

GeoServer Install

Installation and Configuration of GeoServer



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I Introduction

GeoServer is Java Enterprise Edition application used to publish spatial information. It supports a number of Industry Standard protocols and also offers a REST API for configuration.

In this workbook we are going to install GeoServer and go over a couple of configuration options.

After completing this workbook, you will have:

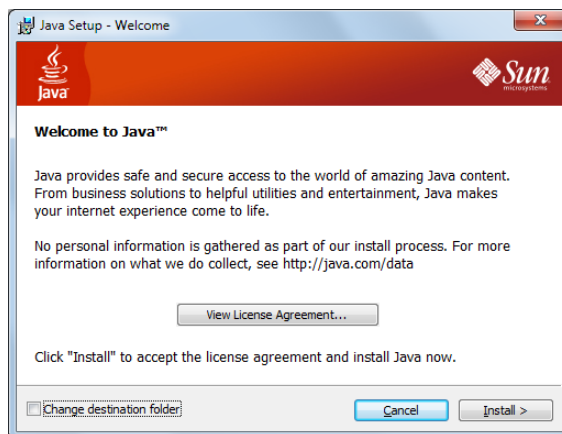
- Installed a Java Runtime Environment onto your computer
- Installed GeoServer using the Windows installer
- Started up and Customize GeoServer
- Started the Open Layers Tasmania Preview

2 Java Runtime Environment

GeoServer is a Java application – if you do not already have Java on your system please go ahead and install it now. Any version of Java 5 or newer will do fine.

GeoServer 2.0 has been rewritten to use the Wicket toolkit and is able to run with just a JRE.

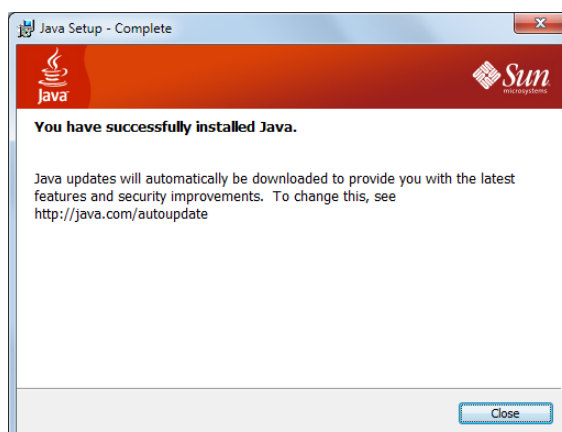
1. Download the latest Java SE Runtime Environment from oracle:
<http://java.sun.com/javase/downloads/>
At the time of writing jre_7u1-windows-i586.exe had just been released.
2. Double-click the installer (jre_7u1-windows-i586.exe is used in this example) and accept the license agreement.



3. Press the Install but to get going.



4. Congratulations Java is now installed.



3 GeoServer Install

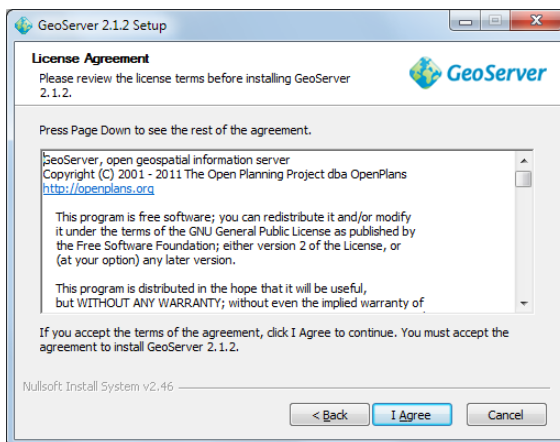
GeoServer can be installed as a windows service or as an application. We will be testing our GeoServer as a normal application.

1. Downloaded the latest GeoServer release:
<http://geoserver.org/display/GEOS/Stable>
As this workbook went to press we got a hold of geoserver-2.1.2.exe
2. Double-click the geoserver installer to start.

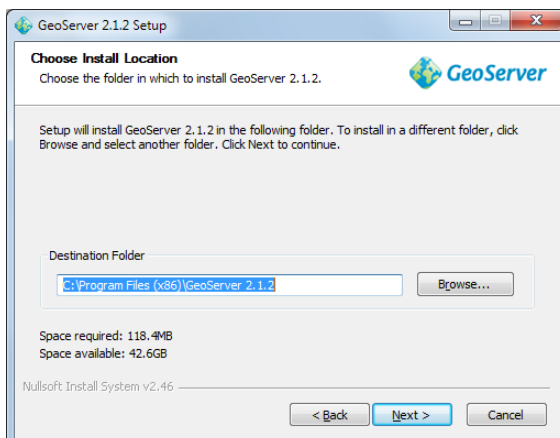


GeoServer uses the same LGPL GeoTools and ImageIO-Ext projects as uDig.

