

**A few mouse clicks away:**

# Configuration of deegree WCS, WFS and WMS with OpenJUMP



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# Agenda

- short introduction
- initial situation & requirements
- approach & realisation
- workflow at a glance
- features & plug-ins

# deegree

## .org

joint project between AG GIS, Dept. of Geography, Uni Bonn and lat/lon  
free software in terms of FSF: LGPL

## .aim

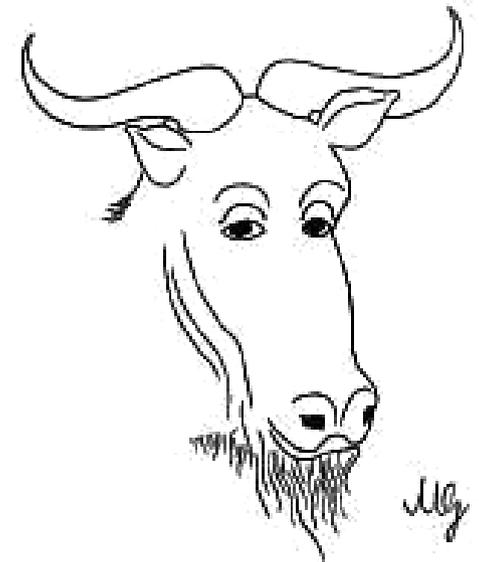
interoperability  
management of geospatial data  
setup of Spatial Data Infrastructure (SDI)

## .how

ISO-models and OGC-interfaces  
abstraction from data sources  
~ 2000 classes

## .now

most comprehensive implementation of OGC/ISO-standards in free software:  
WMS & WCS (OGC reference implementations), WFS, CSW, WTS/WPVS, WPS



<http://www.deegree.org/>

# initial situation & requirements

# Initial Situation

```

<UserDefinedSymbolization SupportSLD="1" UserLayer="1" UserStyle="1" RemoteWFS="1"/>
<!-- case: nested additional and default frames -->
<!-- TOP LAYER. As you are able to nest Layers as in this example please always make sure
that you have the appropriate number of opening layer tags <Layer> and closing layer tags </Layer> -->
<Layer queryable="0" cascaded="0" noSubsets="0" xmlns:app="http://www.deegree.org/app">
  <Title>deegree Demo WMS</Title>
  <!-- abstract and keyword are optional -->
  <Abstract>deegree demo WMS</Abstract>
  <KeywordList>
    <Keyword>deegree</Keyword>
    <Keyword>layer</Keyword>
  </KeywordList>
  <Layer>
    <!-- Just add the <SRS> you wish to support with your WMS -->
    <!-- default = EPSG:4326 -->
    <SRS>EPSG:25832</SRS>
    <SRS>EPSG:4326</SRS>
    <SRS>EPSG:31467</SRS>
    <!-- It is strongly recommended that you set a LatLonBoundingBox; further <BoundingBox>es are
optional. Each layer inherits the BBoxes of the parent layer as long as no explicit one is set. -->
    <BoundingBox SRS="EPSG:25832" miny="5214907" maxy="6125958" minx="2998821" maxx="4203082" />
    <BoundingBox SRS="EPSG:31467" miny="5214907" maxy="6125958" minx="2998821" maxx="4203082" />
    <BoundingBox SRS="EPSG:4326" miny="42" maxy="56" minx="4" maxx="17" />
    <LatLonBoundingBox miny="42" maxy="56" minx="4" maxx="17"/>
    <!-- default 0 ; 9E99 -->

```

- intended for: system administrators, GIS users without IT background, education
- challenging for beginners: complicated setup and customisation
- example of a "simple" deegree WMS configuration:
  - ./WEB-INF/web.xml
  - ./WEB-INF/conf/wms/wms\_configuration.xml
  - ./WEB-INF/conf/wms/styles.xml
  - ./WEB-INF/conf/wms/LOCALWFS\_capabilities.xml
  - ./WEB-INF/conf/wms/LOCALWCS\_capabilities.xml

