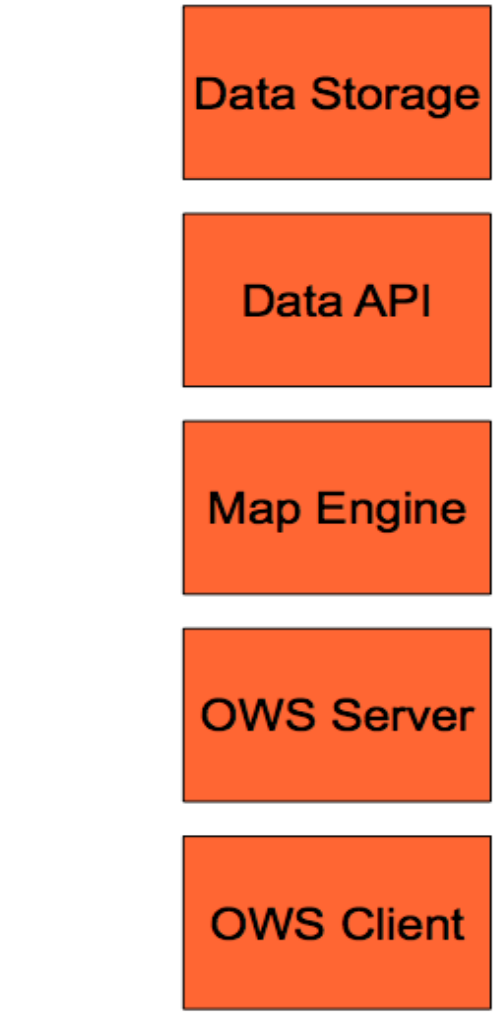
TinyOWS history

- October 2007
  - First public presentation: FOSS4G 2007 - Victoria
  - Version 0.6.0 (alpha)
- 2008
  - MapGears contribution
  - Add MapGears project demonstration (OL & MF)
  - Lot of improves and bugfixes
- Mars 2009 (Toronto Code Sprint)
  - DMSolution contribution
  - PostGIS export function rewrite in 1.4.0 branch
  - Still lot of improves and bugfixes
- July 2009
  - PostGIS 1.4.0 released
  - TinyOWS 0.7.0 released
  - OGRS presentation

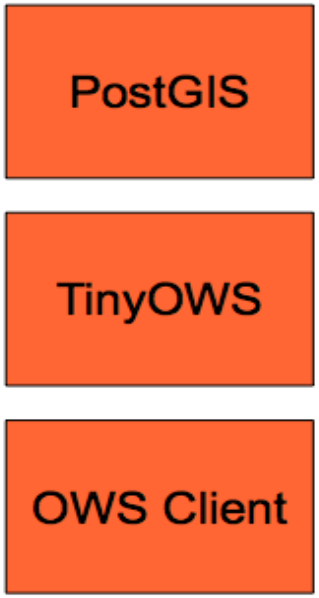
TinyOWS contributors

- Camptocamp
  - ✔ Barbara Phillipot: Initial main contributor
  - ✔ Olivier Courtin: Lead project
- MapGears
  - ✔ Normand Savard: Several Bugfixes and enhancements
  - ✔ Alexandre Dube: OpenLayers WFS-T enhancements
- DM Solution
  - ✔ Assefa Yewondwossen: Win32 integration