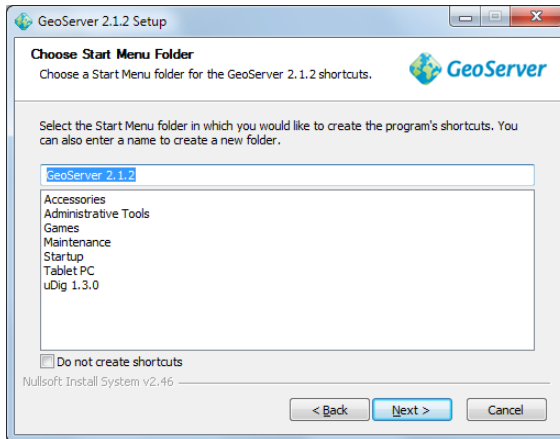
3. GeoServer is released under the GPL license, press "I Agree" to continue.



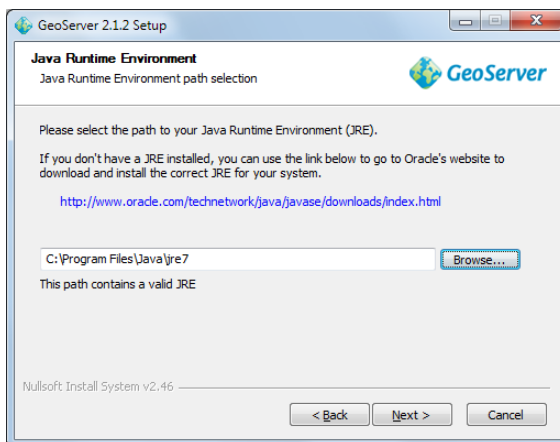
4. GeoServer will install into the **Programmers Files** directory, press **Next** to continue.



5. Press **Next** to create the default start menu folder



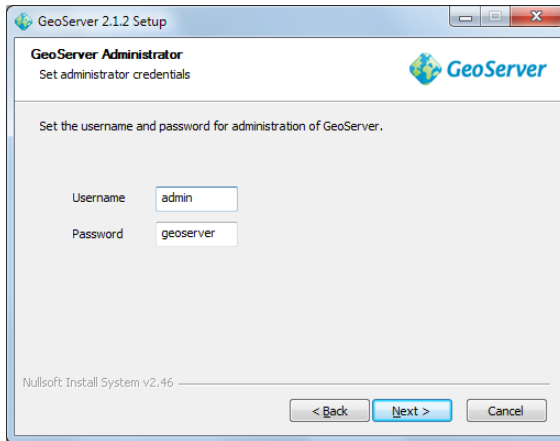
6. GeoServer select your current Java Runtime Environment. Press Next to continue.



7. GeoServer will store your configuration in a “data directory”, the default location will work fine. Press **Next** to continue.

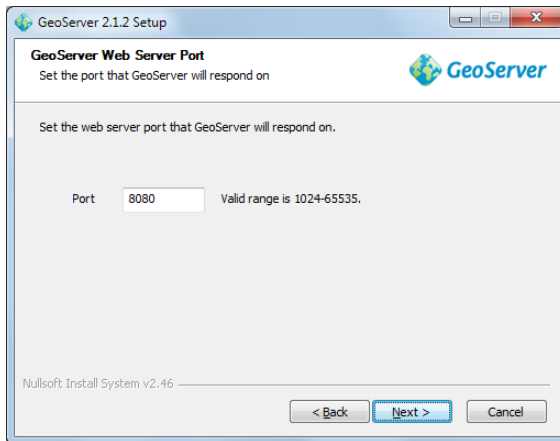


8. GeoServer provides a web based configuration system allowing you to administer the application remotely. Please accept the default credentials (admin and geoserver) for the purpose of this tutorial.

