



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

Data Storage

Data API

Map Engine

OWS Server

OWS Client

Common OWS Architecture Stack

PostGIS

TinyOWS

OWS Client

TinyOWS Architecture Stack



PostGIS data storage

```
tinyows_demo=# \d france_dept
```

Column	Type	Table "public.france_dept" 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)

Layer Properties

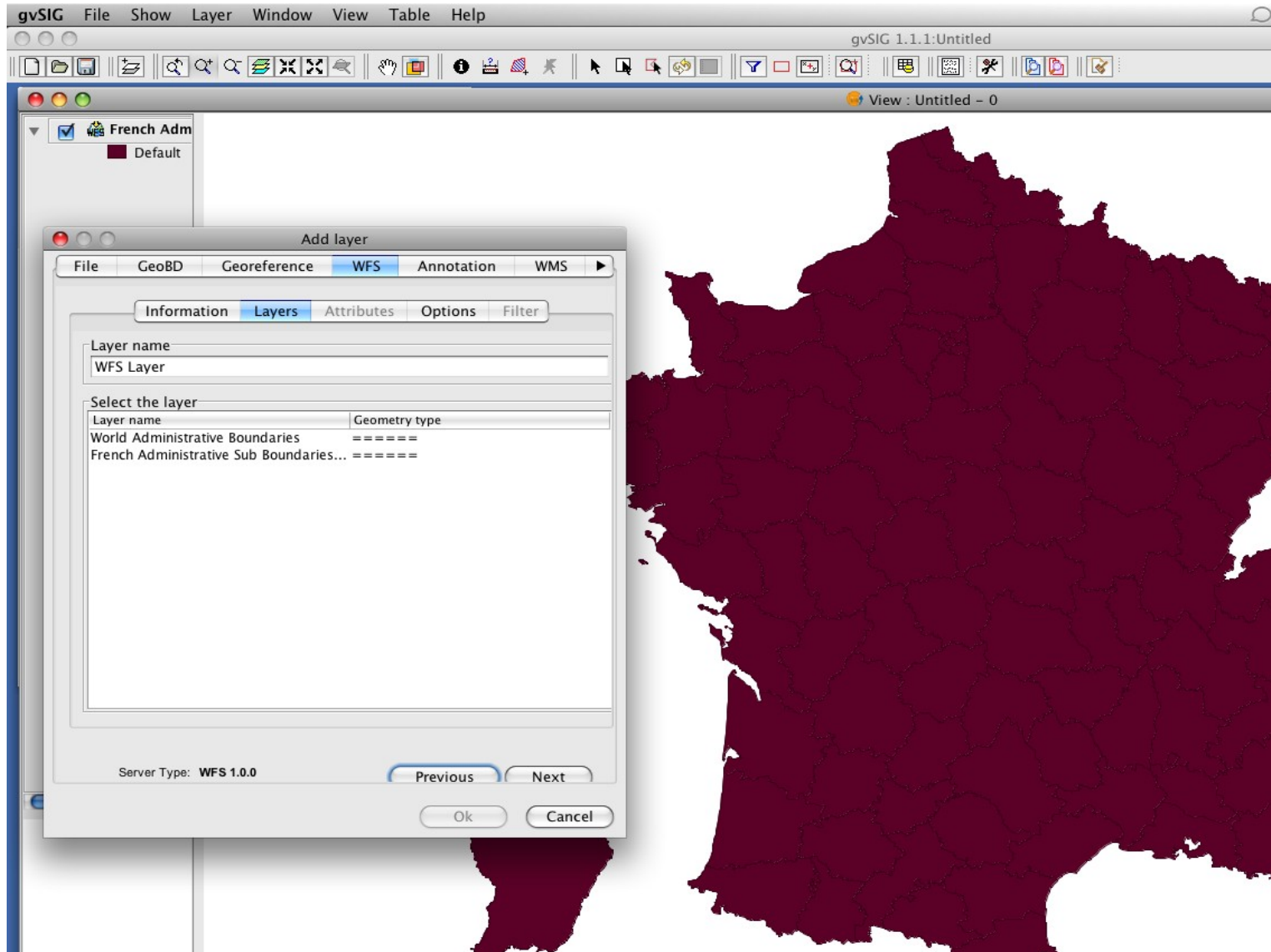
General Symbology Metadata Labels Actions Attributes

	id	name	type	length	precision	comment	edit widget	values
1	0	id_geofla	long	0	0		line e	
2	1	code_chf_l	string	0	0		line e	
3	2	nom_chf_l	string	0	0		line e	
4	3	x_chf_lieu	int	0	0		line e	
5	4	y_chf_lieu	int	0	0		line e	
6	5	x_centroid	int	0	0		line e	
7	6	y_centroid	int	0	0		line e	
8	7	nom_dept	string	0	0		line e	
9	8	code_reg	string	0	0		line e	
10	9	nom_region	string	0	0		line e	
11	10	code_dept	string	0	0		line e	

Restore Default Style Save As Default Load Style ... Save Style ...