TinyOWS Architecture



Common OWS Architecture Stack

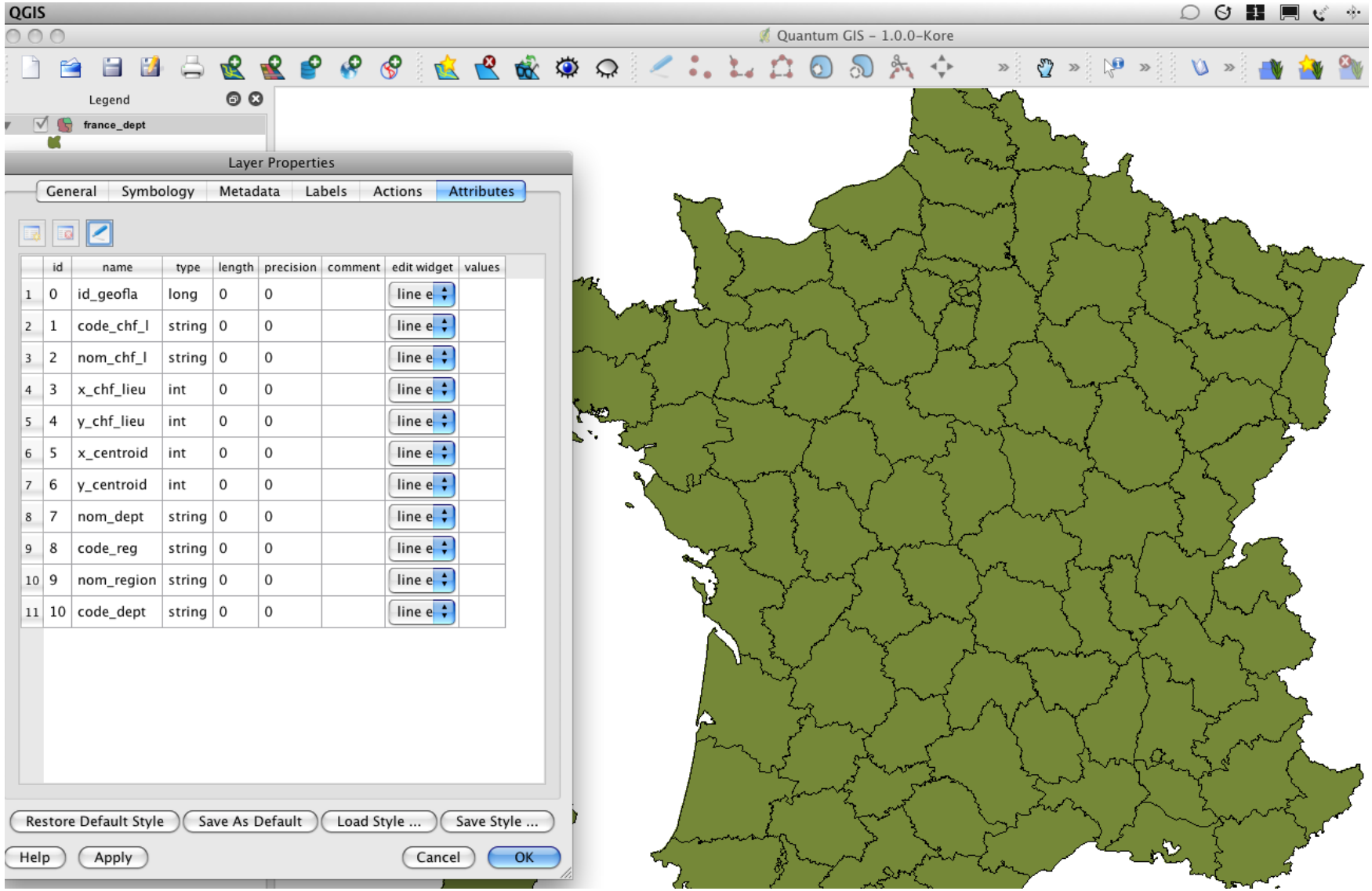


TinyOWS Architecture Stack

PostGIS data storage

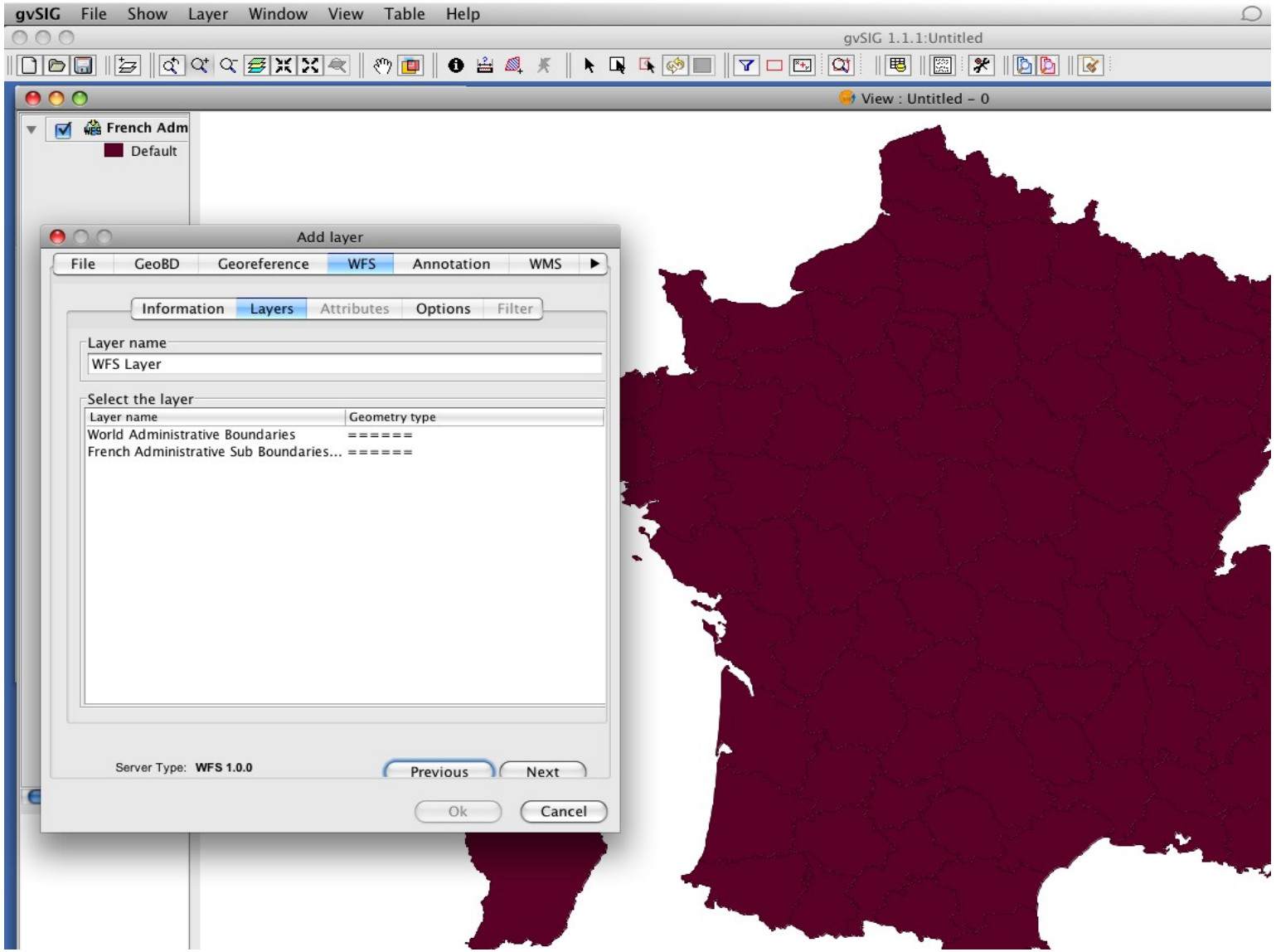
```
tinyows_demo=# \d france_dept
                                    Table "public.france_dept"
   Column    |          Type          |                          Modifiers
-------------+------------------------+-------------------------------------------------------------
 gid         | integer                | not null default nextval('france_dept_gid_seq'::regclass)
 id_geofla   | bigint                 |
 code_chf_l  | character varying(3)   |
 nom_chf_l   | character varying(50)  |
 x_chf_lieu  | integer                |
 y_chf_lieu  | integer                |
 x_centroid  | integer                |
 y_centroid  | integer                |
 nom_dept    | character varying(30)  |
 code_reg    | character varying(2)   |
 nom_region  | character varying(30)  |
 code_dept   | character varying(3)   |
 the_geom    | geometry               |
Indexes:
    "france_dept_pkey" PRIMARY KEY, btree (gid)
    "france_dept_the_geom_gist" gist (the_geom)
Check constraints:
    "enforce_dims_the_geom" CHECK (st_ndims(the_geom) = 2)
    "enforce_geotype_the_geom" CHECK (geometrytype(the_geom) = 'MULTIPOLYGON'::text OR the_geom
IS NULL)
    "enforce_srid_the_geom" CHECK (st_srid(the_geom) = 27582)
```

QGIS Client (WFS plugin)



