WALKTHROUGH 1

uDig Install and Introduction

08 June 2008

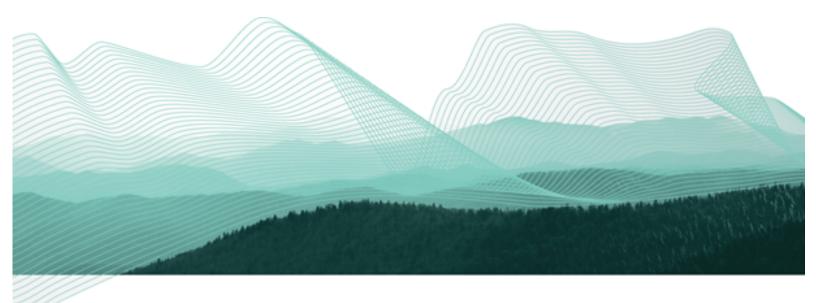




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1 INSTALLING AND RUNNING THE UDIG APPLICATION

In this section, you will install and run the Eclipse Application, which will be used for viewing map information.

Windows install:

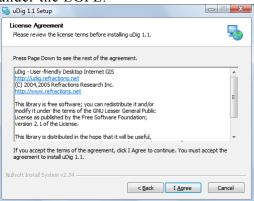
1. Double-click the installer udig1.1.exe (located in the same directory as this walkthrough)



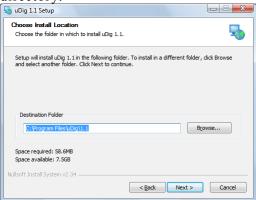
2. The installer will allow you to install uDig into the directory of your choice.



3. Agree to the License Agreement – uDig is made available under the LGPL.



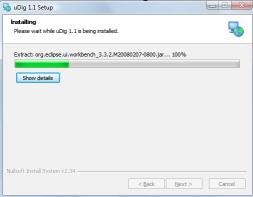
4. By default uDig will be installed into your Program Files directory.



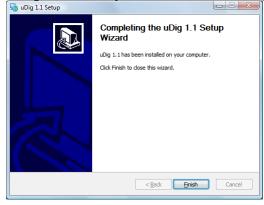
5. Shortcuts will be created in your start menu.

🚯 uDig 1.1 Setup	
Choose Start Menu Folder Choose a Start Menu folder for the uDig 1.1 shortcuts.	5
Select the Start Menu folder in which you would like to create the program's sho can also enter a name to create a new folder.	rtcuts. You
7-Zip Accessories activePDF Administrative Tools AVG Free 8.0 BHPIm Catalyst Install Manager Digsby	
Extras and Upgrades Games GeoServer 1.4.1	~
Nullsoft Install System v2.34	Cancel

6. Please wait while uDig is installed.



7. Congratulations you have installed uDig

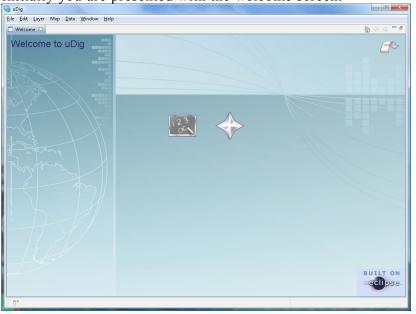


2 WELCOME

1. After completing the installation, run the uDig application from the Windows **Start->Programs** menu



2. Initially you are presented with the welcome screen.



3. The welcome screen contains a link to the **Getting Started** tutorial from the online documentation.



We cover the use of the online documentation in the next section

4. The welcome screen contains a link to the Official Website



5. To continue click on the **Workbench** arrow in the top right corner of the uDig welcome screen.



You can return to the welcome screen at any time using the Help menu.



3 ONLINE DOCUMENTATION AND TUTORIALS

In this section you will open up the online tutorial, and access reference information.

1. Open up the Help menu and select Help Contents



2. This will bring up the online help system; the help system is a web application that makes use of a **Contents** view to allow you to navigate between **Pages**.



😤 Refresh / Show Current Topic

Can be used to find your place in the table of contents

🖄 Show in Table of Contents

Can be used to find your place in the table of contents

- 3. The Contents view organizes Pages into Books. The following books are included with the uDig application
 - User Guide
 - Live User Guide live access to the uDig web site

Additional books may be available depending on the community plug-ins you have installed.

You can access the tutorials directly by pressing "Getting Started" on the welcome screen.