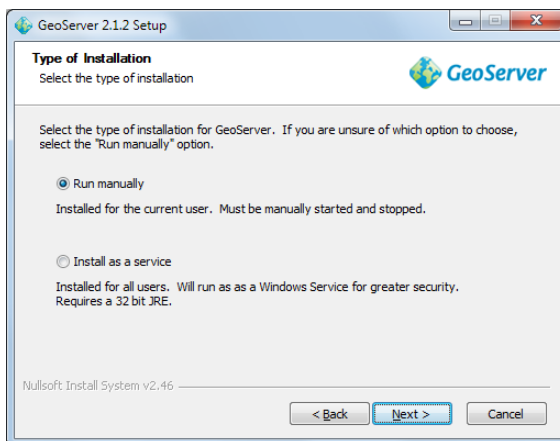


9. You can also choose the port for the service, 8080 will be fine for this tutorial.

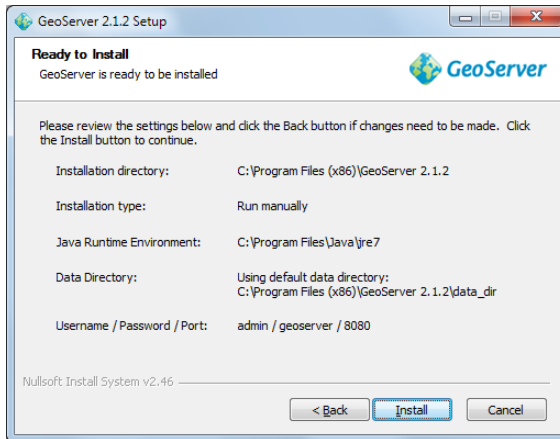
The GeoServer installer uses the Jetty application container. GeoServer is also available as a war if you would like to use Tomcat.



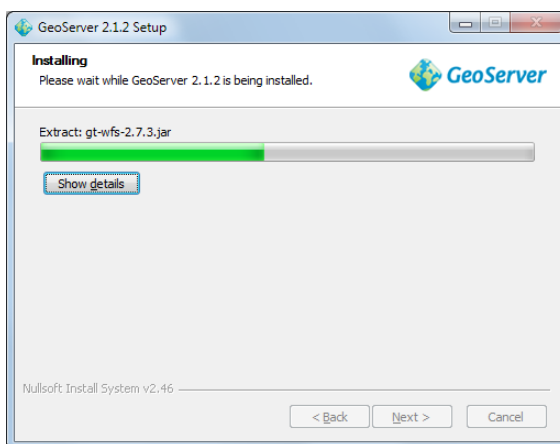
10. We now get to choose "Run Manually" (as we are just interested in evaluating GeoServer at this time).



11. You can review your settings and then press **Finish** to install GeoServer.



12. Please wait while GeoServer installs.



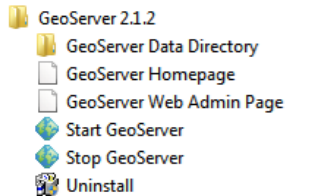
13. Thank you for installing GeoServer!



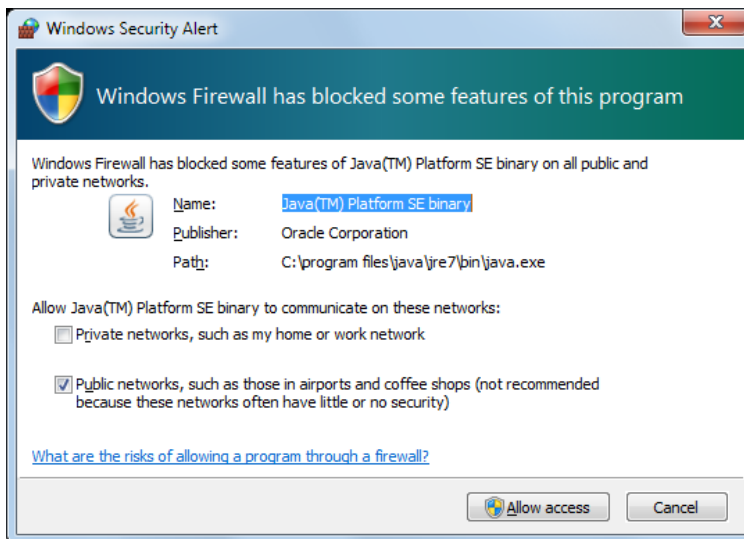
4 Starting up GeoServer

In this section you will learn how to start GeoServer, and explore its editing abilities.