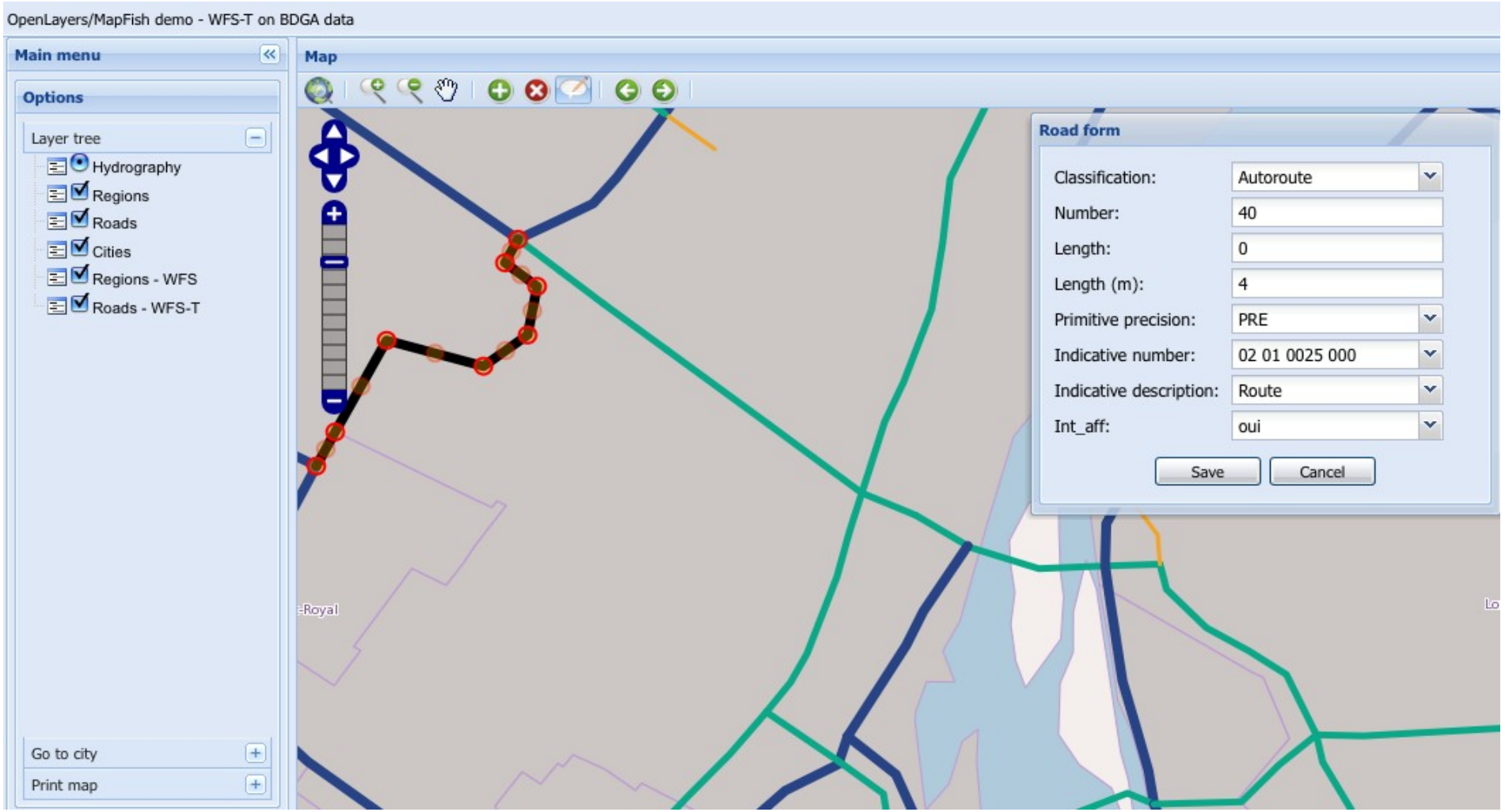
camptocamp

GvSIG Client



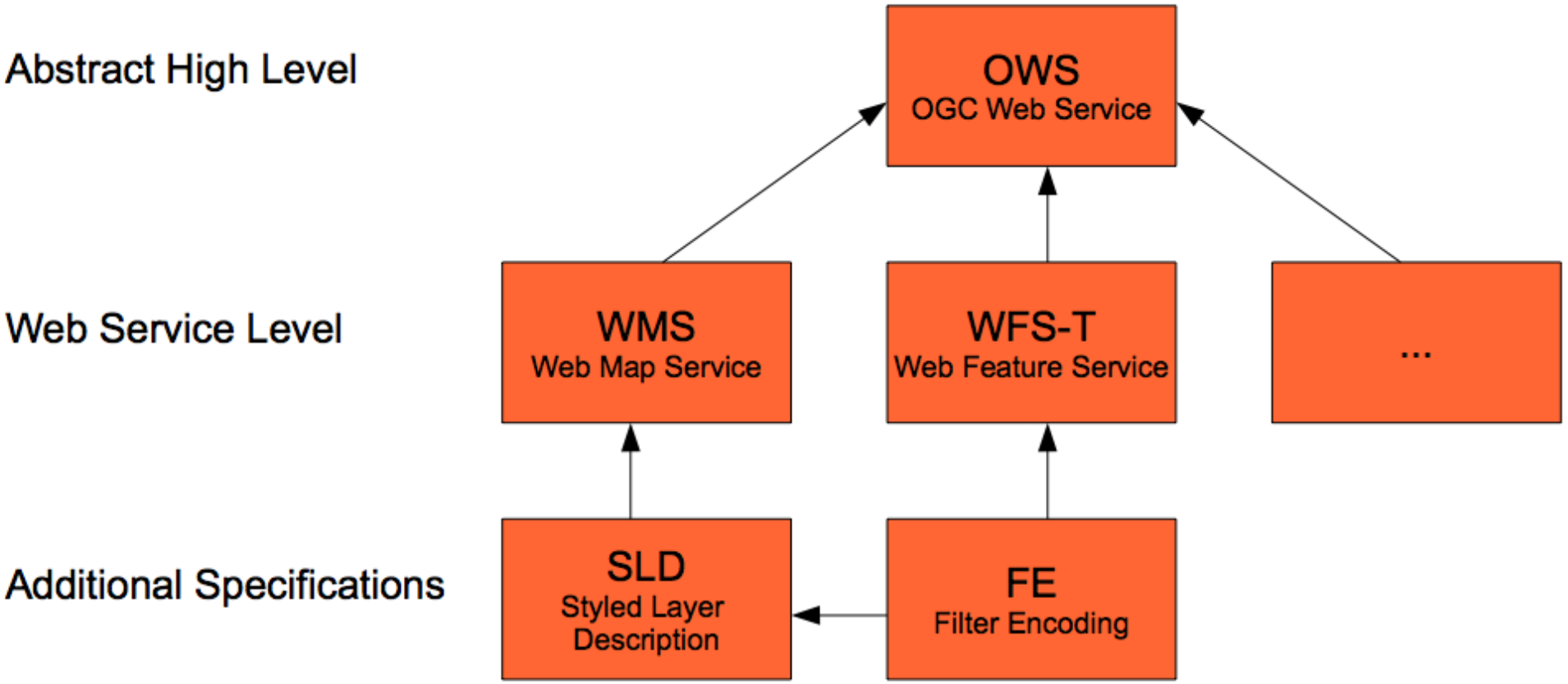
camptocamp

OpenLayers & MapFish Client



camptocamp

TinyOWS and OGC implementations - I



TinyOWS and OGC implementations - II

- OWS
  - ✔ 1.0.0
  - ✔ 1.1.0
- Web Feature Service
  - ✔ Profiles Basic & Transactional
  - ✔ 1.0.0
  - ✔ 1.1.0
- GML
  - ✔ 2.1.2
  - ✔ 3.1.1
- Filter Encoding
  - ✔ 1.0.0
  - ✔ 1.1.0

TinyOWS and OGC implementations - III

- Lightweight dependancies
  - ✔ LibXML2 (>= 2.6.20)
  - ✔ PostgreSQL (>= 8.1)
  - ✔ PostGIS (>= 1.4.0)
  - ✔ And an ANSI C compiler ;)

Units tests driven

- OGC CITE Unit Test
  - WFS 1.0.0

  - WFS 1.1.0

- Valgrind test
  - Check error
  - Check memory leak

PostGIS export function enhancements

- AsGML
  - ✔ Add precision format
  - ✔ Add OGC urn long format
  - ✔ Add lat/long OGC right order definition (GML 3.1.1 only)
  - ✔ Add unit tests

(PostGIS 1.4.0)

- AsGeoJson
  - ✔ Add export function & unit tests (PostGIS 1.3.5)

- AsSVG
  - ✔ Rewrite the entire function to avoid memory leak and crash
  - ✔ Add unit tests

(PostGIS 1.4.0)

TinyOWS sample config file

```
<tinyows online_resource="http://127.0.0.1/cgi-bin/tinyows"