If you have the windows firewall enabled you will need to allow the help application to startup.

P Windows Security Alert					
Windows Firewall has blocked some features of this program					
unblock	Windows Firewall has blocked this program from accepting incoming network connections. If you unblock this program, it will be unblocked on all private networks that you connect to. What are the rates of unblocking a program?				
	Name:	Java(TM) 2 Platform Standard Edition binary			
	Publisher:	Sun Microsystems, Inc.			
	Pat <u>h</u> :	C:\program files\udig\1.1-rc11\edipse\jre\bin\javaw.exe			
	Network location:	work location: Private network			
	What are network locations?				
		Keep blocking 🛞 Unblock			

3.1 HELP CATEGORIES

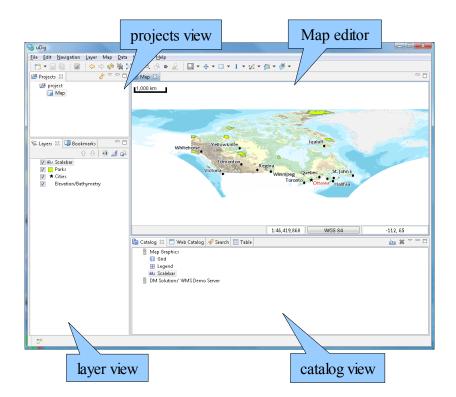
You can access additional reference information in the following categories:

🗐 uDig User Guide	This section contains tutorials that will help users to familiarize	
🗉 💷 Getting Started	themselves with UDIG and its user interface.	
🗉 💷 Concepts		
🗄 💷 Tasks	At this time there is one tutorial available:	
🗄 💷 Reference		
🗄 💷 FAQ		
Concepts		
uDig User Guide	High-Level description of ideas, architecture. Provides	
🖃 💷 Getting Started	background information to understand what is going on.	
Concepts		
H III Tasks		
	Related concepts	
E E FAQ		
 uDig User Guide Getting Started Concepts Tasks 	Task descriptions are step by step instructions for performing specific actions and tasks in the Workbench. For example, the Tasks section contains step by step instructions for connecting to a Web Map Server, and for adding a layer into a Map.	
 Image: A sector of the sector	Related tasks	
🗄 💷 Reference	Related tasks	
Reference	 Related tasks Related reference 	
Beference FAQ Reference U U FAQ		
Reference	Related reference	
P Reference FAQ FAQ User Guide Getting Started		
P Reference FAQ FAQ Dig User Guide Getting Started Goccepts	Related reference	
Reference FAQ Dig User Guide Getting Started Concepts Tasks	 Related reference <u>Views and editors</u> 	

4 THE WORKBENCH

Before we start playing with maps, let's take a look at the default layout of the uDig workbench and what some of the key components are.

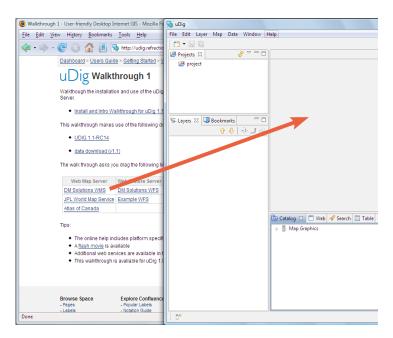
Shown below is a typical session of uDig with the Map, Projects, Layers, and Catalog views labeled. These views will be described further as we demonstrate their uses.



5 CONNECTING TO A WEB MAP SERVER

In this section you will learn how to drag and drop a Web Map Server (WMS) link into uDig for the purpose of viewing its layers.

- 1. There are many ways to load map data into uDig, including drag and drop. To drag a Web Map Server (WMS) link into uDig, open up a web browser.
- 2. Please connect to the Walkthrough 1 page with your web browser:
 - http://udig.refractions.net/confluence/display/EN/Walkthrough+1
- 3. Click and drag the DM Solutions WMS link from the web page onto the Layers View on the left, and drop it there.



If working with your windows maximized: 1) Drag from the web browser 2) Hover on the uDig application in the windows task bar 3) Drop into the Map area. 4. The Add Layers a wizard will appear asking you what layers from this WMS you want to show in your map. Select Elevation/Bathymetry, Parks, Cities and press the Finish button.

