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

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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)
GvSIG Client
OpenLayers & MapFish Client
TinyOWS and OGC implementations - I

Abstract High Level

Web Service Level

Additional Specifications

OWS
OGC Web Service

WMS
Web Map Service

WFS-T
Web Feature Service

SLD
Styled Layer Description

FE
Filter Encoding
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?