Setup and showcase of an Ecommerce web store using Magento

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ABOUT THIS GUIDE

This guide is intended to provide an overview of how to set up an ecommerce web store using Magento Community edition (CE) on a Linux system. It provides a quick guide through the most important steps of setup process and also provides some tips on troubleshooting. It starts with an overview of Magento, the various editions and then follows the setup and installation of the ecommerce system and two extension software; MSemantic and Beetailer. Furthermore, section about a number of test scenarios for checking the usability of the ecommerce system. The last three sections are about Magento DB Publisher, system requirements; how to use tutorial and testing. This guide does not cover all the technical details of Magento. Full documentation of Magento can be obtained from the official Magento website at www.magento.com

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SECTION 1

1.0 Introduction to Magento

Magento is an open-source content management system for e-commerce web sites. The software was originally developed in early 2007 by Varien Inc., a US private company headquartered in Los Angeles, with assistance from volunteers. It is currently an ebay company. Magento employs the MySQL relational database management system, the PHP programming language, and elements of the Zend Framework. It applies the conventions of object-oriented programming and model-view-controller architecture. Magento also uses the entity–attribute–value model to store data. This eCommerce system provides three distinct platforms:

- Magento Community Edition
- Magento Enterprise Edition
- Magento Go

1.1 Magento editions

1.1.1 Magento Community Edition(CE)

It is a feature-rich eCommerce platform, built on open-source technology that provides online merchants with the flexibility and control of the look, content and functionality of their eCommerce store. Developers can modify the core and add features and functionality by installing extensions from the Magento Connect marketplace. This edition can be obtained free of charge.

1.1.2 Magento Enterprise edition

Magento Enterprise Edition is derived from the Magento Community Edition and has the same core files. However, this is not free, but has more features and functionality. This edition is designed for large businesses that require technical support with installation, usage, configuration, and troubleshooting.

1.1.3 Magento Go

Magento Go is a cloud-based eCommerce solution, which also includes web hosting by Magento Inc. This was launched in February of 2011 in order to support small businesses as it has no need for software installation. Magento Go still has many built-in modules and can add Magento extensions for more functionality, but is also the least customizable platform.

1.2 Some fascinating facts about Magento

In a short period Magento has gained a striking attention in the world of ecommerce. Below are a few researched facts.

- According to Google trends, Magento has been “ googled” more than the word “ecommerce”.
- Based on Alexa ranking, it is found that Magento is used by 26% of the top 1 million websites.
- According to the research conducted by aheadWorks in April 2014, Magento's market share among the twenty (20) most popular e-commerce platforms is about thirty four percent (34%).

1.3 Choice of Magento CE for lab project

We chose Magento CE for the project because it is free to download, open source and also has a lot of extension software available in the Magento marketplace.

SECTION 2: Magento Community Edition

2.0 Overview of Magento Community edition (CE)

This open source version of Magento has been designed to provide flexibility in the functionality, look and feel of a webstore. The various versions of Magento CE are

- Magento Community Edition 1.6
- Magento Community Edition 1.7
- Magento Community Edition 1.8
- Magento Community Edition 1.9

2.1 Magento CE License

Magento CE is licensed under the Open Software License (OSL) v3.0, an open source certified license. More information is available at http://www.magentocommerce.com/license/

2.2 Interfaces of Magento CE

2.2.1 Front end

The front end is the view of the web store which customers can interact with using a standard web browser. It shows the products, product categories, and promotions as well as provides customers with ordering, payment, and purchase tracking features. Customers can also create accounts here, browse through products, add products to wish lists and also purchase products. The figure below shows a sample front end interface of a webstore setup with Magento CE and sample data.

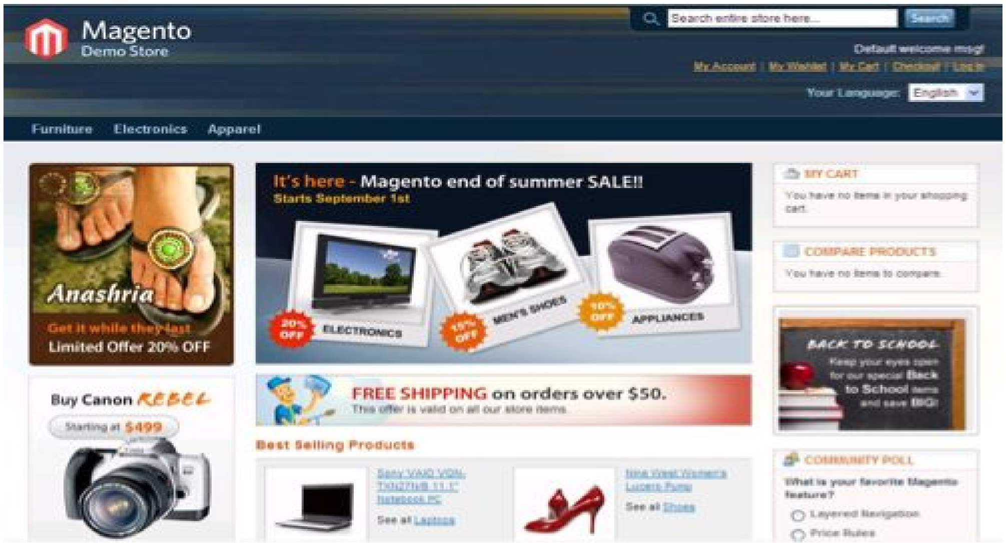
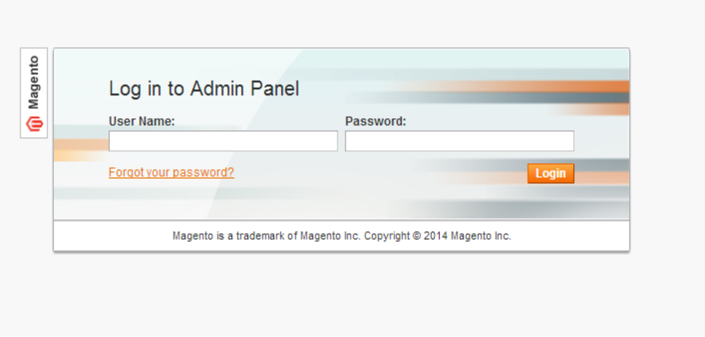

Magento
Demo Store
Search entire store here...
Search
Default welcome msg!
My Account | My Wishlist | My Cart | Checkout | Log In
Your Language: English
Furniture
Electronics
Apparel
Anashria
Get it while they last
Limited Offer 20% OFF
It's here - Magento end of summer SALE!!
Starts September 1st
20% OFF
ELECTRONICS
15% OFF
MEN'S SHOES
10% OFF
APPLIANCES
MY CART
You have no items in your shopping cart.
COMPARE PRODUCTS
You have no items to compare.
BACK TO SCHOOL
Keep your eyes open for our special Back to School items and save BIG!
Buy Canon REBEL
Starting at $499
FREE SHIPPING on orders over $50.
This offer is valid on all our store items.
Best Selling Products
Sony VAIO VGN-TXN27N/B 11.1" Notebook PC
See all Laptops
Nine West Women's Lucero Pump
See all Shoes
COMMUNITY POLL
What is your favorite Magento feature?
○ Layered Navigation
○ Price Rules

Figure 1: Sample front end interface of Magento CE webstore with sample data

2.2.2 Backend

The backend is the password-protected view of the back office features that enable a web store administrator to setup the products and purchasing options and manage orders and all other store functionalities. Various functionalities provided at the backend include the dashboard, which gives an overview of the lifetime sales, average orders and statistics of most searched items. In this same interface, the administrator of the webstore can manage the sales activities, catalogs, customers as well as perform various configurations of the store. A view of the backend indicating the authentication page and the main backend page is shown below.



Log in to Admin Panel

User Name:

Password:

Forgot your password?

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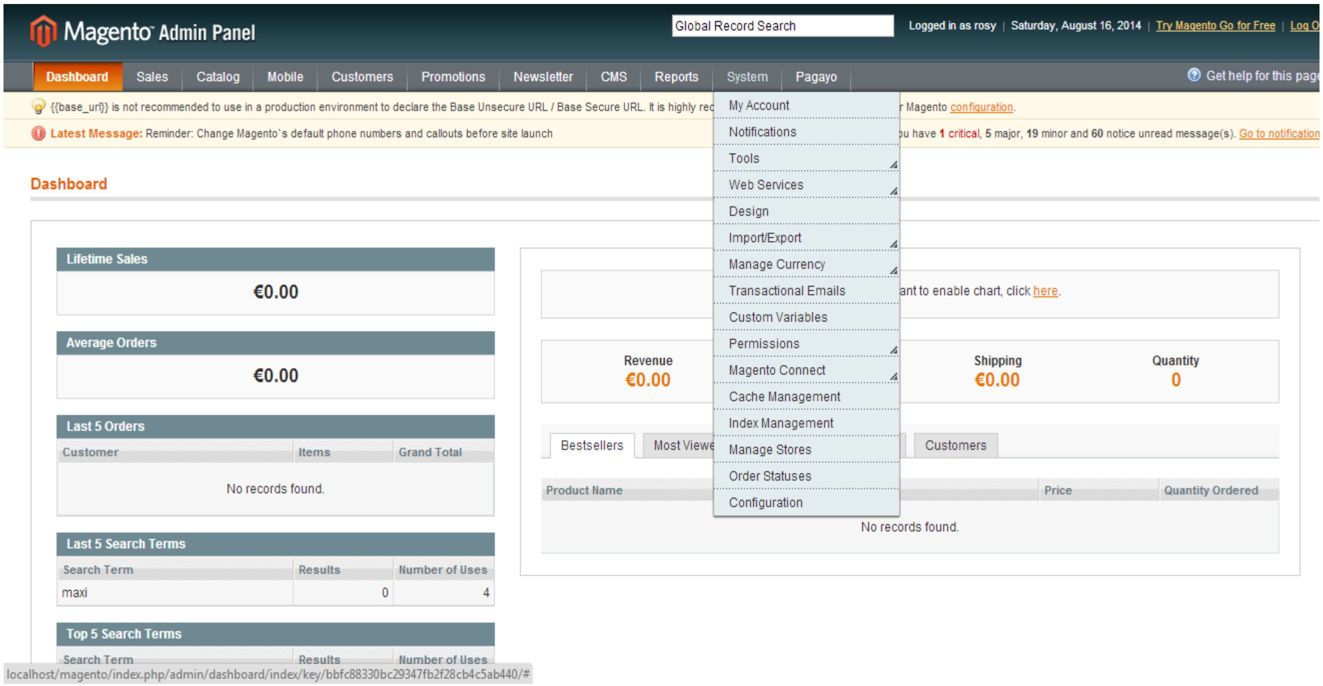


{{base_url}} is not recommended to use in a production environment to declare the Base Unsecure URL / Base Secure URL. It is highly rec r Magento configuration.