😼 Add Data	
Resource Selection Please select a resource.	+
DM Solutions' WMS Demo Server DM Solutions' WMS Demo Server D Elevation/Bathymetry US Lakes Lakes A Federal Limit Grid US Land V Parks V K Cities	E
Resources Selected: 3 < Back Next >	inish Cancel

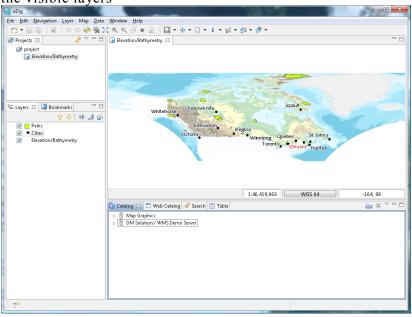
5. The map layers will now **render** in the Map view. Notice the bottom right corner of the uDig Application will display a **processing notice** while it is requesting and drawing the layers.

🔜 uDig		
<u>File Edit Navigation Layer Map Data</u>		
	<u>दे थ. थ. थ. थ. वि. म. वि. म. वि. म. थ. म</u>	
	Elevation/Bathymetry 🛛	- 8
Project		
🖫 Layers 🛛 🛄 Bookmarks 👘 🗖		
ት 🕀 🙃 ⊿ 🔗		
✓ Parks ✓ ★ Cities		
Elevation/Bathymetry		
	1:46,419,868 WGS 84	-155, 98
	📴 Catalog 🗵 🗖 Web Catalog 🔗 Search 📰 Table	<u>≥</u> × [∨] − □
	B Map Graphics DM Solutions' WMS Demo Server	
	rendering prog	gress
□ *	Rendering Map: Elevation/Bat	thymetry 🛛 💽 🦉

You can press on the button next to the progress monitor to watch detailed information (and cancel) rendering requests.

Rendering Map: Parks 📃 🖉

6. When the layers are done rendering, the **Map** view will display the visible layers



- 7. Now that you have some data on screen try the following tools:
 - Q Zoom Tool: (keyboard short cut Z) Click or drag the left button to zoom in, or right button to zoom out.

 - 🔀 Extent Tool: Press to show all
- 8. The Layers view shows the order in which layers are drawn. Please select the Cities layer and press the Move up button from the Layer view toolbar.



9. The order is now changed.

🔂 Layers 🔀	💷 Bookmarks	- 8
	ት 🗘	0 🔟 🔗
🔽 🖈 Citi	ies	
🔽 📃 Parks		
🔽 Elev	vation/Bathymet	ry 🛛

When using the zoom or pan tools the mouse scroll wheel can be used to zoom in and out quickly.

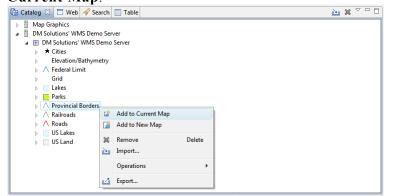
You can also drag layers up and down in the layer view to change the order.

6 ADDING LAYERS FROM THE CATALOG VIEW

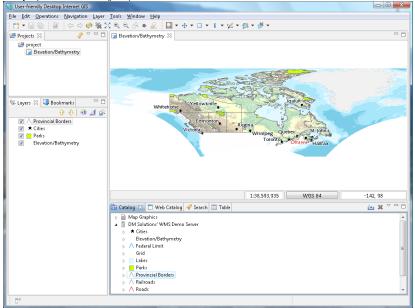
In this section you will learn how to add additional layers to your map from a previously connected data source (the DM Solutions WMS).

Adding a Layer from a previously connected WMS:

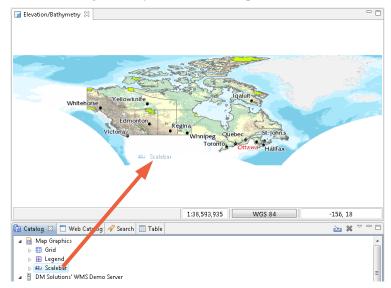
1. In the **Catalog** view of uDig (center bottom), expand the connection you have to **DM Solutions' WMS Demo Server**. Right-click on the **Provincial Borders** layer and select **Add to Current Map**.



2. The new layer will appear in the **Layers** view, and it will automatically start to render. When it finishes rendering, you should see black lines representing the provincial borders on the map (the new layer).



 The catalog also comes equipped with a built in service called "Map Graphic". Select Map Graphic > Scalebar in the Catalog view and drag this layer onto the Map



Map Graphics are also available directly from the Layer menu.