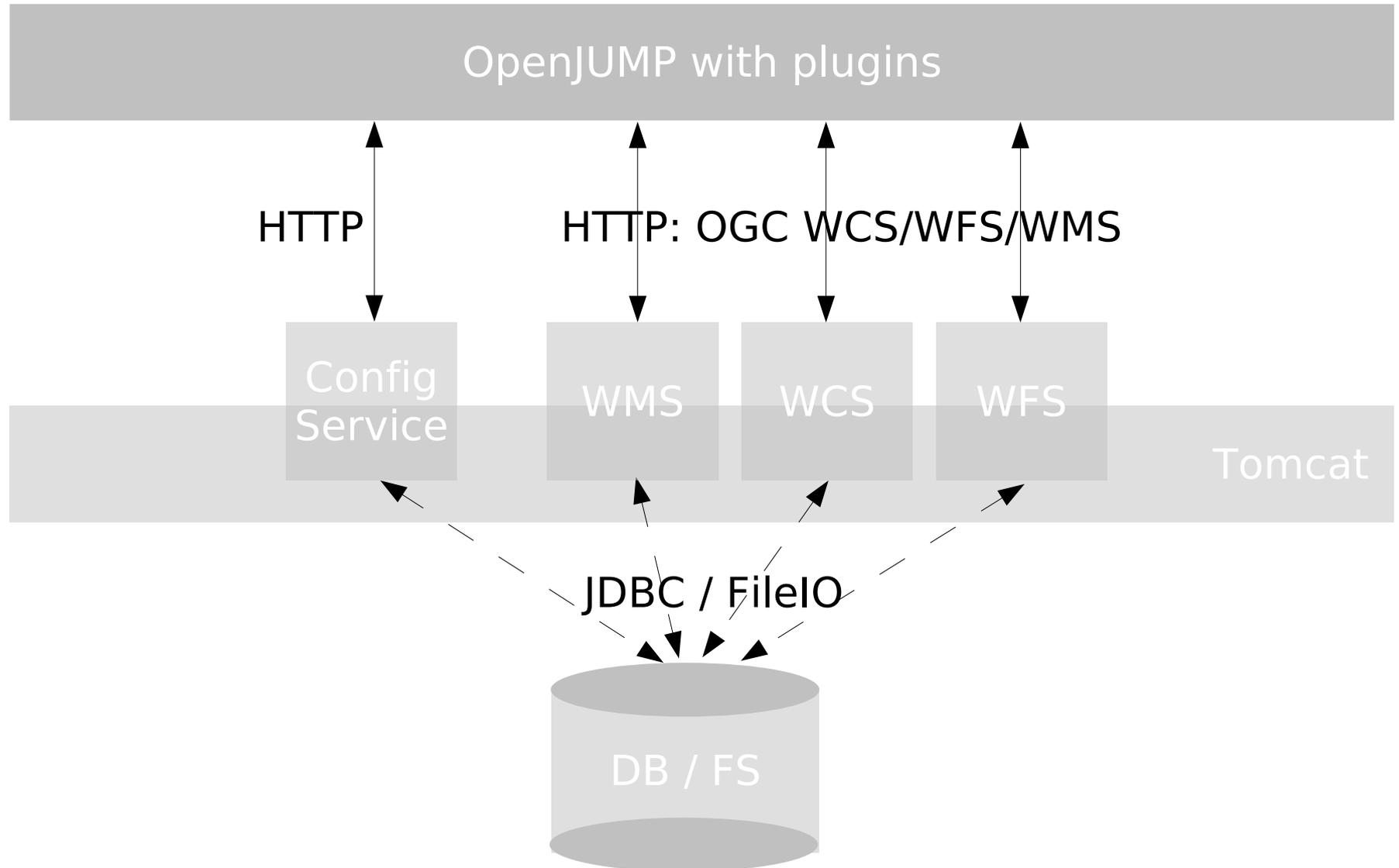
# Requirements: Configuration Tool

- decentralise service administration
- configure via HTTP (remote) and FileIO (locally)
- provide multi-user support and access-rights control
- use OpenJUMP as SKOWYSIWYG\* - map editor
- transfer geospatial data into a central PostGIS DB
- rename and select feature type attributes for responses of WFS::GetFeature and WMS::GetFeatureInfo
- SLD create, read, write, import, export
- edit service meta data