1. Click Start->Programs >GeoServer 2.0.1 >Start GeoServer

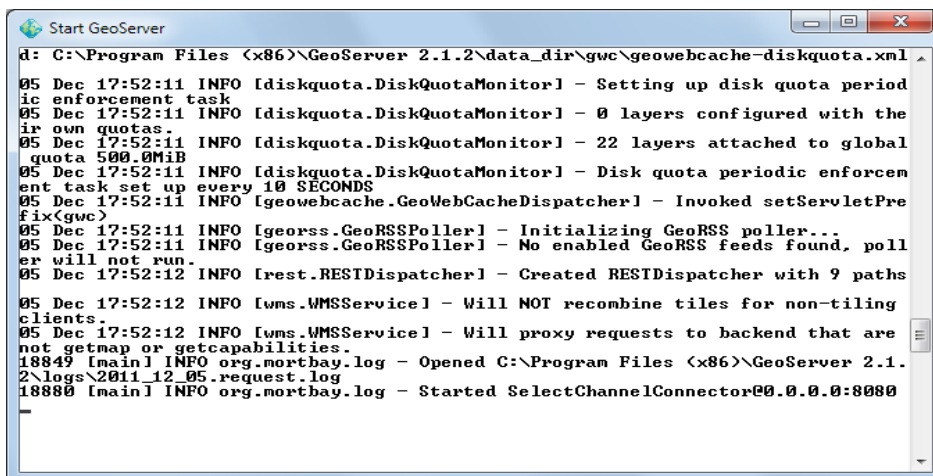


2. When starting for the first time you will need to grant the Firewall permission for GeoServer to open a port.

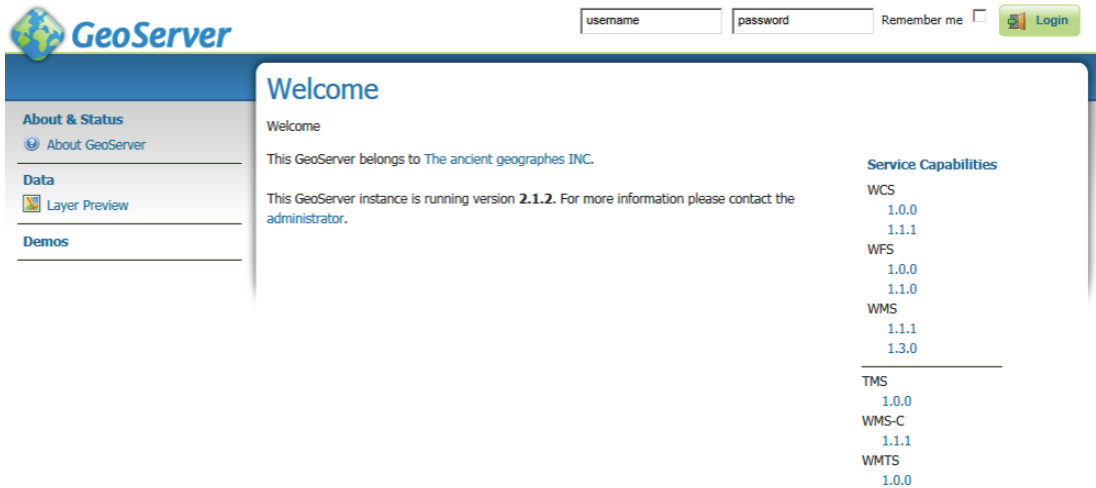


3. GeoServer will open up a console running the Jetty Application Server; please wait until Jetty indicates it is listening on port 8080 as shown below.

If you already have a web server running on 8080 you can modify the jetty xml file by hand.