          schema_dir="/usr/local/tinyows/schema/">

   <pg host="127.0.0.1"
       user="postgres"
       password="postgres"
       dbname="tinyows_demo"/>

   <metadata name="TinyOWS Server"
             title="TinyOWS Server - Demo Service" />

  <contact name="TinyOWS Server"
           site="http://www.tinyows.org/"
           email="tinyows-users@lists.maptools.org" />

  <layer retrievable="1"
         writable="1"
         prefix="tows"
         server="http://www.tinyows.org/"
         name="world"
         title="World Administrative Boundaries" />
</tinyows>
```

GetFeature Benchmark on a single Layer

- TinyOWS
  - 200 Features 0.5s
  - 1000 Features 2.5s
  - 5000 Features 11.4s
- MapServer
  - 200 Features 1.0s
  - 1000 Features 4.3s
  - 5000 Features 20.1s
- GeoServer
  - 200 Features 1.7s
  - 1000 Features 12.1s
  - 5000 Features 39.5s

TinyOWS RoadMap

- GeoJson and KML export Format
- Improve CITE compliant
- Improve again OpenLayers and Udig native compliant
- GeoXACML security restriction rules
- Fast CGI architecture

Conclusions

- TinyOWS is now stable enough to production usage

- Performances have been really improved
  - ✔ Since previous 0.6.0 version
  - ✔ Related to others MapEngine

Questions

- Any Questions ?