Latest Message: Reminder: Change Magento`s default phone numbers and callouts before site launch ou have 1 critical, 5 major, 19 minor and 60 notice unread message(s). Go to notification

ant to enable chart, click here.

Last 5 Orders

Customer	Items	Grand Total
No records found.		

Last 5 Search Terms

Search Term	Results	Number of Uses
maxi	0	4

Top 5 Search Terms

Search Term	Results	Number of Uses

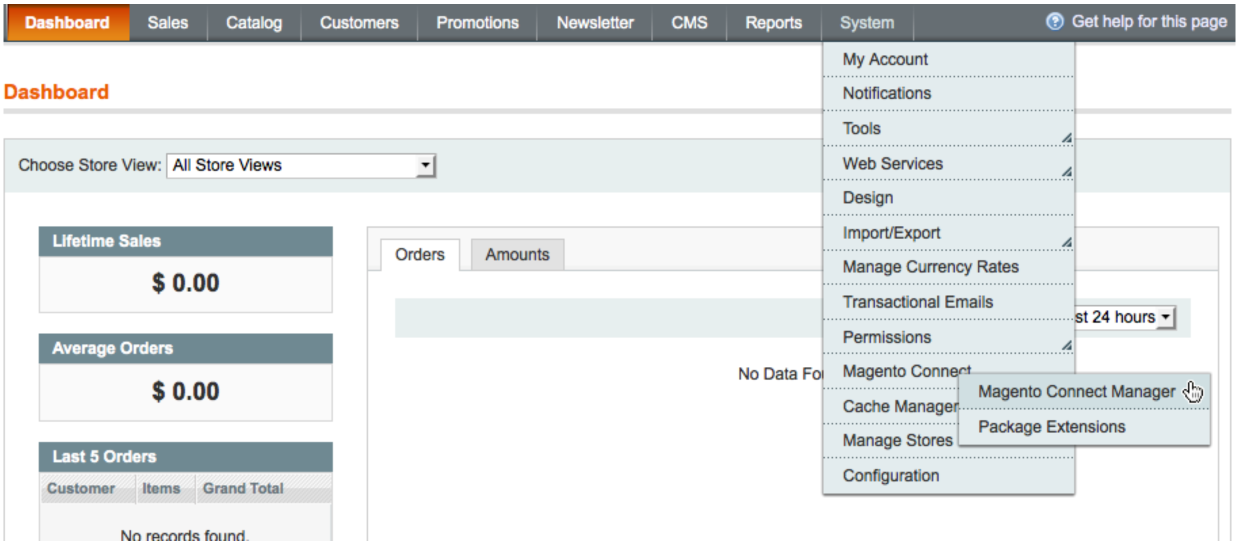
Product Name	Price	Quantity Ordered
No records found.		

localhost/magento/index.php/admin/dashboard/index/key/bbfc88330bc29347fb2f28cb4c5ab440/#

Figure 2: Sample backend interface of Magento CE

2.3 Magento Connect

Magento Connect is a marketplace that allows Magento community members and partners to share their open source or commercial contributions such as extensions, language packs and design interfaces for Magento with the community. On a webstore that has been setup using Magento, the "connect manager" can be located at the backend. Using the interface in the figure below, one can download and install extensions from the Magento Connect marketplace.



Dashboard

Choose Store View: All Store Views

Lifetime Sales
$ 0.00

Average Orders
$ 0.00

Last 5 Orders

Customer	Items	Grand Total
No records found.		

st 24 hours

No Data Fo

Figure 3: Magento connect manager at the backend of a Magento store

2.4 Magento extensions

In the Magento Connect webstore, there are extensions for various purposes including Search engine optimization, marketing, site and customer management.

Magento characterizes its extensions into three main types:

Magento Core Extensions: These are open source extensions created by the Magento Core team, released under an OSL 3.0 license and distributed for download through PEAR.

Magento Community Extensions: These are open source extensions created by Magento Community members or partners also released under an open source license and distributed for download through PEAR.

Magento Commercial Extensions: Magento Commercial extensions are contributions offered for sale by Magento community members or partners. However, the sale transaction, distribution and licensing is managed by the seller and occur outside Magento.

SECTION 3: HOW TO SET UP A WEBSTORE USING MAGENTO COMMUNITY EDITION

3.1 Introduction

Due to the flexibility of this platform, one has the option to install sample data provided by Magento alongside the software package or to install without the sample data.

3.2 System requirements

Supported Operating Systems: Linux x86, x86-64

Supported Web Servers: Apache 1.3.x, Apache 2.0.x, Apache 2.2.x, Nginx (starting from CE 1.7)

Supported Browsers:

- Microsoft Internet Explorer 7 and later
- Mozilla Firefox 3.5 and later
- Apple Safari 5 and later on Mac only
- Google Chrome 7 and later
- Adobe Flash browser plug-in should be installed

PHP Compatibility:

- 5.2.13 - 5.3.24; or 5.4.x with a patch for CE
  - Required extensions: PDO_MySQL, simplexml, mcrypt, hash, Gd, DOM, iconv, curl, SOAP (if Webservices API is to be used), Memory_limit no less than 256Mb (preferably 512)

MySQL:

- EE 1.13.0.0 or later: MySQL 5.0.2 or later
- EE 1.12.0.2 or earlier: MySQL 4.1.20 or later
- CE (all versions): MySQL 4.1.20 or later

For a complete list, visit http://magento.com/resources/system-requirements

3.3 How to obtain Magento CE software

This edition can be downloaded from the Magento official website downloads section. Visit http://www.magentocommerce.com/download. You can click on the "download" tab to download the latest version of the software or obtain any of the older versions by clicking on the "release archives" tab.

3.4 Getting sample data for Magento CE

Magento CE 1.9 uses different sample data from the other versions in the preceding list. It's important to use the correct version of sample data with your version of CE. Magento CE sample data must be installed before you install Magento CE.

The sample data can be downloaded under the sample data section on
http://www.magentocommerce.com/download

If you wish to setup Magento CE on your local machine using Apache server, go to step 2.3 else go to step 2.4

3.5 Setting up Magento CE with or without sample data on Apache Server

The official support of Magento CE is Linux. By the end of this section, you will have installed Magento and optionally, some sample data, locally on Ubuntu.

3.5.1 Setting up the required environment for Magento CE

Steps

To begin, open up a terminal in Ubuntu and enter the command

1. **Update the versions of all packages currently installed on the system**

   command: sudo apt-get update

2. **Install and configure the Apache HTTP server**

   command: sudo apt-get install apache2 –y

3. **Install PHP**

   command: sudo apt-get install php5 php5-curl php5-gd php5-mcrypt php5-mysql-y

4. **Install MySQL database server**
   command: sudo apt-get install mysql-server –y

5. **Restart apache server**
   command: sudo service apache2 restart

3.5.2 Creating your Magento CE database

1. Log into MySQL with the following command **mysql -u root –p**
2. Create a new database for

   command: create database **databasename**;

Note: databasename is the name you give to the database

pathtodownloadeddata is the path to your downloaded data, eg /home/rosy/Desktop/sampledata

If you wish to install sample data provided by Magento, go to **3.5.3** else go to **3.5.4**

3.5.3 Installing sample data (Optional)

1. Download Magento sample data from the Magento website. Rename the folder as "sampledata"

2. Extract the files
   Eg command: tar -xzvf sampledata.tar.gz

3. Import the sql dump of the sample data into the database you created in step 2.3.2

   command: SOURCE **pathtodownloadeddata/magento_sample_data_for_1.9.0.0.sql;**

   where "pathtodownloadeddata" is the path indicating where the sample data was saved.