\* some kind of: what you see is what you get

# approach & realisation

# Concept

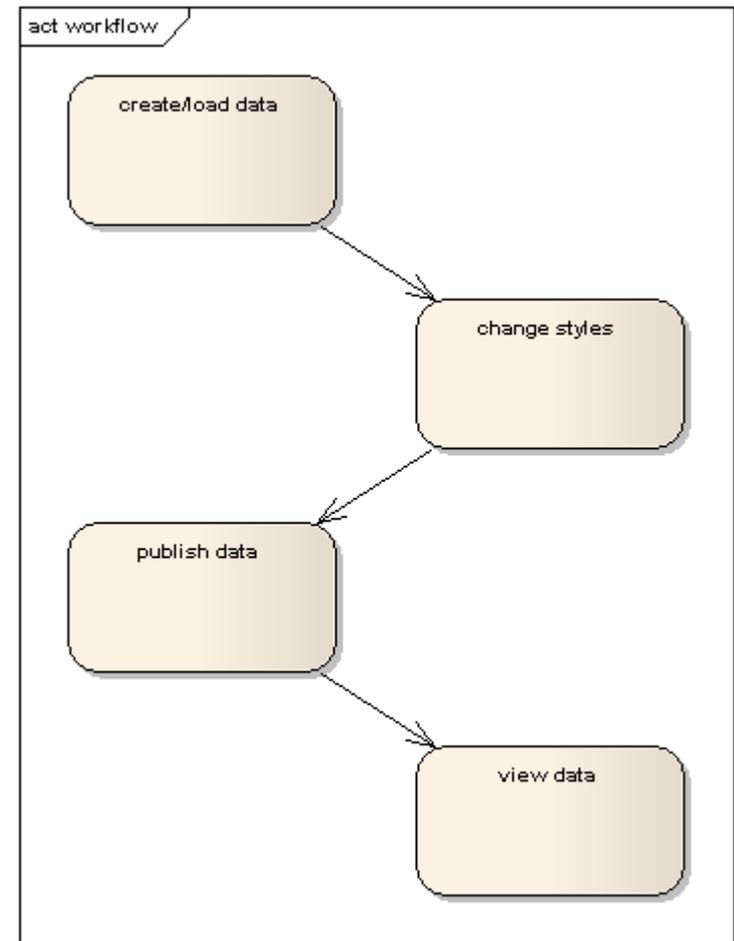




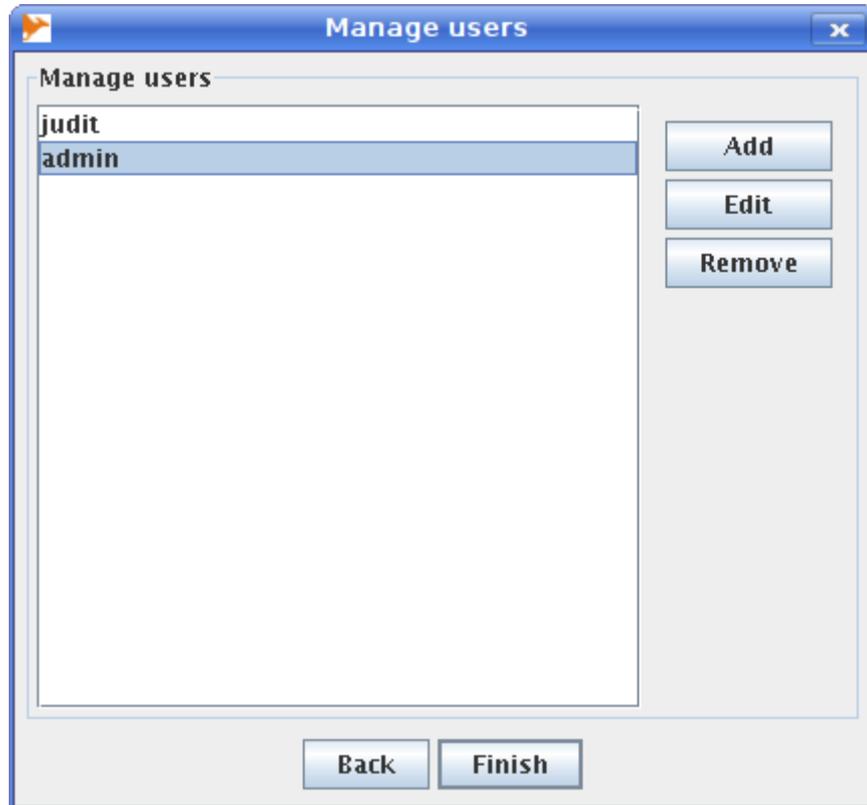
# workflow at a glance

# Workflow

- edit user data
- log in and administer services
- configure a Web Map Service
  - add layers
  - organise layers in a tree view
  - edit attributes and styles
- configure a Web Feature Service
  - add feature types
  - edit attributes of a feature type
- configure a Web Coverage Service



# Edit User Data

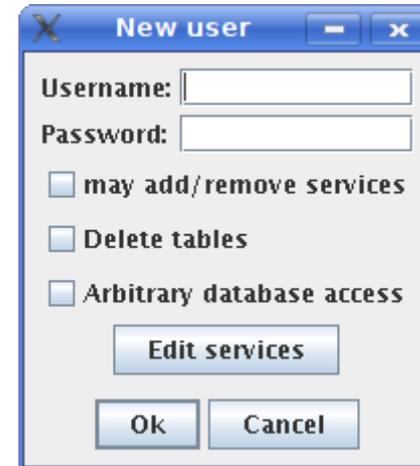


Manage users

judit  
admin

Add  
Edit  
Remove

Back Finish



New user

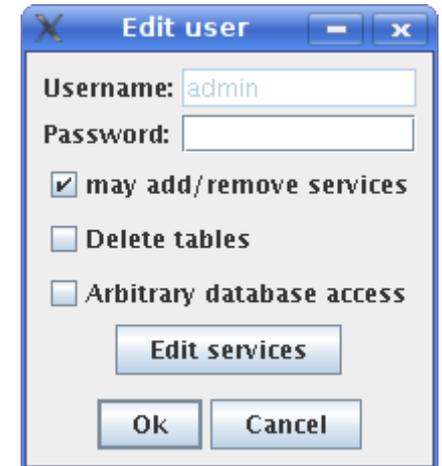
Username:

Password:

may add/remove services  
 Delete tables  
 Arbitrary database access

Edit services

Ok Cancel



Edit user

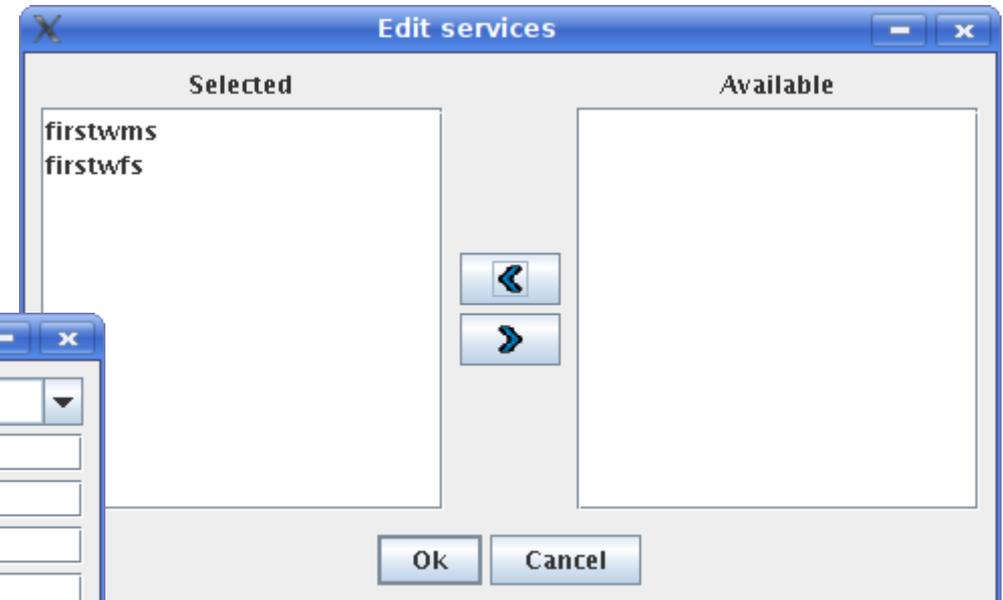
Username:

Password:

may add/remove services  
 Delete tables  
 Arbitrary database access

Edit services

Ok Cancel



Edit services

Selected Available

firstwms  
firstwfs

←  
→

Ok Cancel



Change password

Server:

Username:

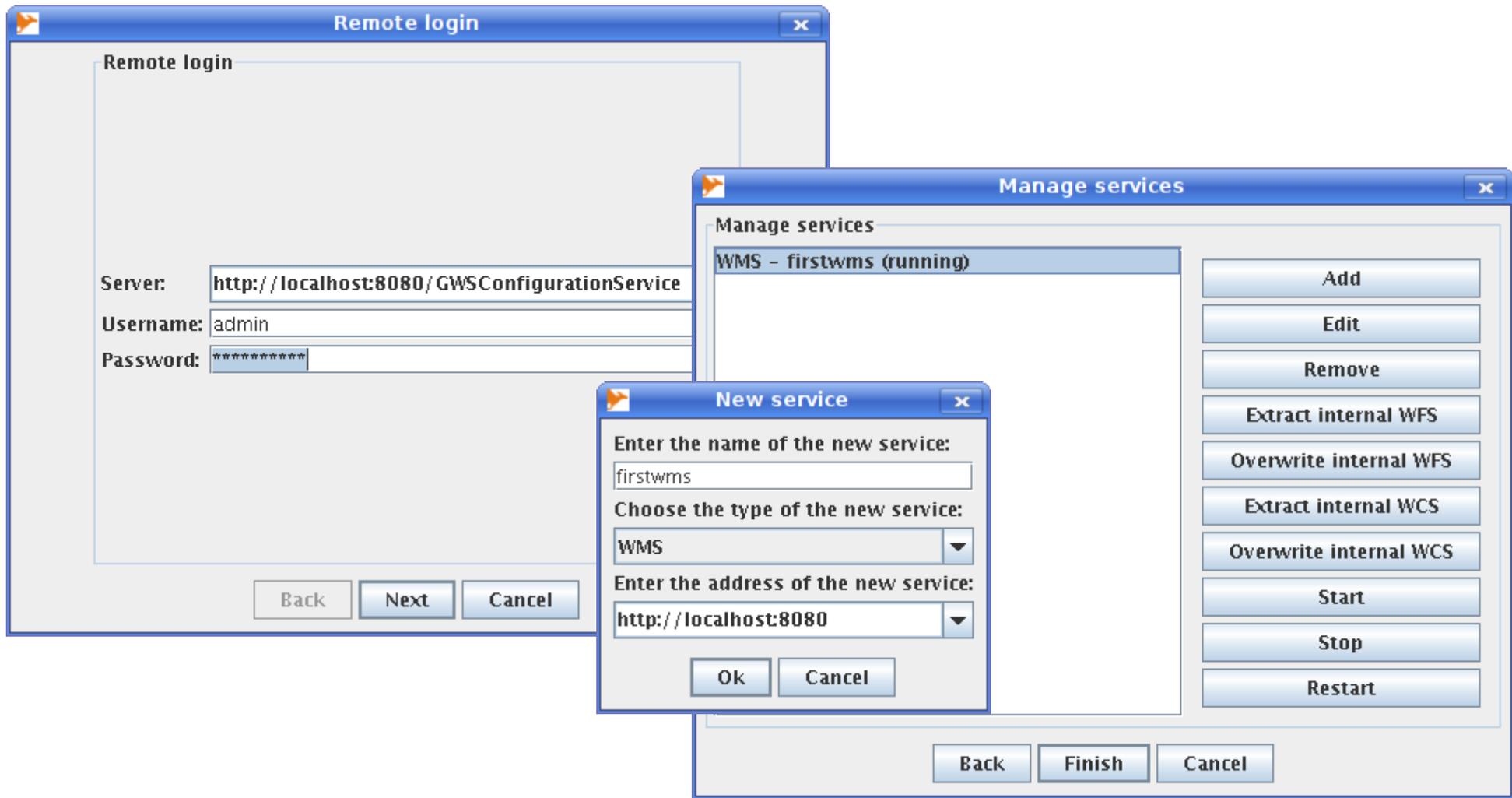
Password:

