AUTHENTICATION AND AUTHORIZATION MANAGEMENT TO OGC SERVICES WITH GEOSHIELD: IMPROVEMENTS FROM FOSS4G 2009

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Content

- Quick intro
- Security issues with OGC standards
- Security with GeoShield
- Tecnologies and design
- Web administration interface
- WFS security
- Next improvements
- Q&A
QUICK INTRO
Fields of activities
[intro]
OGC implementations

[Intro]

GeoServer
Geographical data serving

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Sensor Observation Service

PyWPS
Data processing service

Monitoring data
Data Security

[intro]

Institute of earth science

Public data

Sensible data
Security issues with OGC standards
Which security implementations to use?

[security issues with OGC standards]
Security with GeoShield
Security with GeoShield

Users

http basic authentication

https

Web

Applications

WMS

SOS

WPS

WFS
Technologies and design
Java Servlet:
- Handling HTTP request and response

GeoTools 2.6.5:
- Conversion of CQL to OGC:FILTER
- Filters aggregation
- Filters evaluation
- Encoding/decoding OGC request/response

Java Persistence Api (with EclipseLink 2.0.0):
- Data manipulation

PostgreSQL 8.4 database
- User and group permission store
Desktop Style (Sencha Extjs)
- Users and groups definition
- Services initialization
- Features definition (Layers)
- Filters definition
**Intercepting filter pattern:**

**Modularity**
- Easy to add new ogc security implementations

**HTTP redirection**
- login pages

**Pre-processing e post-processing**
- Active modification of user request and services responses
Web administration interface
Web administration interface

### User accounts

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
<th>First name</th>
<th>Last name</th>
<th>Email</th>
<th>Ufficio</th>
<th>Tel</th>
<th>Fax</th>
<th>Indirizzo</th>
<th>Attributo</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>ist</td>
<td>admin</td>
<td>admin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>true</td>
</tr>
</tbody>
</table>

### Group properties

- **Group name:** ist

#### Members

<table>
<thead>
<tr>
<th>Service</th>
<th>Path</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMS</td>
<td>/public</td>
<td><a href="http://localhost:8084/geoserver/wms">http://localhost:8084/geoserver/wms</a></td>
</tr>
<tr>
<td>WMS</td>
<td>/map</td>
<td><a href="http://localhost:8084/basemaps/wms">http://localhost:8084/basemaps/wms</a></td>
</tr>
<tr>
<td>WFS</td>
<td>/ows4g</td>
<td><a href="http://localhost:8084/geoserver/wfs">http://localhost:8084/geoserver/wfs</a></td>
</tr>
</tbody>
</table>

#### Services permissions

<table>
<thead>
<tr>
<th>Request</th>
<th>getCapabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>describeFeatureType</td>
<td></td>
</tr>
<tr>
<td>getFeature</td>
<td></td>
</tr>
</tbody>
</table>

Note: select available Services from left
WFS security
The new WFS module
[WFS security]

**Working components**
- WFS version: 1.1.0
- WFS BASIC profile:
  - GetCapabilities
  - DescribeFeatureType
  - GetFeature
- OutPutFormat: GML

**Developing**
- WFS version: 1.0.0
- WFS Transactional profile
- OutPutFormat: shapefiles, JSON
How it works

[WFS security]

1. Parsing response
2. Adapt response according to user filter
How it works

[WFS security]

1. Parsing response
2. Adapt response according to user filter
Demostration
Next improvement

- Ending full WFS integration
- Extending security to:
  - Web Processing Service
  - Sensor Observation Service
  - Web Application
- Updating the web administration interface, integrating Opelayers for CQL filters definition.
GeoShield advantages

- Single login for multiple services
- Centralized authentication management system
- CQL filters to control the access to single layers for WMS and WFS
- OGC standard compliant (manage standard requests)
- Simple set-up and easy user permission management
Any question?

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