7 ADDING A LAYER FROM POSTGIS

This section shows how you can add a Layer from a PostGIS table. PostGIS is an extension to the popular open source PostgreSQL database. uDig handles other databases like Oracle and DB2 in a similar manner:

- 1. In the File menu, select New -> New Map.
 - IDig

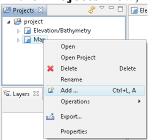
 File
 Edit
 Navigation
 Layer
 Map
 Data
 Window
 Help

 New
 Image: Close
 Ctrl+W
 Image: Close
 Image: Close
 Image: Close
 Image: Close

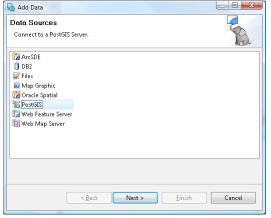
 Close
 Ctrl+W
 Image: Close
 Image: Close
 Image: Close
 Image: Close

 Image: Close
 Ctrl+W
 Image: Close
 Image: Close
 Image: Close

 Image: Close
 Ctrl+S
 Image: Ctrl+S
 Image: Ctrl+S
- 2. In the **Projects** view, right-click on **Map** and select **Add**.



3. Select PostGIS as the data source and click Next.



Your instructor has set up a local PostGIS for you to use:

Host: localhost Port: 5432 Username: postgres Password: postgres Database: example

4. Enter the following connection information: **Host:** <u>www.refractions.net</u>

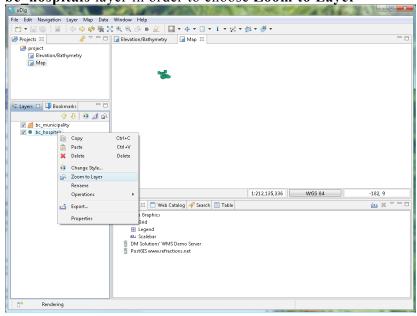
	Port:	5432		
Usern	ame:	demo)	
Passv	vord:	demo)	
Data	base:	demo	o-bc	
Ndd Data				
PostGIS Connect to a Post	BIS Server.			
Host: Username:	www.refraction	is.net	T	Port: 5432
Password:	••••			
Database:	demo-bc		Ŧ	
Schema:	public		*	
Advanced				
	< <u>B</u> ack	<u>N</u> ext >		<u>Finish</u> Cancel

- 5. Once the connection information is entered press Next.
- 6. Select only the **bc_hospitals** and **bc_municipality** data, and click **Finish**.

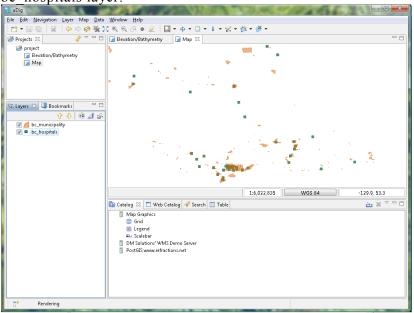
Resource Selection	+ 1 -
Please select a resource.	12
 PostGIS www.refractions.net bc_hospitals 	
🔽 📶 bc_municipality 🥅 🔹 bc_pubs	
 Ic_roads Ic_voting_areas 	
🥅 🔽 issues 🥅 🔽 jpox_tables	
< <u>B</u> ack <u>N</u> ext >	Einish Cancel

7. It may take a short while to fully render since you are zoomed out so far.

 Head on over the the Layer view and right click on bc_hospitals layer in order to choose Zoom to Layer



9. The map will now zoom in to show the extent of the bc hospitals layer.



10. You can return to your previous position in the world by selecting Back in the Navigation menu.



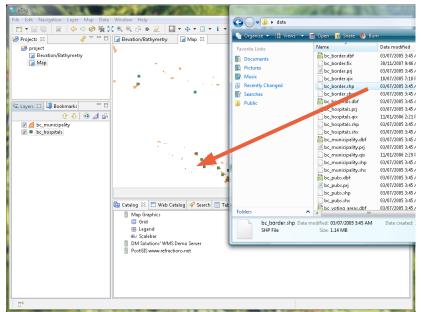
Zoom to Layer is very useful when adding new layers that happen to be off screen or not visible at the current scale.

You can also select Back on the tool bar, a history of your position is kept similar to a web browser.