3.5.4 Installing Magento

1. Download Magento CE from the official website. Rename it as “magentostore”

2. Move the downloaded folder into the “html” folder in the apache directory

command: mv **sourcelocation** /var/www/html

3. Set the permissions on your “**magentostore**” folder to make it rewritable.

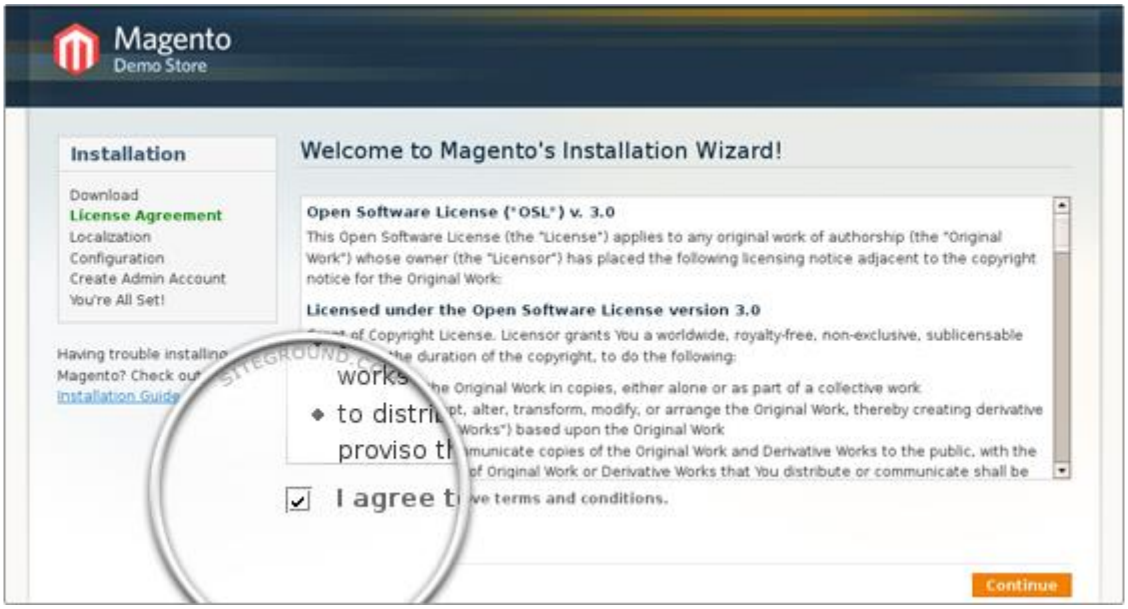
```
chmod   -R  o+w   /magentostore/app/etc/
chmod   -R  o+w   /magentostore/var
chmod   -R  o+w   /magentostore/media
```

4. copy the “catalog” from your “sampledata” folder into your “magentostore” folder

```
Eg  mv   /home/rosy/Desktop/sampledata/media/catalog
/home/www/html/magentostore/media/catalog
```

5. Open your browser and type “localhost/magentostore

The following welcome page should be displayed



Welcome to Magento's Installation Wizard!

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works the Original Work in copies, either alone or as part of a collective work

- to distri pt, alter, transform, modify, or arrange the Original Work, thereby creating derivative Works") based upon the Original Work

proviso th municate copies of the Original Work and Derivative Works to the public, with the of Original Work or Derivative Works that You distribute or communicate shall be

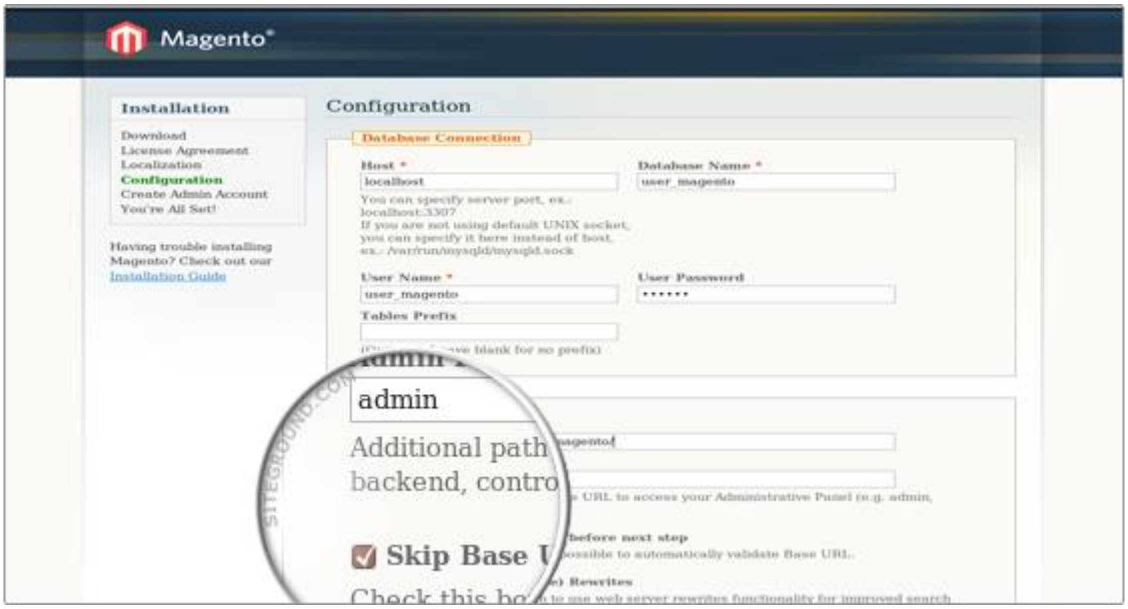
☑ I agree t ve terms and conditions.

Figure 4: First interface of Magento installation wizard

6. Click on the **check box** next to "I agree to the above terms and conditions" and click on the **Continue** button.

7. Now, choose the preferred Time Zone, Locale and Currency and press the **Continue** button.

8. Next, enter the details of the database you created in the earlier step: Database Name, User Name and User Password. You can leave the other options intact. Then, click the Continue button to proceed.



Configuration

Database Connection

Host * localhost

You can specify server port, ex.: localhost:3307
If you are not using default UNIX socket, you can specify it here instead of host, ex.: /var/run/mysqld/mysqld.sock

Database Name * user_magento

User Name * user_magento

User Password ••••••

Tables Prefix

admin

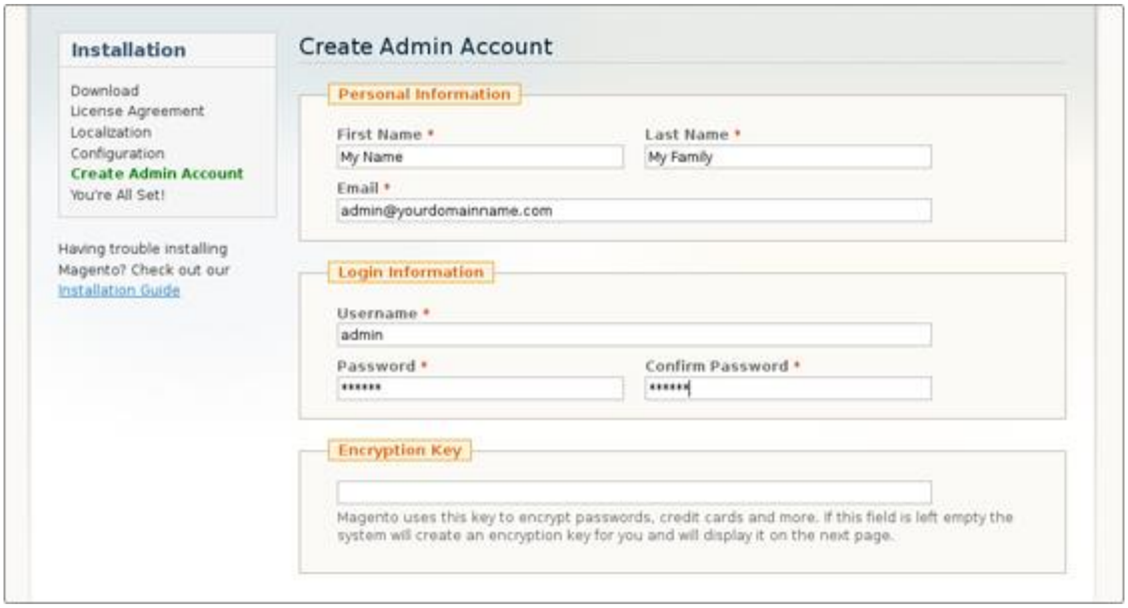
Additional path backend, contro

☑ Skip Base U

Check this bo

Figure 5: Page requesting for signup information

9. At this point you should enter **the personal information and the admin login details which you want to use.** You can leave the Encryption Key field empty and the script will generate one for you. Once more, click the Continue button.



Create Admin Account

Personal Information

First Name * My Name

Last Name * My Family

Email * admin@yourdomainname.com

Login Information

Username * admin

Password * ******

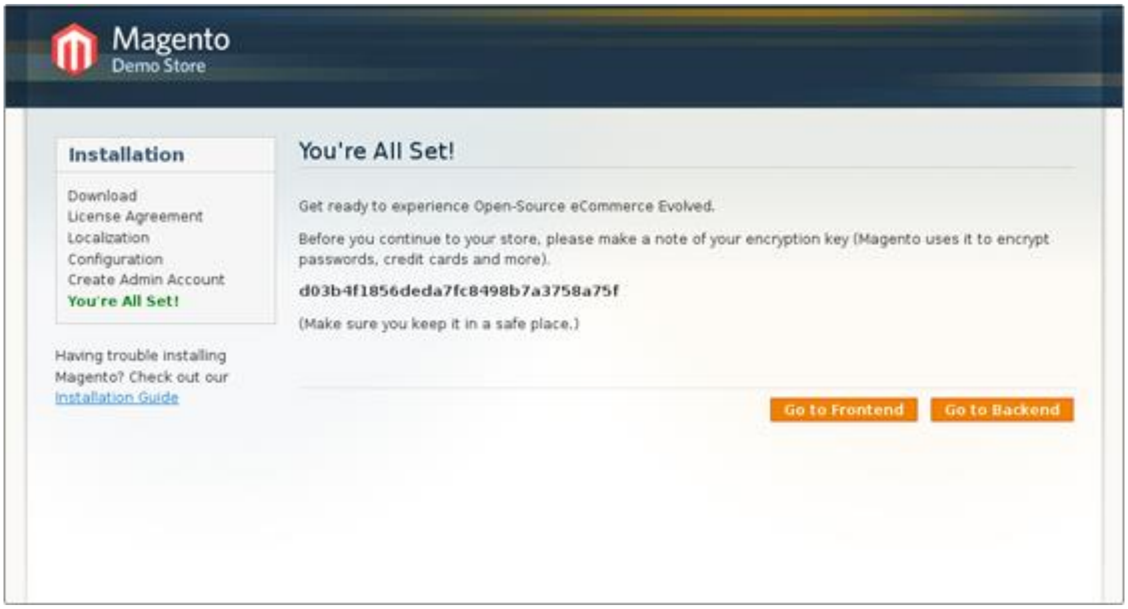
Confirm Password * ******

Encryption Key

Magento uses this key to encrypt passwords, credit cards and more. If this field is left empty the system will create an encryption key for you and will display it on the next page.