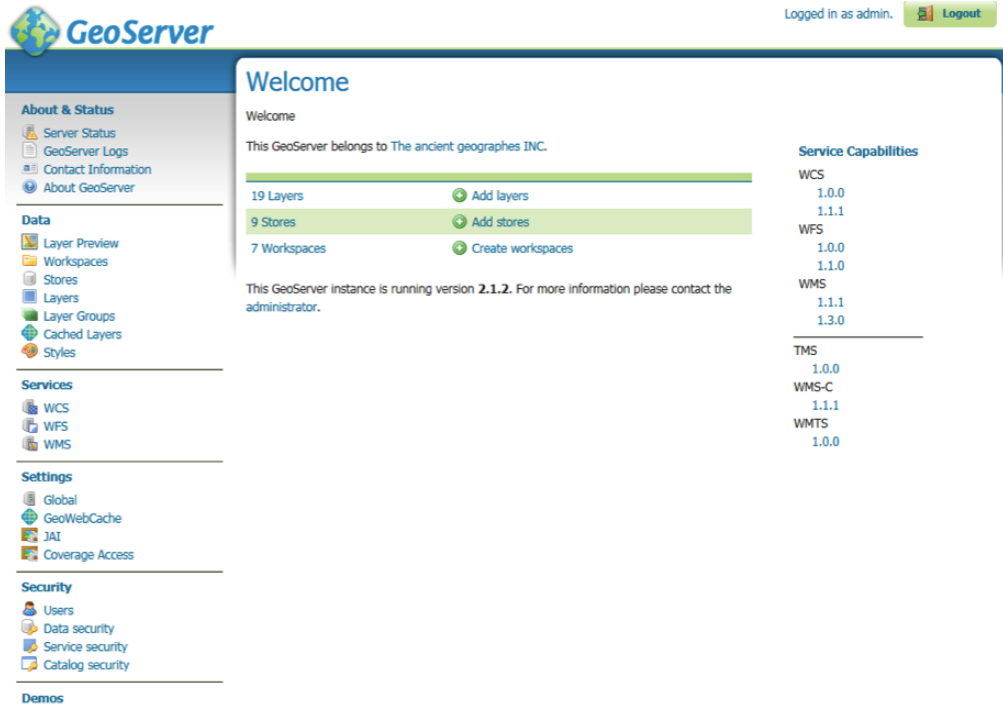
- You can use the start menu to open the “GeoServer Web Admin Page”.
The web browser will open: <http://localhost:8080/geoserver/web/>



- We need to login before we can use the configuration screen. Fill in “admin” and “geoserver” along the top of the screen and press “Login”.



- The welcome screen now has a great many more options than in previous versions.



- You may notice that this GeoServer belongs to “The ancient geographies INC”. Let us go in and fix that up.

- Click on **Contact Information** and fill in the details for your organisation.

The screenshot shows the GeoServer web interface. The top right corner indicates the user is logged in as 'admin' with a 'Logout' button. The left sidebar contains a navigation menu with categories: 'About & Status' (Server Status, GeoServer Logs, Contact Information, About GeoServer), 'Data' (Layer Preview, Workspaces, Stores, Layers, Layer Groups, Cached Layers, Styles), 'Services' (WCS, WFS, WMS), 'Settings' (Global, GeoWebCache, JAI, Coverage Access), 'Security' (Users, Data security, Service security, Catalog security), and 'Demos'. The main content area is titled 'Contact Information' and contains the following fields: Contact (Stephen Eger), Organization (CSIRO), Position (Innocent Bystander), Address Type, Address, City (Melbourne), State, ZIP code, Country (Australia), Telephone, Fax, and Email (dev@null.com). At the bottom of the form are 'Submit' and 'Cancel' buttons.

- Press the **Submit** button, you will be returned to the Welcome screen and you can see the contact organization has been changed.
- In a similar fashion change the title of the WMS to “Local Web Map Server”.

The screenshot shows the GeoServer web interface for configuring a Web Map Service. The top right corner shows the user is logged in as 'admin' with a 'Logout' button. The left sidebar is identical to the previous screenshot. The main content area is titled 'Web Map Service' and includes the following configuration options: 'Manage map publishing' (Service Metadata), 'Enable WMS' (checked), 'Strict CITE compliance' (unchecked), 'Maintainer' (http://jira.codehaus.org/secure/BrowseProject.jspa?id=10), 'Online resource' (http://geoserver.sourceforge.net/html/index.php), 'Title' (Local Web Map Service), and 'Abstract' (A compliant implementation of WMS plus most of the SLD extension (dynamic styling). Can also generate PDF, SVG, KML, GeoRSS).

5 OpenLayers Tasmania Preview

GeoServer provides a layer preview implemented with the **OpenLayers** AJAX library.

1. From the Welcome screen select **Layer Preview** from the list on the left.
2. From the Layers Preview page type "**Tasmania**" into the search box and press **enter**.
3. In the **tasmania** row click on the "**OpenLayers**" link.

GeoServer Layer Preview interface showing search results for 'tasmania'. The interface includes a sidebar with navigation options and a main content area with a search box and a table of layers.