8 WORKING WITH FILES

You can work directly with files from the file system:

- 1. Please connect to the Walkthrough 1 page with your web browser:
 - http://udig.refractions.net/confluence/display/EN/Walkthrough+1
- Click on the data "data download" link and save the zip file to your local computer. At the time of writing the file was:
 - <u>http://udig.refractions.net/docs/data-v1_1.zip</u>
- 3. Unzip the download to create your **data** directory. The **7-Zip** application is recommended.
- 4. Drag and Drop the file **bc_border.shp** onto your open **Map**



5. This provides a bit of context for your PostGIS layers. When working with uDig you will often find yourself combining information from several different sources.

You instructor has placed the data directory in your lab folder.

9 IMPORT DIRECTLY TO THE CATALOG

Earlier we learned how to work with content from the Catalog view, in this section we will import content directly into the catalog.

- 1. On the Catalog View please press the Import button:
 - Interface
 Web Cashing
 Seach.
 Table
 Import

 > [maps: Mb Straphet]
 Import
 Import

 > [maps: Mb Straphet]
 Import

 > [maps: Mb Straphet]
 Import
- 2. Select Data and press Next.

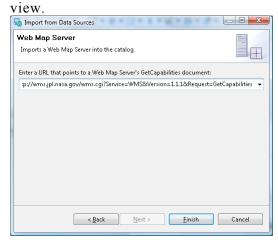
s Import	
Select	
Import from a data source.	
Select an import source:	
type filter text	
🚺 Data	
< Back Next >	Finish Cancel

3. Please choose Web Map Server from the list and press Next.

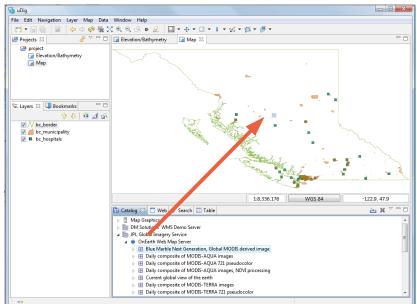
🎭 Import from Data Sources
Data Sources Imports a Web Map Server into the catalog
Image: Constraint of the second se
<back next=""> Einish Cancel</back>

You can copy this URL from the walkthrough page

- 4. This time we are going to import the JPL World Map Service from the following Capabilities document:
 - http://wms.jpl.nasa.gov/wms.cgi?Service=WMS&Version=1.1.1&Request=GetCapabilities
- 5. Press Finish to import the Web Map Server into the Catalog



6. Now that we have imported the WMS into the catalog we can add it to our Map. Please Drag and Drop the Blue Marble, Global MODIS derived image layer directly onto Map2



- The JPL server is very busy; if the layer does not render you can look for a warning in the status bar. If this happens to you please try another layer.
- 7. Earlier we used the the layer view to reorder using the up and down buttons, this time we will drag the layers into the right order. Select the Blue Marble layer in the layer view and drag it to the bottom of the list.



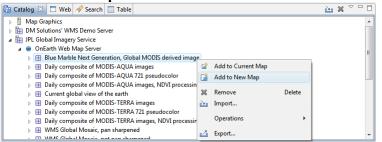
Try dragging a layer from the catalog view directly into the layer

view.

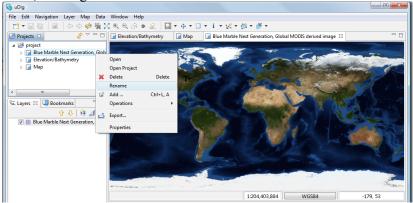
10THEMED DATA

Some data contains attributes we may use to thematically style a layer. In this section we will create a "Styled Layer Descriptor" (SLD) with the uDig **SLD Editor** in order to interpret these attributes:

1. In the **Catalog** view of uDig (center bottom), under the "JPL Global Imagery Service" tree, right click on "**Blue Marble Next Generation, Global MODIS derived image**" and select Add to New Map.



2. That new map has an awfully long name, select in the project view, and right click to choose **Rename**.



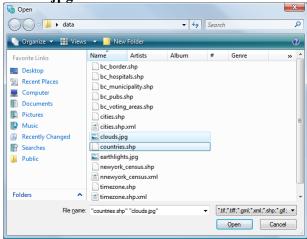
- 3. Enter the name "Blue Marble" and press OK.
- 4. In the Layer menu, select Add...