Figure 6: Create an account page

10. Store setup has been completed successfully



You're All Set!

Get ready to experience Open-Source eCommerce Evolved.

Before you continue to your store, please make a note of your encryption key (Magento uses it to encrypt passwords, credit cards and more).

d03b4f1856deda7fc8498b7a3758a75f

(Make sure you keep it in a safe place.)

Figure 7: Confirmation of successful installation page

3.6 Installing Magento CE on your internet domain

3.6.1 Basic configurations

1. Update the versions of all packages currently installed on the system

```
command: sudo apt-get update
```

2. Install and configure the Apache HTTP server

```
command: sudo apt-get install apache2 –y
```

3. Install PHP

```
Command: sudo apt-get install php5 php5-curl php5-gd php5-mcrypt php5-mysql-y
```

4. Install MySQL database server

```
command: sudo apt-get install mysql-server –y
```

5. Restart apache server

```
command: sudo service apache2 restart
```

6. Ensure that you belong to the same group as the Apache process. Note that after entering the command you must log out and then log back in before the system will recognise that you belong to a new group.

```
command: sudo usermod -a -G www-data dev
```

7. Change the permissions so that both you and Apache can have read and write access to the public_html directory.

```
command: sudo chmod 2750 /home/dev/public_html
```

8. Use the groups command to check that you belong to the www-data group.

```
command: chgrp www-data /home/dev/public_html
```

9. Create the directory that Magento will be served from and it will be given the www-data group automatically.

```
command: mkdir -p /home/dev/public_html/magentostore.com/{public,log}
```

3.6.2 Creating your Magento CE database

1. Log into MySQL with the following command **mysql -u root –p**

2. Create a new database
command: create database **databasename**;

Note: databasename is the name you give to the database

3.6.3 Downloading Magento and sample data

1. Change into the directory where we wish to perform the install.

Eg command: **cd /home/dev/public_html/magento-store.com/public**

2. Download the latest version of Magento into the directory which you have opened.

3. The source code is located in a directory called magento. Since we don't want Apache to serve Magento from this sub-directory we need to move the source code out of it.

command: **mv magento/* magento/.htaccess .**

4. To install sample data, download it from the Magento site and follow the steps in 3.5.3

5. Use the chmod command to give write permission to the ww-data group.

chmod g+w var var/.htaccess app/etc

chmod -R g+w var/package/ media

6. Open your browser and type in the web address of your store. Follow the steps provided on the welcome page.

3.7 Some useful tips

Problem: Sample data loads but all the links are broken on the website

1. Log into the backend of the store
2. go to system --- configuration---Search engine optimisation
3. set use web server rewrites to no
4. You then have a working system

Problem: php extension mcrypt must be loaded

use the commands below

1. sudo php5enmod mcrypt
2. sudo service reload
3. sudo service apache2 restart

If you wish to proceed downloading Magento packages online, please set all Magento folders to have writable permission for the web server user (example: apache)

use the command below on your magento folder

```
chmod -R o+w /var/www/html/magento
```

3.8 Theme installation

To improve the "look" of your webstore, Magento has provides a good number of themes to choose from.

⚠ NOTE: ALWAYS backup your database before performing any modifications

3.8.1 Installing a sample theme

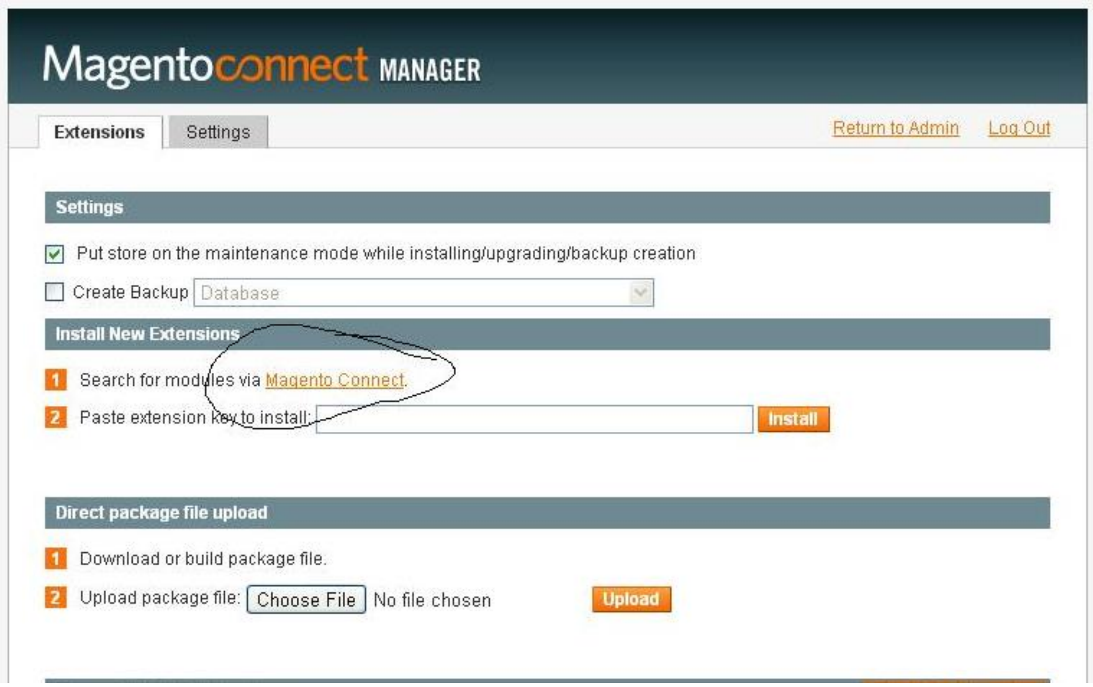
Steps

1. Go to **Admin->system**

2. Under **system ->Magento Connect->Magento Connect Manager**

3. Enter login information and click **login button**

4. On the next page that is displayed, paste the extension key of the theme you wish to install in the textbox provided or click **Magento Connect** Option as seen below



Settings

☑ Put store on the maintenance mode while installing/upgrading/backup creation

□ Create Backup Database

Install New Extensions

1 Search for modules via Magento Connect.

2 Paste extension key to install:

Direct package file upload

1 Download or build package file.

2 Upload package file: No file chosen

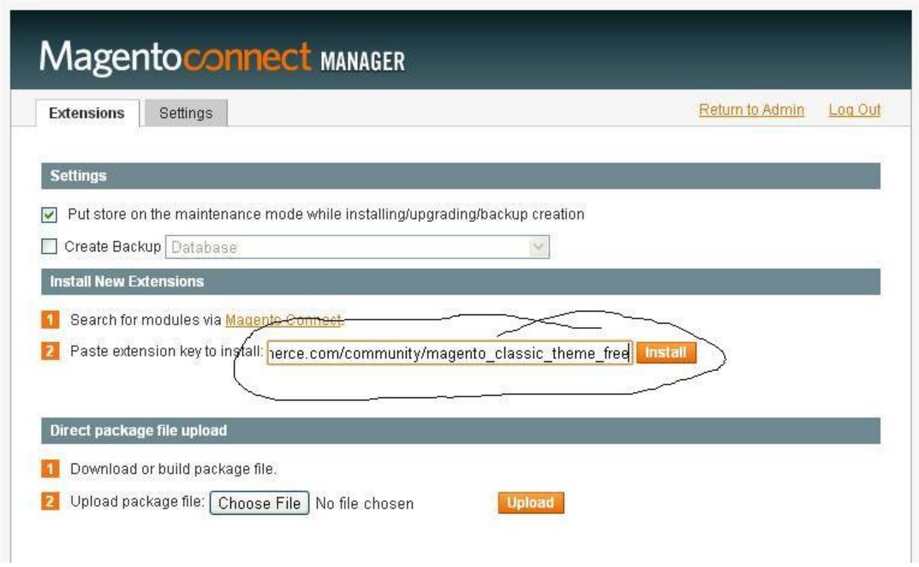
Figure 8: Interface to search for themes via Magento connect

5. You will be redirected to the Magento connect website. Locate the “theme tab” and select the theme you wish to install from any of the categories provided. On the new page displayed for the theme information, click on the “install” button.

6. On the new page displayed, select the version of Magento you are using (either Go, community or enterprise), select the version of Magento connect (the current one is 2.0)

7. Check and agree to the extension license and click on the get extension key button.

8. An extension key will be generated. Copy the key, go back to your Magento Connect manager and paste the key in the textbox as shown below and click the install button.



Settings

☑ Put store on the maintenance mode while installing/upgrading/backup creation

□ Create Backup Database

Install New Extensions

1 Search for modules via Magento Connect.

2 Paste extension key to install: herce.com/community/magento_classic_theme_free Install

Direct package file upload

1 Download or build package file.

2 Upload package file: Choose File No file chosen Upload

Figure 10: pasting the extension key in the textbox provided by Magento Connect

9. A new table is displayed showing the channel, package name, version and status. Click on the proceed button beneath the table. After a successful installation, refresh the page.