New password:

Repeat new password:

Ok Cancel

# Log in and Administer Services



# Edit Service Meta Data

**Edit WFS metadata**

Title:	cite:deegree wfs
Abstract:	wms reference implementation
Contact person:	Andreas Poth
Contact organization:	lat/lon
Contact position:	Technical Director
Address type:	XXXX
Address:	Aennchenstr. 19
City:	Bonn
Region:	NRW
ZIP code:	53177
Country:	Germany
Telephone:	0049228184960
Fax:	00492281849629
email:	info@lat-lon.de
Fees:	none
Access constraints:	none
Service address:	tp://localhost:8080/firstwms/services

Support for GetMap over HTTP GET **Formats**

Support for GetMap over HTTP POST **Formats**

Support for GetFeatureInfo **Formats**

Support for GetLegendGraphic **Formats**

**Edit exception formats**

**Ok** **Cancel**

**\$Message with key: WFSPropertiesPanel.par**

Title:	My deegree WFS
Abstract:	is my own personalized deegree WFS
Provider name:	lat/lon GmbH
Provider site:	http://www.lat-lon.de
Contact person:	Markus Schneider
Contact position:	deegree WFS core developer
Address:	Aennchenstr. 19
City:	Bonn
Region:	Northrhine-Westfalia
ZIP code:	53177
Country:	Germany
Telephone:	+49 228 184960
Fax:	+49 228 1849629
email:	schneider@lat-lon.de
Contact site:	http://www.lat-lon.de
Contact hours:	24x7
Contact instructions:	Don't call us. We'll call you.
Administrator:	PointOfContact
Service address:	tp://localhost:8080/firstwfs/services

**Ok** **Cancel**

# Configure WMS: Add New Layer

The screenshot displays the OpenJUMP software interface. The main window shows a map of the United States with a green overlay representing zip codes. The 'Layer' menu is open, and a context menu is visible over the map. The context menu options are:

- Manage users
- Change password
- Manage services
- Add to remote WMS configuration
- Add spatial data to WFS
- Add feature type to remote WMS
- Import style in remote WMS
- Add to local WMS configuration**
- Create local WFS configuration
- Create new coverage
- Edit local WMS
- Edit local WFS
- Edit local WCS

The 'Layer' menu options include:

- SGID500\_ZipCodes
- Editable
- Selectable
- Layer Properties...
- Rename Selected Layer
- Zoom To Layer
- Change Styles...
- Copy Styles
- Paste Styles
- View / Edit Attributes
- View / Edit Schema
- Save legend
- Image Layer Manager (Test)...
- Save Selected Datasets
- Refresh-Layer...
- Save Dataset As...
- Move Layer Up
- Move Layer Down
- Cut Selected Layers
- Copy Selected Layers
- Remove Selected Layers
- Add New Features...
- Paste Items
- Delete All Features
- Toggle Visibility
- Add to remote WMS configuration
- Add feature type to remote WMS
- Add to local WMS configuration**

The status bar at the bottom shows: 00:00:02 (Open...), 22 MB Committed ..., and (317551.3, 4701819.9).