5. Choose Files from the provided list and press Next:

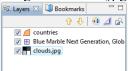
Add Data	
Data Sources	
Open one or more files	
ArcSDE	
G Files	
🔤 Map Graphic	
🚰 Oracle Spatial 📽 PostGIS	
Web Feature Server	
👫 Web Map Server	
< Back Next >	Einish Cancel

6. Select the following files from the data directory: **countries.shp**





- 7. Press Open and **both** layers will be added and rendered with a default style.
- 8. Drag the clouds.jpg layer to the bottom of the layer view.



- 9. The default style for the **countries** layer is slightly transparent so you can still see the pretty WMS layer underneath.
- 10. Right click on the countries layer and select Change Style

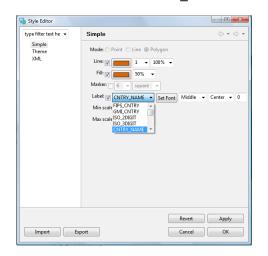
😘 Layers 🔀 🛄 Bo	okmarks		
	∂ ₽	0 🔟 🔗	
Countries	Co	ору	Ctrl+C
Clouds.jpg		iste	Ctrl+V
	💥 De	elete	Delete
	\rm O	hange Style	

You can experiment with other settings, use the Set Font button to change to a lighter color that will show up against the WMS layer.

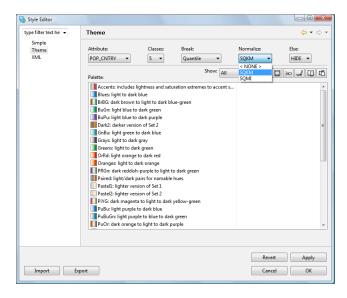
These options will color the countries layer by population density.

11. The Style Editor is arranged into a series of pages, you can use the **Simple** style page to add labels to the countries **layer**.

- Check the box next to Label
- Choose "CNTRY NAME" from the list.



- 12. You can press the **Apply** button to see what your map will look like with labels.
- 13. Please switch to the **Theme** style page and select the following options:
 - Attribute: POP_CNTRY
 - Normalize: SQKM



These options show palettes which are a ramp of color suitable for viewing by color blind people on either an LCD or CRT monitor.

- 14. Filter the available colour palettes to show a subset of those available:
 - Changing from show "All" to show "Sequential"
 - Press the Colour-blind, LCD and CRT buttons
 - Select the "light orange to dark red" palette

pe filter text he 🔻	Theme			
Simple Theme	Attribute:	Classes: Break:	Normalize:	Else:
XML	POP_CNTRY -	5 💌 Quantile	▼ SQKM ▼	HIDE 💌
	Palette:	Sł	how: 🛛 Sequential 💌 💽	
	OrRd: light orange	to dark red		
	Oranges: light to d			
	PuRd: light purple			
	VIORBR: light yellov	v to orange to dark brown		
				Suitab
	Opacity: 50% 🔻	Reverse	nove	•
	Outline None -			
	Colour Label	Values		
	0 to 11.1	011.1		
	11.1 to 41.8	11.141.8		
	41.8 to 93	41.8.93		
	93 to 222 222 to 5101	93.222 222.5101		
	222 to 5101	2225101		
			Revert	Apply

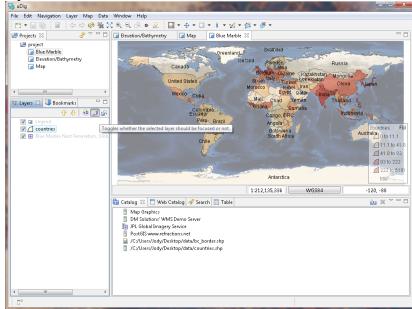
15. Press the **OK**button



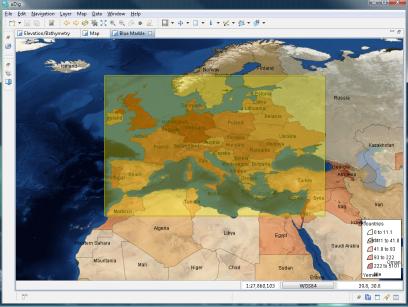
16. Open up the Layer menu and choose Legend

🎭 uDig		an and a sea
File Edit Navigation	Laye	r Map Data Window Help
1 - 2 - 2	Ľ	Add Ctrl+L, A
😕 Projects 🖾	Ľ	Create Ctrl+L, C
🥵 project		Legend
🝞 Blue Marble 🍞 Elevation/Bat 🚰 Map	22	Grid Scalebar Other
< <u> </u>	۲	Layer Summary Change Style

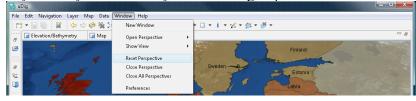
Mylar will fade out all the layers except for the one selected. 17. Press the **Mylar** button in the Layers View. Select each layer and observe the effect.