10. To switch to this new theme, Go to system->Design

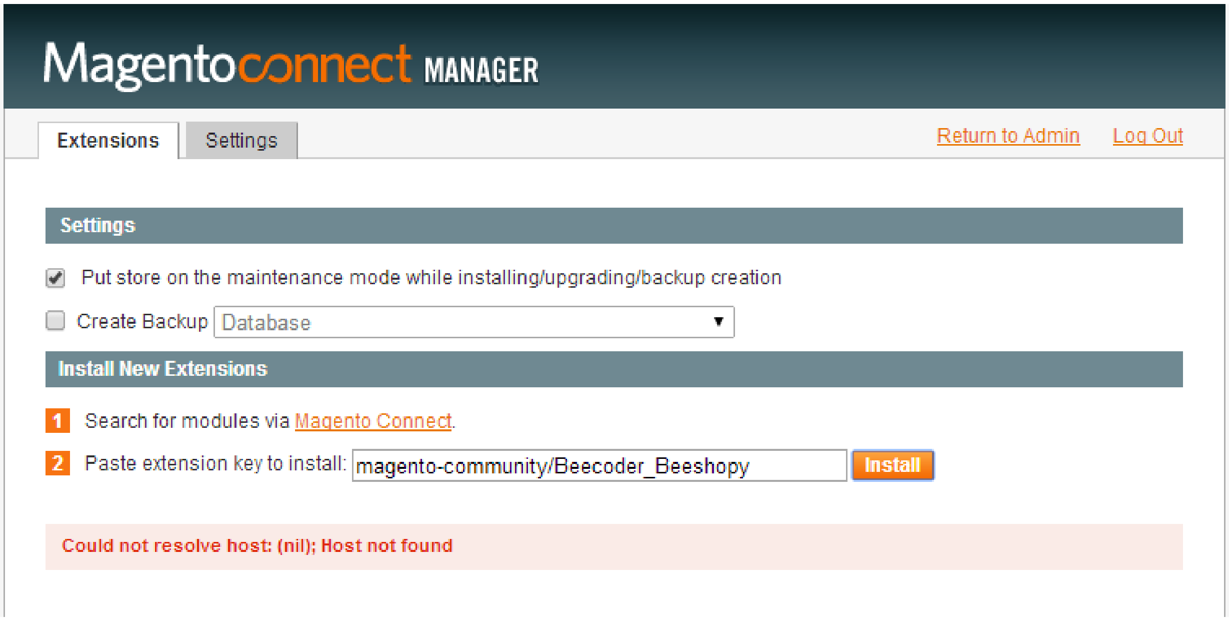
11. Click **Add Design Change Button**

12 Select **Custom Design** Tab in Drop Down list. Select your installed new theme and Click Save Button.

13. Refresh your home page and the theme has now been changed to this new one.

Tip

If you receive an error message indicated in the figure below, go back to the Magento Connect website and navigate to the page of the extension you are trying to install. Locate the Magento connect version and click on the change link to select the version which corresponds to the version of your store's connect manager. Also make sure that you have selected the right platform (community, go or enterprise). Then click on the generate key again and repeat the steps.



Settings

☑ Put store on the maintenance mode while installing/upgrading/backup creation

□ Create Backup Database ▾

Install New Extensions

1 Search for modules via Magento Connect.

2 Paste extension key to install: magento-community/Beecoder_Beeshopy Install

Could not resolve host: (nil); Host not found

Figure 11: Error message which is displayed when the correct Magento connect version is not chosen and a wrong key is generated.

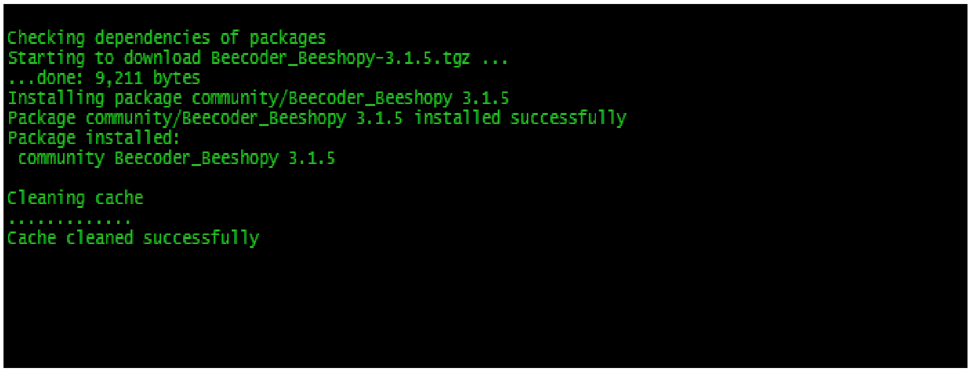
3.9 Installing Magento extensions

Installing extensions follow almost the same process shown in step 3.8. For our lab project, we installed two extensions namely beetailer and MSemantic.

3.9.1 Beetailer extension

This extension helps integrate Magento stores with Facebook and other social networks like Pinterest or Twitter.

1. To install this extension, follow the steps in 3.8 to get the extension key for Beetailer.
2. Open Magento Connect Manager of your webstore and paste the extension key in the textbox provided.
3. Click on the “install” button. A new table is generated for the extension. Click on the proceed button below the table.
4. When the extension is installed successfully, the interface below is displayed.



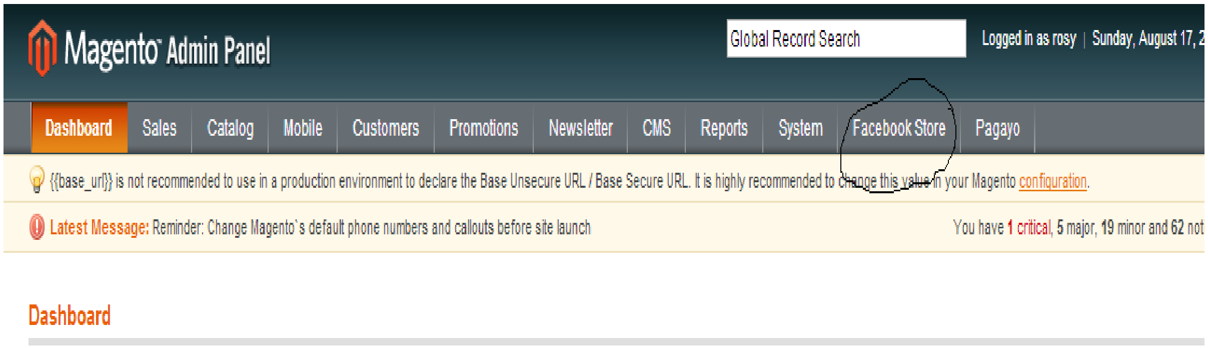
```
Checking dependencies of packages
Starting to download Beecoder_Beeshopy-3.1.5.tgz ...
...done: 9,211 bytes
Installing package community/Beecoder_Beeshopy 3.1.5
Package community/Beecoder_Beeshopy 3.1.5 installed successfully
Package installed:
 community Beecoder_Beeshopy 3.1.5

Cleaning cache
.............
Cache cleaned successfully
```

Figure 12: Interface showing the successful installation of the Beetailer extension

5. Click on the refresh button

6. Navigate back to your admin page. The tab has been created for the extension in the admin panel as shown in the figure below.



Logged in as rosy | Sunday, August 17, 2

{{base_url}} is not recommended to use in a production environment to declare the Base Unsecure URL / Base Secure URL. It is highly recommended to change this value in your Magento configuration.

Latest Message: Reminder: Change Magento`s default phone numbers and callouts before site launch

You have 1 critical, 5 major, 19 minor and 62 not

Dashboard

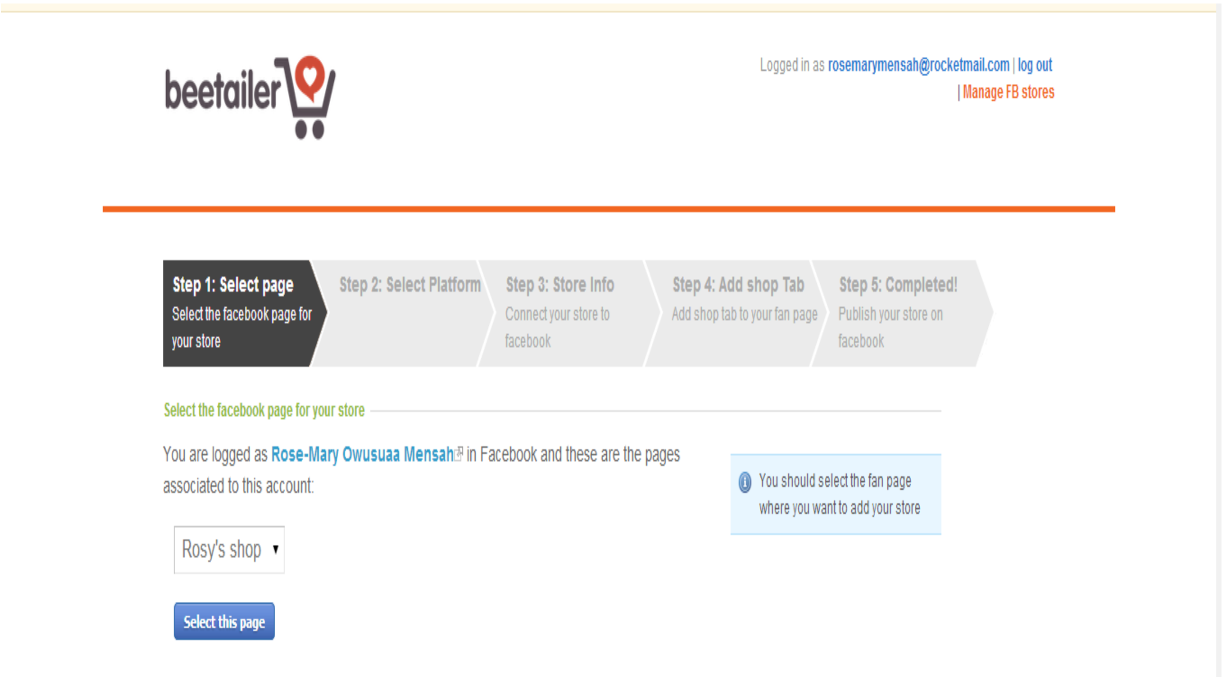
Figure 13: Beetailer extension displayed as one of the tabs on the Magento Admin panel