# WMS: Edit Layer

**Layer properties**

Name:

Title:

Abstract:

Metadata URL:

Example: <http://host/services?request=GetRecordById&service=CSW&version=2.0.0&elementsetname=full&id=someid>

**Supported coordinate systems:**

Selected	Available
DHDN / Gauss-Kruger zone 2 (EPSG:31466)	DHDN / Gauss-Kruger zone 2 (EPSG:31466)
ETRS89 / UTM zone 32N (EPSG:31466)	DHDN / Gauss-Kruger zone 4 (EPSG:31466)
WGS 84 (EPSG:4326)	Amersfoort / RD New (EPSG:29902)
	ETRS89 / UTM zone 33N (EPSG:31466)
	DHDN (EPSG:4314)
	NAD83 / UTM zone 12N (EPSG:31466)

New CRS  
←  
→  
Edit bbox  
Remove

Minimal scale:

Maximal scale:

Data CRS:

Data source:

Style:

Ok Cancel

**Edit layer tree**

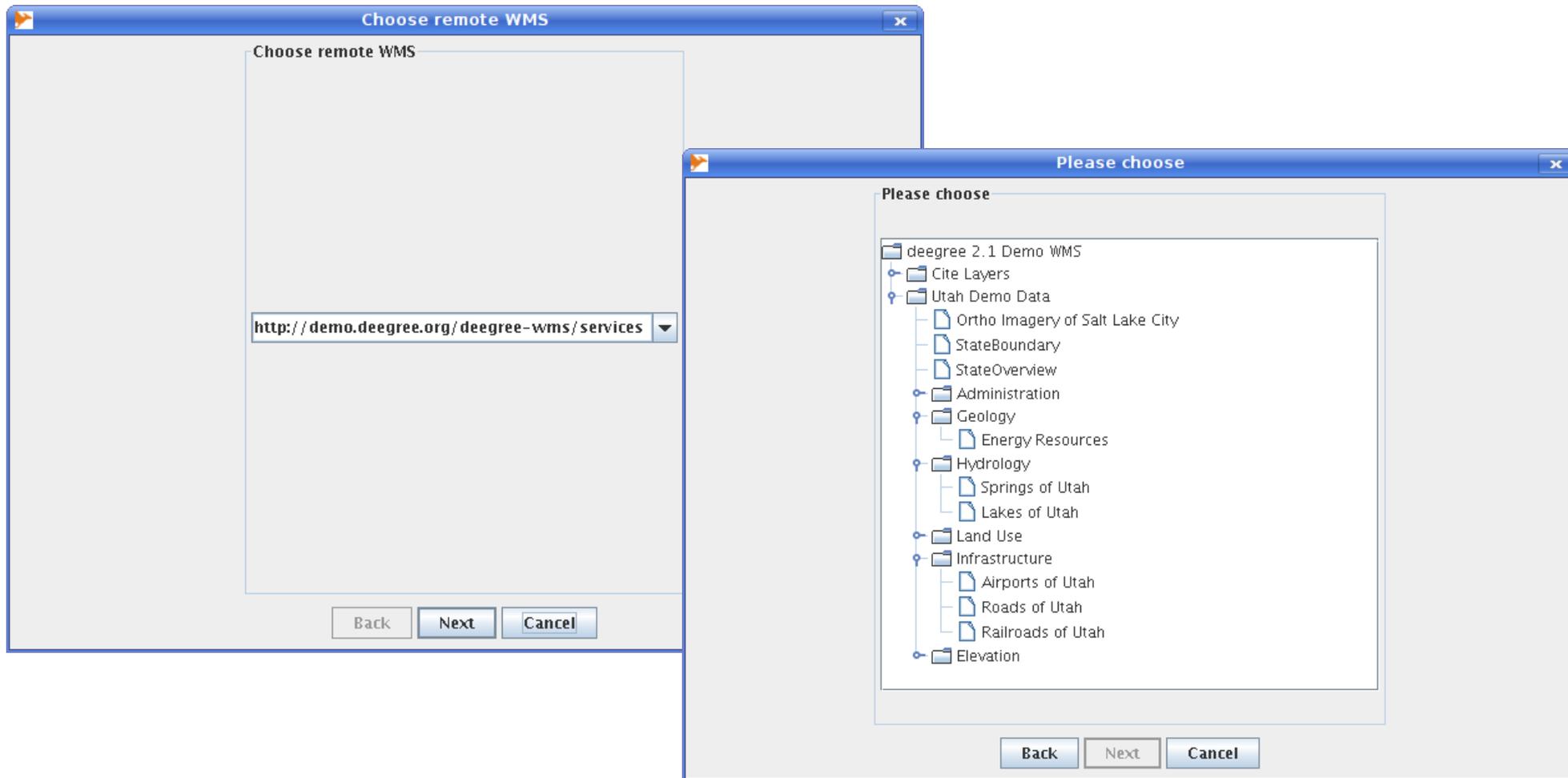
**Edit layer tree**

- deegree 2 WMS configuration template
  - vector
    - vg250\_sta
    - wfs\_vg250\_sta
  - raster
    - z2\_03\_05

New category  
Add WCS layer  
Add remote WMS layer  
Edit  
Remove  
Calc bbox  
Move up  
Move down  
Edit metadata