18. Double click on the **Blue Marble** map tab to maximize the editor. Try using the zoom tool to explore the world.



19. Double click on the Map tab to restore the previous size. You can use **Reset Perspective** from the **Window** menu to restore any views you accidently close during experimentation.



Your layer view is still available on the left hand side of the screen.



Press the button to toggle the layer view on and off as needed.

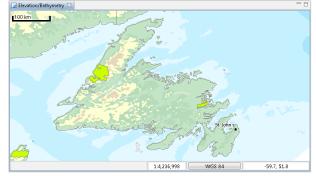
11INFORMATION REQUEST

In this section, you will learn how to use the Information Tool.

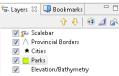
1. Let us open up our first map again, which was labeled **Elevation/Bathymetry**



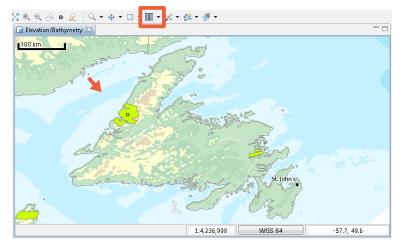
2. Let's **zoom** to somewhere interesting, like a green park.



3. Select the Parks layer in the layer view



4. Change to the Info Tool in the tool bar, and click on a Park.



You can also double

click on a Map to

open it.

You can use the keyboard short-cut 'i' to choose the info tool 5. The **Information View** is brought into focus, showing information about the park layer at the location you clicked.

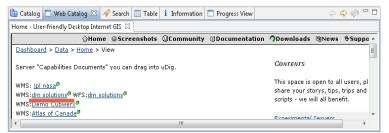
Catalog Web	Catalog Search	Default Feature Editor	Table View	i Informatio	on 🖾	i 🔳 🏱 🗖 🗖
Cities Parks						4
Elevatior		Name		Year Est.	Area (sq.km)	
	Gros Morne	National Park		1970	1942.500	
	🕑 DN	1 Solutions	Group)		

- 6. You can switch to requesting information on another layer on the **left pane**. Available information, if any, is displayed on the **right pane**.
- 7. Not all Web Map Servers support the "GetFeatureInfo" operation; as such information may not be available for all layers. The application uses a normal browser to display HTML content; you can drag the view out of the workbench if you find you need more elbowroom.

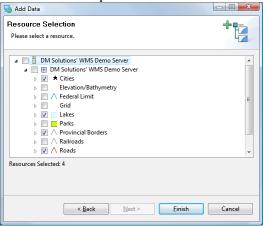
12WEB CATALOG

In this section you will learn how to use the web catalog:

- 1. Create a **New Map**, and press the tab for the **Web Catalog** view (located along the bottom of the window near Catalog).
- 2. Click on the WMS link for **dm solutions**.



3. The Add Layer wizard will open (uDig can recognize links to spatial content). Choose the **Parks, Provincial Border, Roads** and **Cities** and press **Finish**

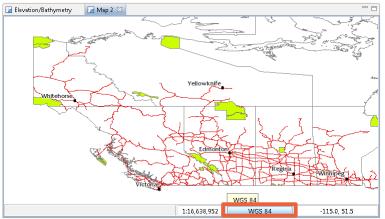


You can use the Web Catalog with your own website for easy spatial visualization.

13RE-PROJECTION

Since the world is not flat, maps are projected in a Co-ordinate Reference System (CRS). We will now make 2 identical maps, perform a re-projection on one, and compare.

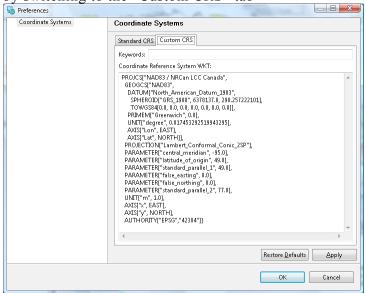
1. Please use the Zoom and Pan tools to navigate to British Columbia (on the west side of North America). Press the button at bottom of **Map 3** marked "**WGS 84**".