7. Click on the "facebook store" tab and click on "add my store to Facebook button"

8. A new page is displayed as shown in the figure 14 below. Follow the steps to setup your store on facebook.

Quick Tip

You need to have already created a facebook page for your store before following the process in step 8


beetailer
Logged in as rosemarymensah@rocketmail.com | log out
| Manage FB stores
Step 1: Select page
Select the facebook page for your store
Step 2: Select Platform
Step 3: Store Info
Connect your store to facebook
Step 4: Add shop Tab
Add shop tab to your fan page
Step 5: Completed!
Publish your store on facebook
Select this page

Select the facebook page for your store

You are logged as Rose-Mary Owusuaa Mensah in Facebook and these are the pages associated to this account:

Rosy's shop

You should select the fan page where you want to add your store

Figure 14: Steps to install the Beetailer extension

3.9.2 MSemantic extension

1. Install the extension with the extension key from magento connect (remind allowing beta extensions)
2. Refresh your cache
3. Logout from backend and re-login
4. Go into your magento folder and search for the files below

- files 1column.phtml
- 2colums-left.phtml
- 2colums-right.phtml
- 3colums.phtml

4. Set the new doctype in your root template and product single view template. This has to be made in the files 1column.phtml, 2colums-left.phtml, 2colums-right.phtml, 3colums.phtml in your magento folder. Remove the doctype declaration and add the two lines instead.

```
<?php echo '<?xml version="1.0" encoding="UTF-8"?>'; ?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN" "http://www.w3.org/MarkUp/DTD/xhtml-rdfa-1.dtd">
```

5. Remove the "lang" attribute from the html opening tag so that it looks as follows:

```
<html xmlns="http://www.w3.org/1999/xhtml"  version="XHTML+RDFa 1.0"  xml:lang="<?php echo $this->getLang() ?>">
```

6. Go to the Magento Admin Panel, click on the configurations link. Locate the MSemantic section on the left hand side of the page.

7. Click on the Semantic SEO Settings. Under “basic settings” and make sure the folling fields are correctly set.

- Enable -> Yes
- Semantic Web Ready Link -> No.

SECTION 4: ROMIS Multimedia store

4.1 Introduction

This section shows the results of our successful lab project. We setup an online store (ROMIS multimedia store) using Magento Community edition. The store has the following features

Domain: http://goo.gl/uuLgg8

Main setup: Magento Community edition

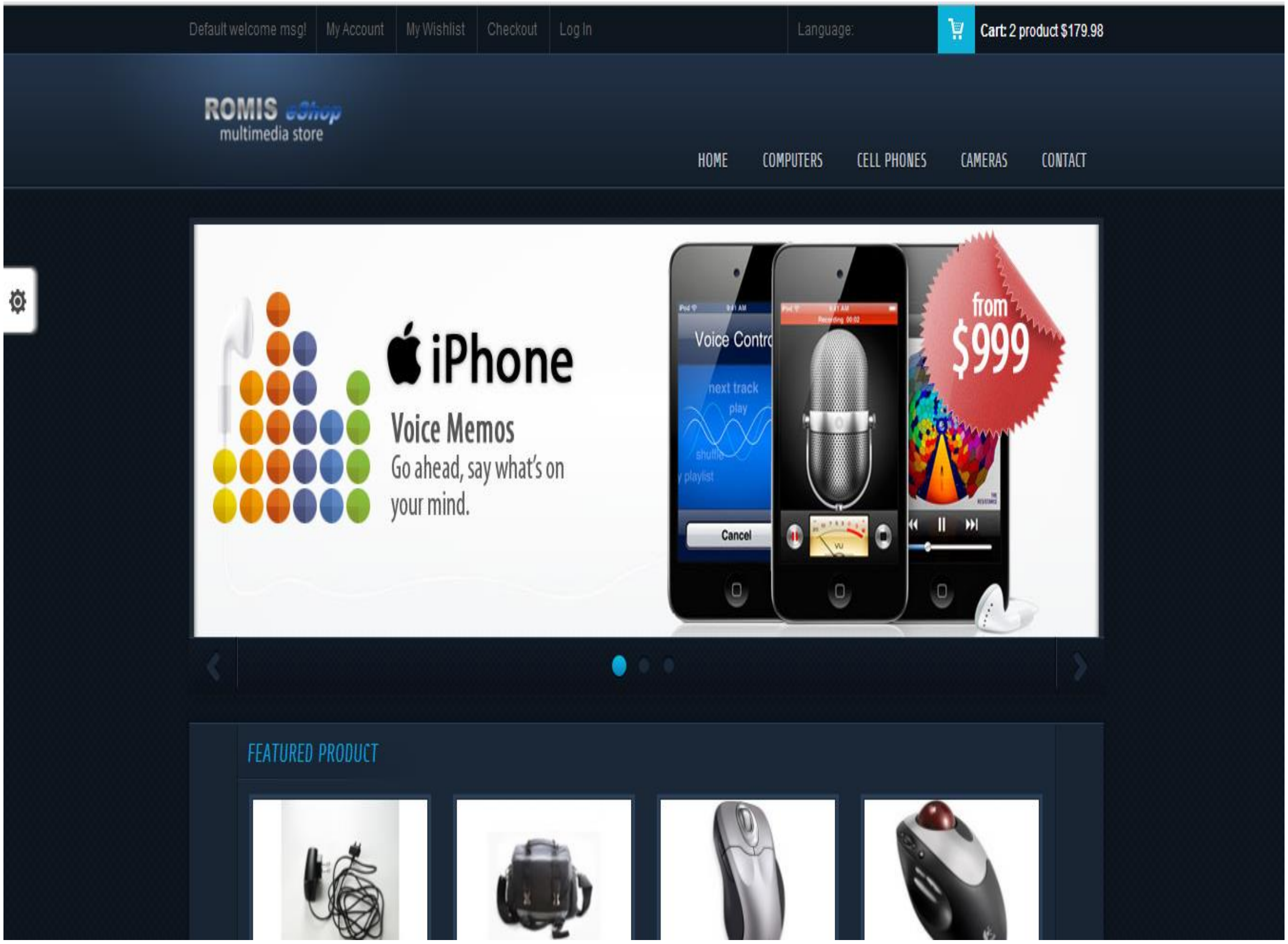
Store theme: Ves hitech magento theme, this theme installs with sample data for electronics

Extensions

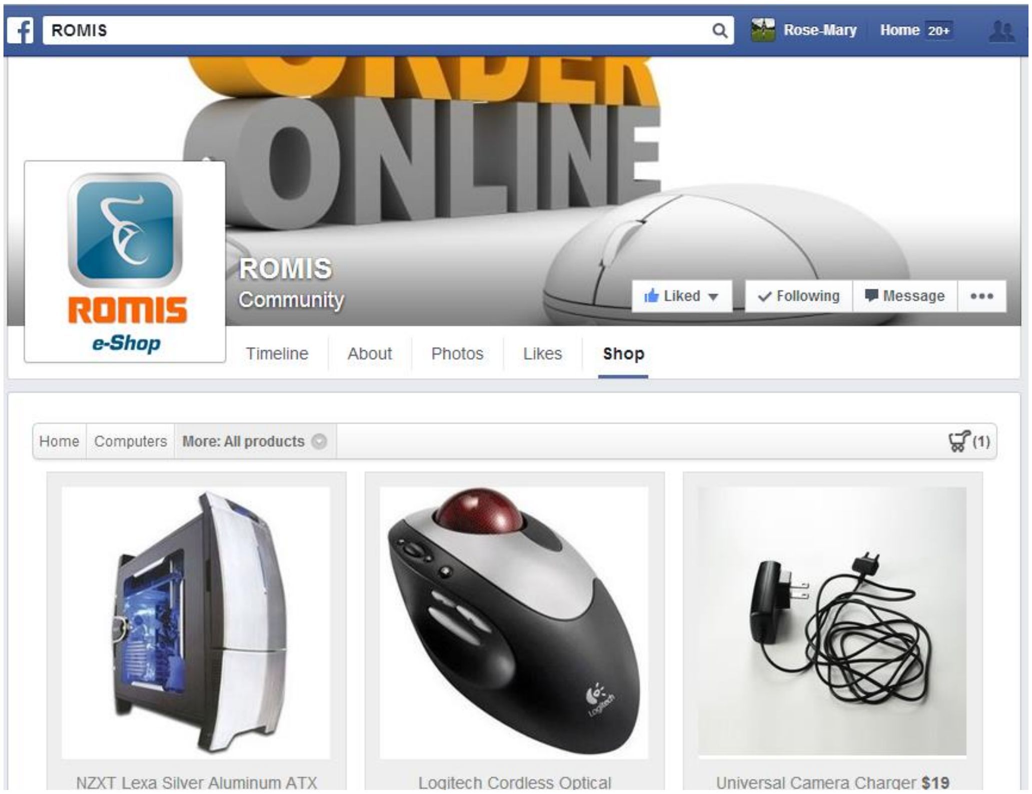
- Beetailer –used to integrate our web store with facebook
- Msemantic - enables Search Engine Optimisation based on Semantic Web / Linked Data Technology.