Back Finish Cancel

# WMS: Cascading Layers



# Configure WFS: New Feature Type

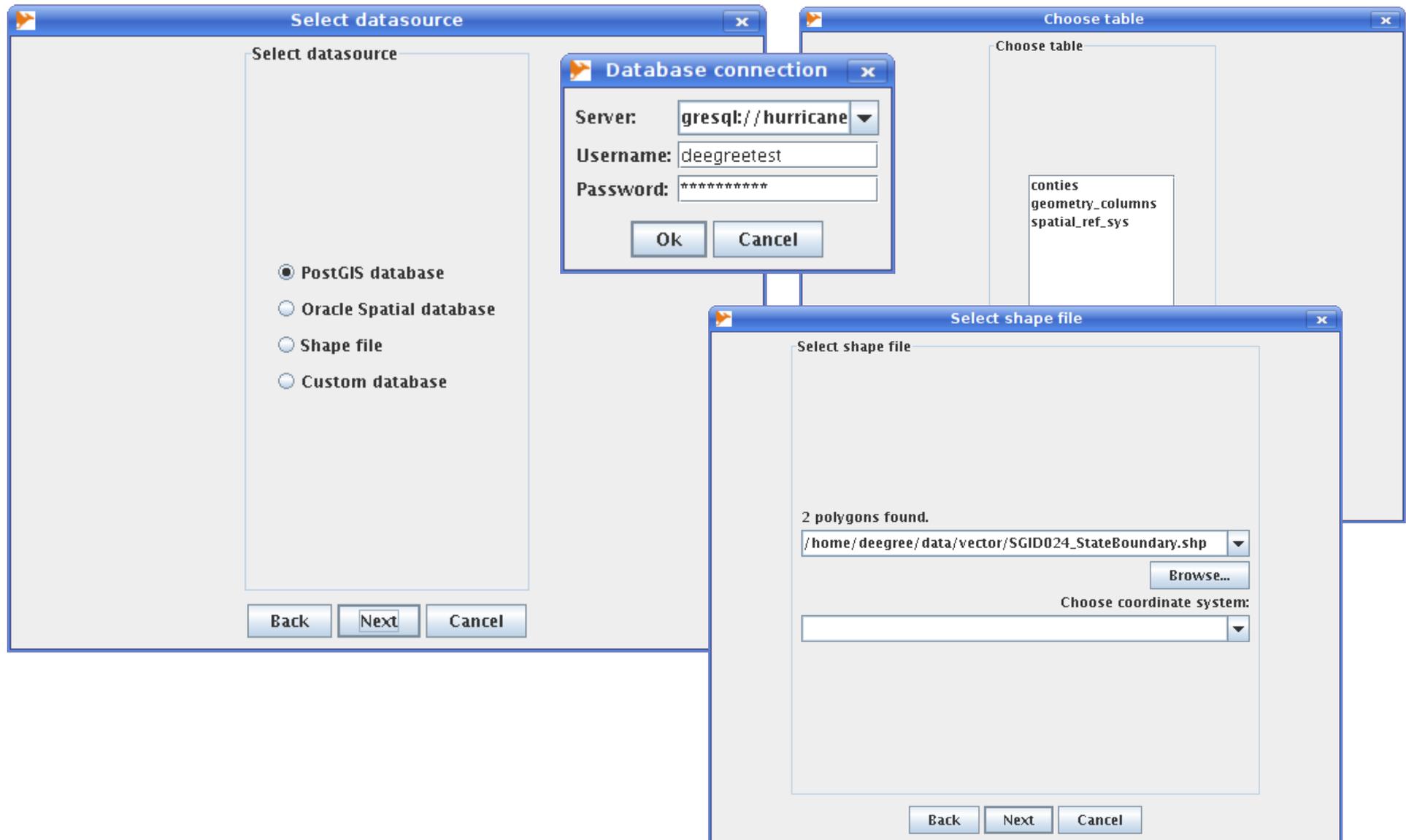
The screenshot shows the OpenJUMP application interface. The 'Create new feature type' dialog box is open, displaying the following information:

- Name: GN250
- Namespace: <http://www.deegree.org/app>
- File: GN250.xsd

The background shows the OpenJUMP interface with a map and a table of attributes for SGID500\_ZipCodes. The table is as follows:

FID	OBJECTID	ZIP	PO_NAME	STATE	SUMBLKPOP	POP1995
401	1	84313	Grouse Creek	UT	124.0	149
402	2	84329	Park Valley	UT	281.0	338
403	3	84336	Snowville	UT	1223.0	1401
404	4	84331	Portage	UT	267.0	299
405	5	84308	Cornish	UT	250.0	270
406	6	84320	Lewiston	UT	1867.0	2058
407	7	84333	Richmond	UT	2129.0	2235
408	8	84038	Laketown	UT	430.0	452
409	9	84321	Logan	UT	26587.0	34678
410	10	84028	Garden City	UT	254.0	284
411	11	84305	Clarkston	UT	665.0	711
412	12	84330	Plymouth	UT	299.0	335
413	13	84338	Trenton	UT	450.0	596
414	14	84335	Smithfield	UT	7597.0	9618

# WFS: Data Source for Feature Type



# WFS: Attributes of Feature Type

The image shows two overlapping dialog boxes from a GIS application. The 'Edit schema' dialog is in the background, and the 'Summary' dialog is in the foreground.