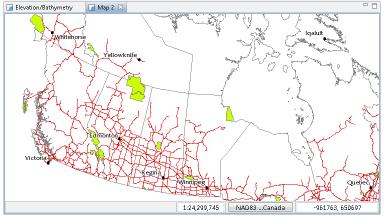
 This brings up the a preference page allowing you to change the Coordinate Reference System for your map. Please enter in 42304 and press enter to re-project the map to the "NAD83/NRCan LCC Canada" CRS.

Preferences	
Coordinate Systems	Coordinate Systems
	Standard CRS Custom CRS
	Coordinate Reference Systems:
	NRCan
	NAD83 / NRCan LCC Canada (EPSG:42304)
	Restore Defaults Apply
	OK Cancel

You can also search by name, try typing in "NAD83" to list matching projections 3. You can have a look at the formal definition of "EPSG:42304 by switching to the "Custom CRS" tab



4. Press the OK button to change the projection of your map.



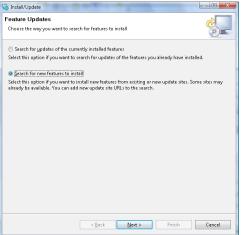
14COMMUNITY

One of the nice things about uDig is ease of which you can download additional plug ins provided by the developer community.

1. Open up Help > Find and Install...



2. Select Search for New Features to Install and press Next

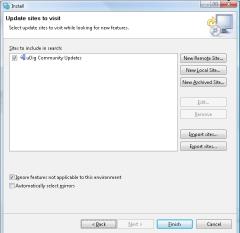


3. Press the New Remote Site button and provide the following: Name: uDig Community Updates

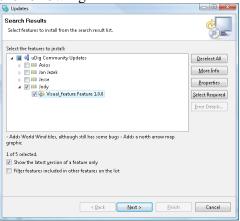
URL: http://udig.refractions.net/update-community

🁆 New	Update Site
Name:	uDig Community Updates
URL:	http://udig.refractions.net/update-community
	OK Cancel

4. Place a check mark for Community Updates and press Finish



- 5. Please wait while we check the update site for new features.
- 6. When we have a complete list you will see a screen similar to the following



7. Please place a check next to Visual feature Feature 1.0.0 from the list and press **Next**.

8. Accept the terms of the license agreement and press Next.

nstall		
Feature License Some of the features have license	agreements that you need to accept before proceeding	
with the installation.		
Kisual_feature Feature 1.0.0	[Enter License Description here.]	^
 I accept the terms in the licens I do not accept the terms in the 		
The not accept the terms in the	neense ogreennene	
	<back next=""> Einish</back>	Cancel

9. <u>Finally confirm the installation location and press Finish</u>.

		Feature Size	Installation Directory
Visual_feature Feat	. 1.0.0	Unknown	/C:/Users/Jody/AppData/Roami
tall Location: C:\Us	ers\Jody\AppData\Roa	mina\udia\uDia1.	1-RC12\eclipse Change Location
quired space: Unkno		,,,,	

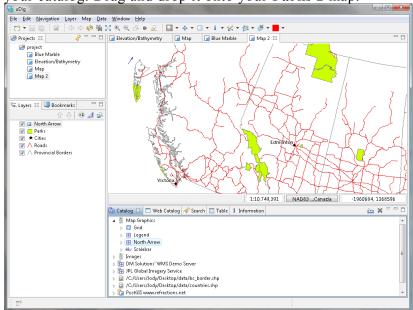
10. Many of the community features have not been formally signed, please click **Install All** when presented with a warning.



11. You will want to **Restart** uDig when presented the opportunity.



12. You now have a new North Arrow Map graphic available in your catalog. Drag and drop it onto your Parks 2 map.



- 13. You may of noticed an ugly red square in the tool bar, select this "tool" and your "North Arrow" layer and you can position the arrow on the Map.
- 14. Community contributions range from small map graphics like this to custom editors and additional spatial formats.

You can package up uDig with just the plugins you need for your organization.

15FINISHED ALREADY?

If you finish early here are some challenges.

- There is more data available in the data directory have a look !
- Try right-clicking on a Layer there is plenty to do (try the operations menu).
- Does your organization publish any spatial information on the web?
- Try out the navigation tools such as Zoom and Pan (the Navigation menu lets you go back to previous locations like a web browser).
- Advanced: Open the **Style Editor**, have a look at the **Advanced** (**XML**) page and see what you make of it.

Perhaps you have an idea for the tool you always wanted?