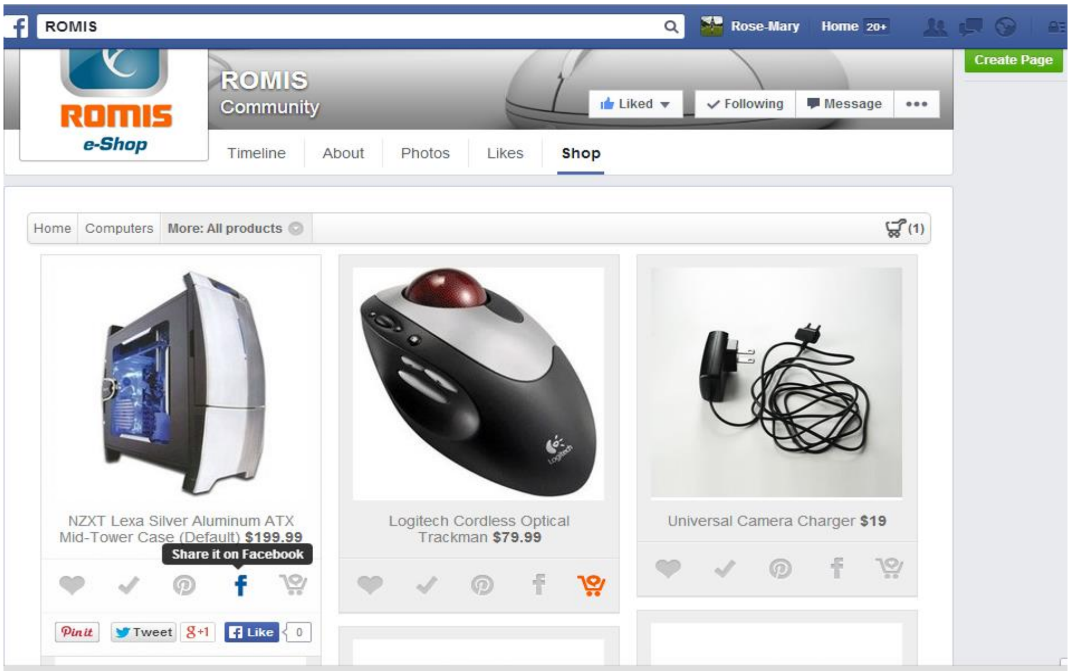
Extra features: A Java standard application with Graphical user interface to export the data in the SQL database into RDF format using D2RQ.

4.2 Front end of ROMIS multimedia store

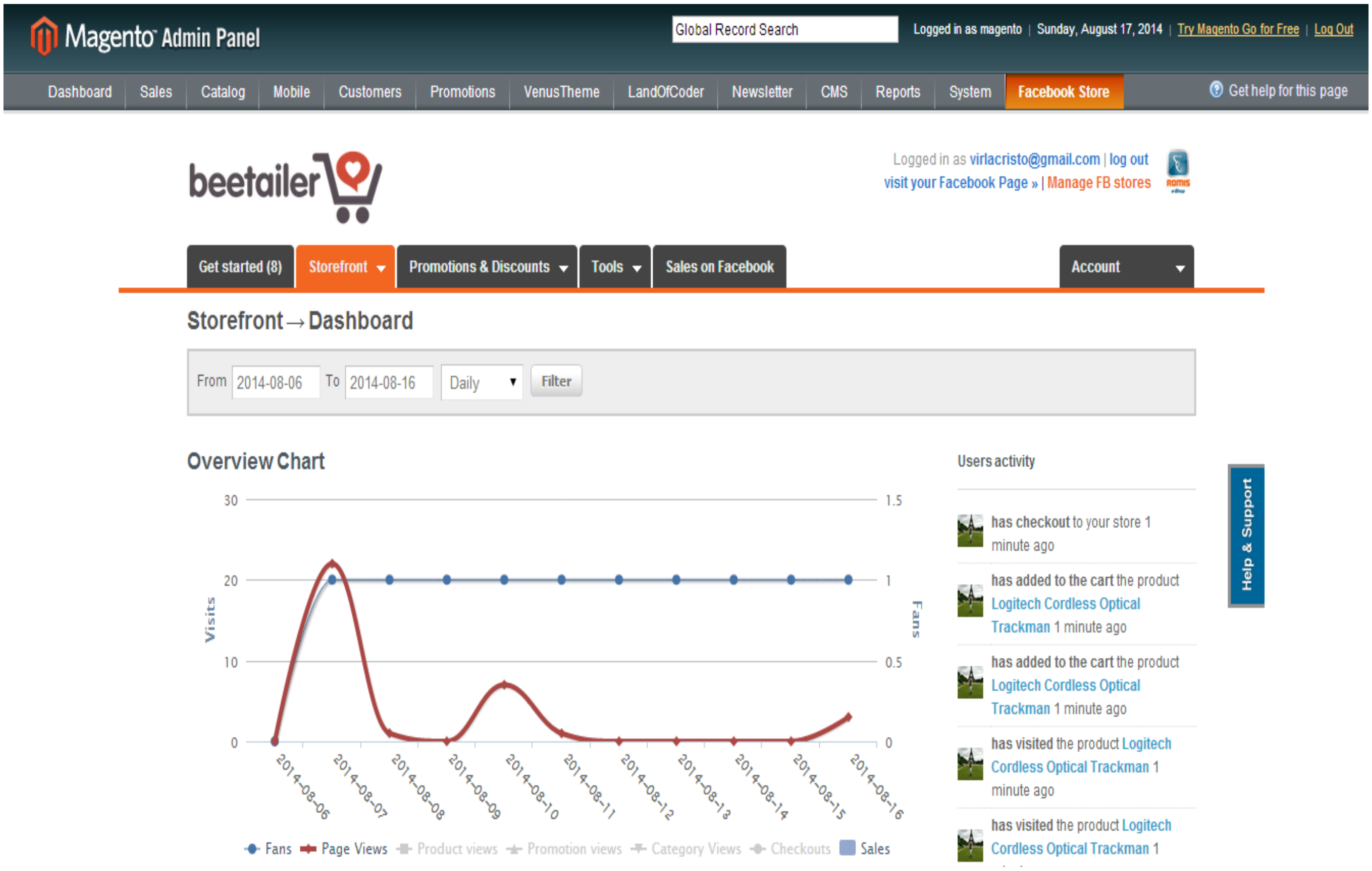


4.3 ROMIS multimedia store on Facebook, setup using Beetailer extension





4.4 Backend of ROMIS integrated with Beetailer extension



Storefront → Dashboard

From 2014-08-06 To 2014-08-16 Daily

Users activity

has checkout to your store 1 minute ago

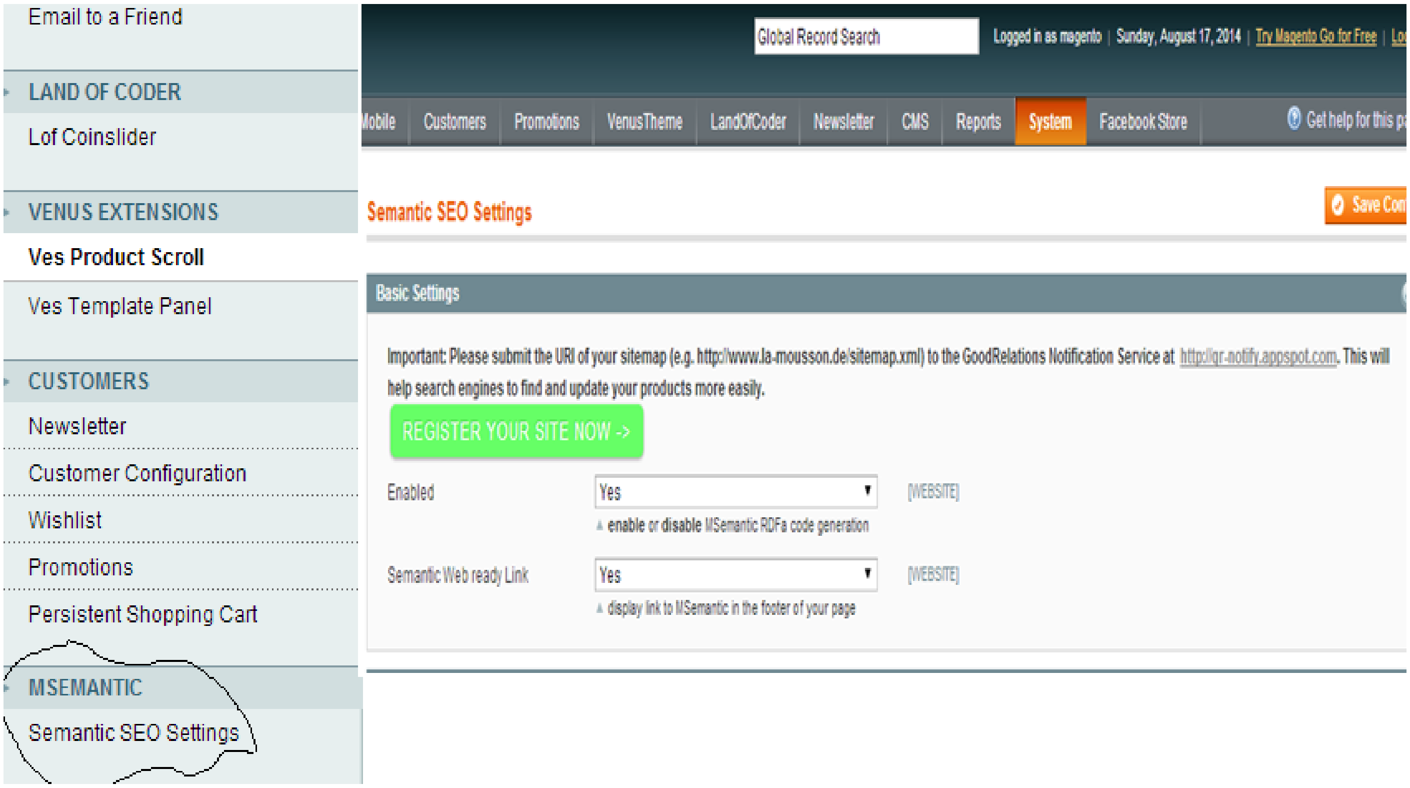
has added to the cart the product Logitech Cordless Optical Trackman 1 minute ago

has added to the cart the product Logitech Cordless Optical Trackman 1 minute ago