Help Apply Cancel OK

GvSIG Client



OpenLayers & MapFish Client

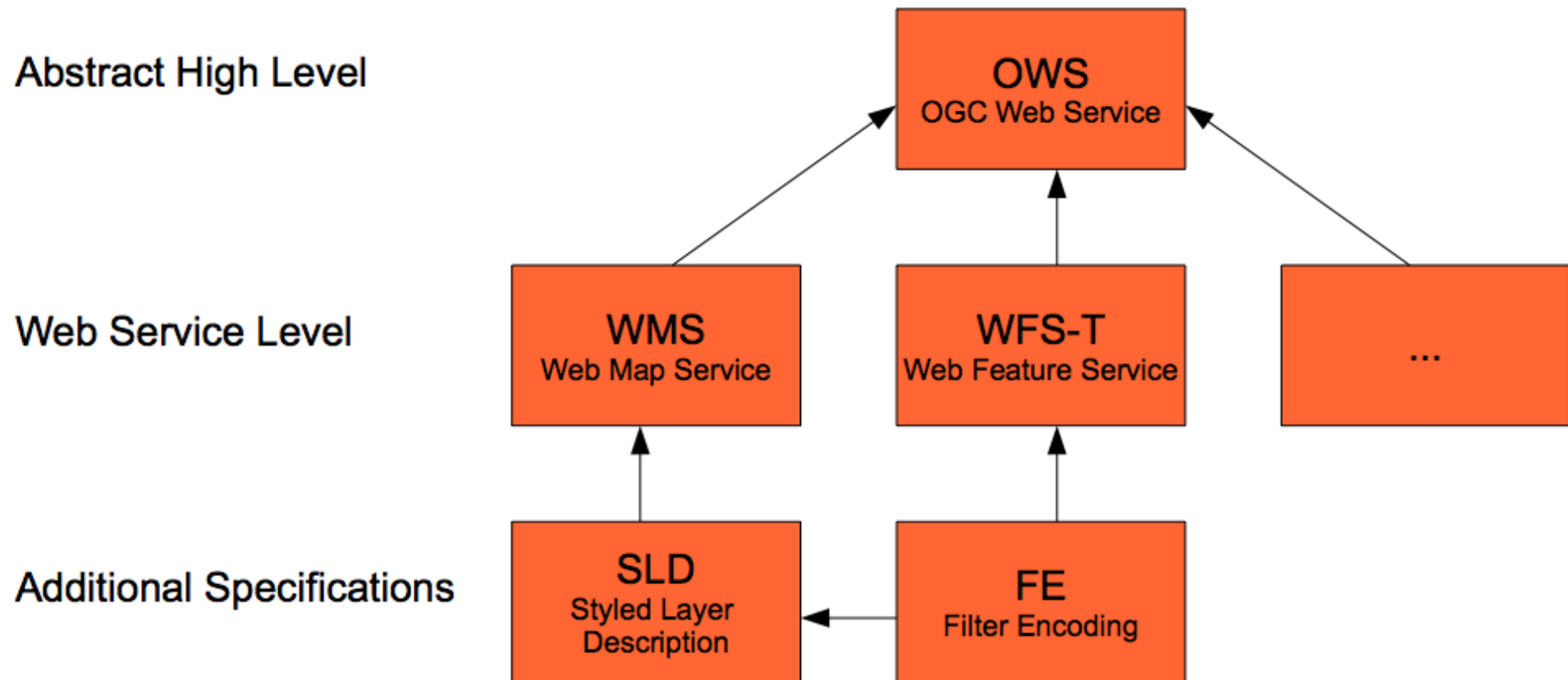
OpenLayers/MapFish demo - WFS-T on BDGA data

The screenshot displays the OpenLayers/MapFish client interface. The main window is titled "OpenLayers/MapFish demo - WFS-T on BDGA data". On the left, there is a "Main menu" with an "Options" panel. The "Options" panel contains a "Layer tree" with the following items: Hydrography, Regions, Roads, Cities, Regions - WFS, and Roads - WFS-T. Below the layer tree are "Go to city" and "Print map" buttons. The central area is a map showing a network of roads. A specific road segment is highlighted in black with red circular markers at its vertices. On the right side of the map, a "Road form" dialog box is open, containing the following fields:

Field	Value
Classification:	Autoroute
Number:	40
Length:	0
Length (m):	4
Primitive precision:	PRE
Indicative number:	02 01 0025 000
Indicative description:	Route
Int_aff:	oui

At the bottom of the dialog box are "Save" and "Cancel" buttons.

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

Summary ✓ Pass: **366** ⚠ Warning: **0** ✖ Fail: **32**

- ✓ WFS 1.1.0

Summary ✓ Pass: **408** ⚠ Warning: **0** ✖ Fail: **57**

■ 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 ?