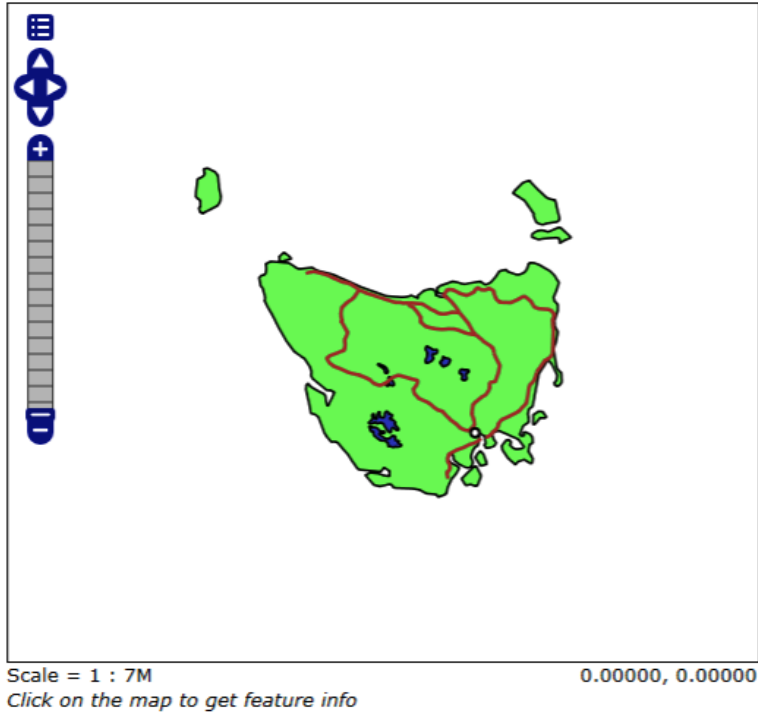
Type	Name	Title	Common Formats	All Formats
	topp:tasmania_cities	Tasmania cities	OpenLayers KML GML	Select one
	topp:tasmania_roads	Tasmania roads	OpenLayers KML GML	Select one
	topp:tasmania_state_boundaries	Tasmania state boundaries	OpenLayers KML GML	Select one
	topp:tasmania_water_bodies	Tasmania water bodies	OpenLayers KML GML	Select one
	tasmania		OpenLayers KML	Select one

4. Click on the highlighted OpenLayers link at the bottom to open a new tab. As this OpenLayers application is started up you can watch the GeoServer console respond to queries.

```
Start GeoServer
Bbox = ReferencedEnvelope[141.5126655 : 150.8012995, -45.683821806641 : -37.538125193359]
Env = {}
Angle = 0.0
CQLFilter = null
Elevation = NaN
FeatureId = null
Sld = null
SldBody = null
Crs = GEOGCS["WGS 84",
DATUM["World Geodetic System 1984",
SPHEROID["WGS 84", 6378137.0, 298.257223563, AUTHORITY["EPSG","7030"]],
AUTHORITY["EPSG","6326"]],
PRIMEM["Greenwich", 0.0, AUTHORITY["EPSG","8901"]],
UNIT["degree", 0.017453292519943295],
AXIS["Geodetic longitude", EAST],
AXIS["Geodetic latitude", NORTH],
AUTHORITY["EPSG","4326"]]
Exceptions = application/vnd.ogc.se_image
Version = 1.1.1
Request = GetMap
RawKvp = <EXCEPTIONS=application/vnd.ogc.se_image, BBOX=141.5126655,-45.683821806641,150.8012995,-37.538125193359, VERSION=1.1.1, FORMAT=image/png, SERVICE=WMS, HEIGHT=449, LAYERS=tasmania, REQUEST=GetMap, STYLES=, SRS=EPSG:4326, WIDTH=512>
Get = true
BaseUrl = http://localhost:8080/geoserver/
RequestCharset = UTF-8
```

This is the same map used as a reference point for the uDig "Walkthrough 2" tutorial.

5. This will bring up a web application put together with "Open Layers".



6 What to do Next

If you finish early here are some challenges.

- The “Sample Requests” demo lets you try out requests one at a time by selecting them from a List and hitting Submit.

Try out a GetFeature request by hand.

Try out WMS GetCapabilities and confirm the title is as you defined it.

- Turn down the amount of logging to let GeoServer run faster
- Advanced: Have a look at the “open layers” link for the Tasmania layer preview. Can you explain what trick Geoserver is doing.

How can you use GeoServer in your organisation?