**Edit schema**

Name	Type	Enabled?
fid	VARCHAR	<input checked="" type="checkbox"/>
objectid	INTEGER	<input checked="" type="checkbox"/>
name	VARCHAR	<input checked="" type="checkbox"/>
fips	INTEGER	<input checked="" type="checkbox"/>

Delete  
 Insert  
 Update

Back Next Cancel

**Summary**

Remote configuration: firstwfs WFS  
Changed feature type: {http://www.deegree.org/app}:GN250 GN250.xsd  
Data source: From existing PostGIS table: counties  
Attribute: fid,objectid,name,fips

Back Finish Cancel

# Configure WCS: New Coverage

**Edit parameters**

Image directory:

Descent recursively into directory

Coverage name:

Output directory:

Output format:

Data srs:

World file type:

Interpolation method:

Max. tile size:

Number of levels:

Bit depth:

Image quality:

Create spatial index in database

Server:

Username:

Password:

**Select how to proceed**

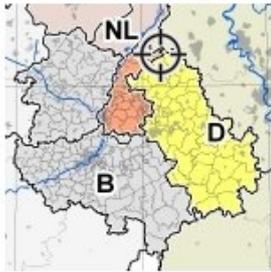
Select how to proceed

- Start process on configuration server
- Start process on local computer and wait
- Start process on local computer in the background
- Show call of RasterTreeBuilder

# Result: SDI Services

## Planen und Bauen

Home **Karte** Catalogue Hilfe



**Koordinatensystem**  
ETRS89/UTM z. 32N

x: 298542, y: 5670125  
x:  y:  OK

**Viewgröße** 1024x768

**Messen von:**  
 Länge  Fläche  
Länge: m  
Fläche: m²

**Maßstab:** 1: 25000  
**Maßstab** wählen

**Gemeinden**  
 OK

## Plannen en Bouwen



Willkommen **Mister Plannen**  
Konto bearbeiten plannen  
Abmelden

**Schloss Eismum**

- Plannen
  - Plangrenzen
  - DURPplannen punt
  - DURPplannen lijn
  - DURPplannen vlak
- Base vector
  - Wegen
  - Water
  - Provinciegrens
- Base raster
  - NRW base maps
  - NRW Übersicht
  - NRW 500
  - TK 100
  - TK 50
  - TK 25
  - DTK 10 G
  - DGK 5
  - Orthophoto
  - Luchtfoto

# Features & Plug-ins

- wizard-based user navigation
- SLD import and export
- data sources
  - ShapeFiles and CSV
  - MapInfo MIF/MID, including drawing rules
  - remote WMS layers
- WFS plug-in, deeJUMP plug-in, OWSConfig plug-in, Web Configuration Service (WCFGs)
- <https://wiki.deegree.org/deegreeWiki/ConfigTool>

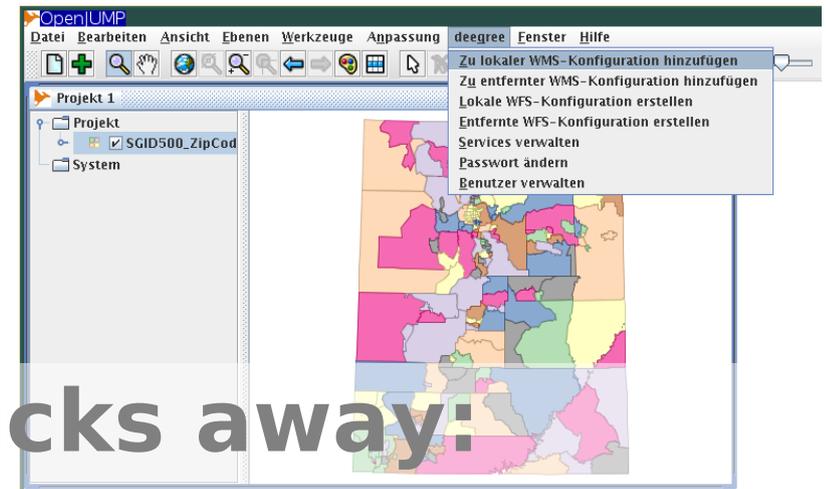
# Acknowledgement

The configuration tool has been supported by projects carried out in collaboration with:

- Federal Ministry of the Interior, Germany
- Free and Hanseatic City of Hamburg, Germany
- City of Bonn, Germany
- City of Wuppertal, Germany
- X-Border-GDI (Provincie Limburg, Netherlands)

# any questions?

A few mouse clicks away:



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