has visited the product Logitech Cordless Optical Trackman 1 minute ago

has visited the product Logitech Cordless Optical Trackman 1

4.5 Backend of ROMIS multimedia store with MSemantic extension installed



Semantic SEO Settings

Basic Settings

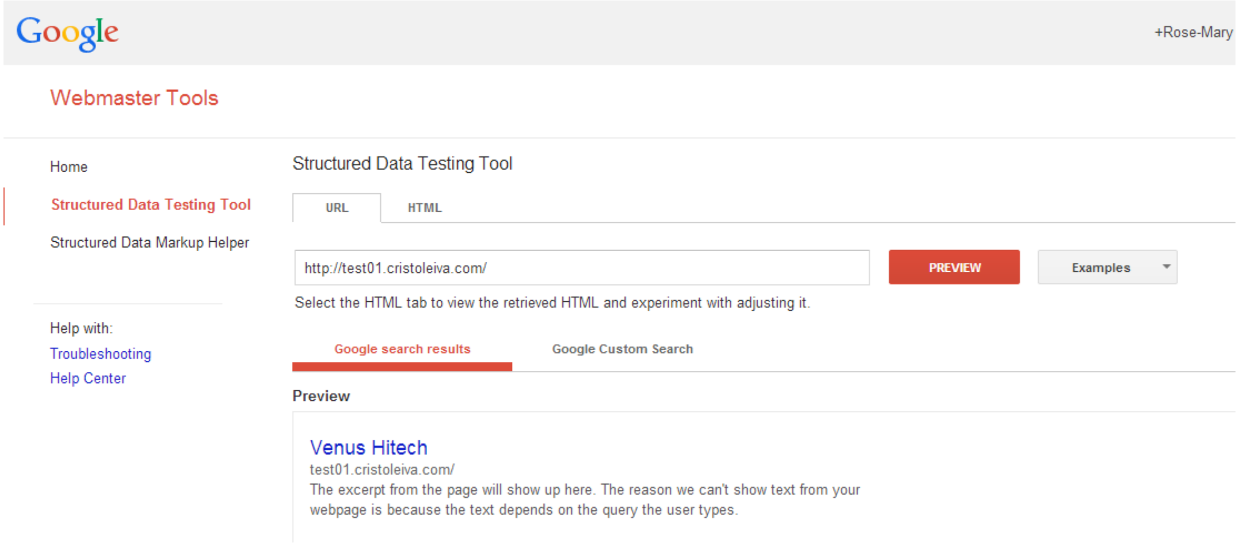
Important: Please submit the URI of your sitemap (e.g. http://www.la-mousson.de/sitemap.xml) to the GoodRelations Notification Service at http://gr-notify.appspot.com. This will help search engines to find and update your products more easily.

REGISTER YOUR SITE NOW ->

Enabled: Yes [WEBSITE]
enable or disable MSemantic RDFa code generation

Semantic Web ready Link: Yes [WEBSITE]
display link to MSemantic in the footer of your page

4.6 Using Google's structured data testing tool to test the effect of the MSemantic extension on ROMIS webstore

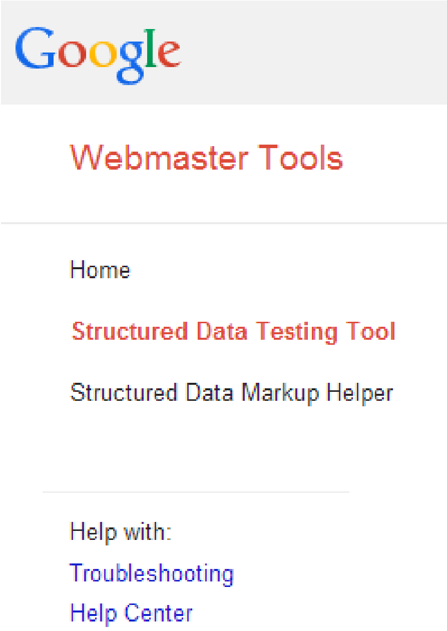


Structured Data Testing Tool

http://test01.cristoleiva.com/

Select the HTML tab to view the retrieved HTML and experiment with adjusting it.

Venus Hitech
test01.cristoleiva.com/
The excerpt from the page will show up here. The reason we can't show text from your webpage is because the text depends on the query the user types.



Google

Webmaster Tools

Home

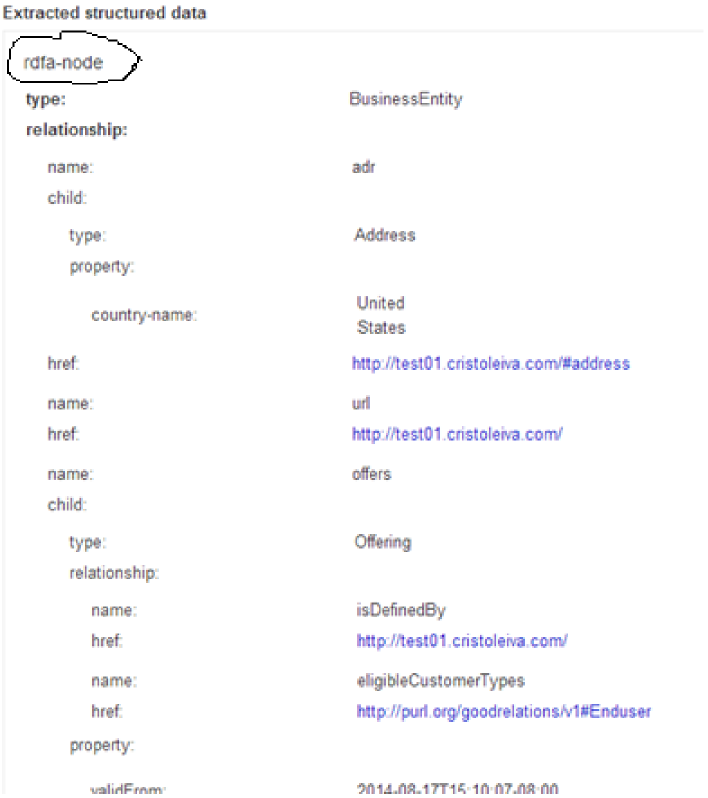
Structured Data Testing Tool

Structured Data Markup Helper

Help with:

Troubleshooting

Help Center



```
Extracted structured data

rdfa-node
type:                                  BusinessEntity
relationship:
  name:                                adr
  child:
    type:                              Address
    property:
      country-name:                    United
                                       States
  href:                                http://test01.cristoleiva.com/#address
  name:                                url
  href:                                http://test01.cristoleiva.com/
  name:                                offers
  child:
    type:                              Offering
    relationship:
      name:                            isDefinedBy
      href:                            http://test01.cristoleiva.com/
      name:                            eligibleCustomerTypes
      href:                            http://purl.org/goodrelations/v1#Enduser
    property:
      validFrom:                       2014-08-17T15:10:07-08:00
```

SECTION 5: Usability test cases

To test the usability of the ROMIS Multimedia web store, we developed a number of test cases for people to follow

5.1 Scenario

You are visiting your family this Summer period for holidays. As a tradition, you need to buy gifts for them. This time, you have decided to buy electronics. A friend introduced you to romis.net, an online shop for electronic devices. You would like to purchase one laptop, two cell phones and one camera case. To ensure a smooth ordering process, your friend gave you this guide to the webstore. Go through the guide and locate the devices of interest and purchase them. However, the cost of each device should be under 1000 euros. You are also encouraged to give feedback on the whole virtual shopping experience using the feedback form of the web store. Lastly, please subscribe to romis.net newsletter if you are interested in receiving product announcements from us.

5.2 Activities

Activity 1

1. Visit **http://goo.gl/uuLgg8**

Or

the facebook page of the webstore http://goo.gl/0ulKIo

If you already have an account with the webstore, go to activity 3 else go to activity 2

Activity 2

Sign up

1. Click on the “login in” icon

2.Click “create an account” button on the new page displaye

3. Follow the instructions on the create an account page

4. Click on the submit button

Activity 3

Sign in

1. Click on the "login in" icon

2. Follow the instructions on the "login page"

3. Click on the "login" button"

Activity 4

Adding a product of shopping cart

1. Click on the item you would like to buy.

2. Type the quantity of the products you would like to buy.

3. Click on "add to cart button"

Activity 5

Payment and check out

1. Click on the shopping cart button on the top right corner of the store.

2. Check that you have selected the right products in their right quantities.

3. If there is an error, click "update shopping cart" button else click "proceed to checkout" and follow the steps.

General observations from the Usability test

Ten people, most of whom are students were asked to participate in this usability test. The six people who visited the direct web address of the store were able to follow the instructions and successfully carry out the virtual shopping procedure. Four people visited the Facebook store and tried to go through the shopping activity. Only one of these four was unable to successfully complete the online shopping process. He admitted that he was not very familiar with Facebook and this may have contributed to his inability to successfully complete. From the tests, we realized that our webstore is easy to navigate hence visitors to the store will be able to easily locate products of interest, perform various activities and successfully complete the online shopping process.

SECTION 6: Magento DB Publisher

6.1 Introduction to Magento DB Publisher

Magento DB Publisher is a stand-alone Java software that extract Magento database from a MySQL DBMS and publish the selected data in different Semantic Web technologies. Magento DB Publisher works along with D2RQ Server to convert the extracted data and present it through a web server (Apache). Magento DB Publisher provides a very intuitive Graphic User Interface that makes the work easy for any kind on administrator.

6.1.1 D2RQ Platform

Data on the Semantic Web is modeled and represented in RDF. D2R Server uses a customizable D2RQ mapping to map database content into this format, and allows the RDF data to be browsed and searched – the two main access paradigms to the Semantic Web.

Requests from the Web are rewritten into SQL queries via the mapping. This on-the-fly translation allows publishing of RDF from large live databases and eliminates the need for replicating the data into a dedicated RDF triple store.

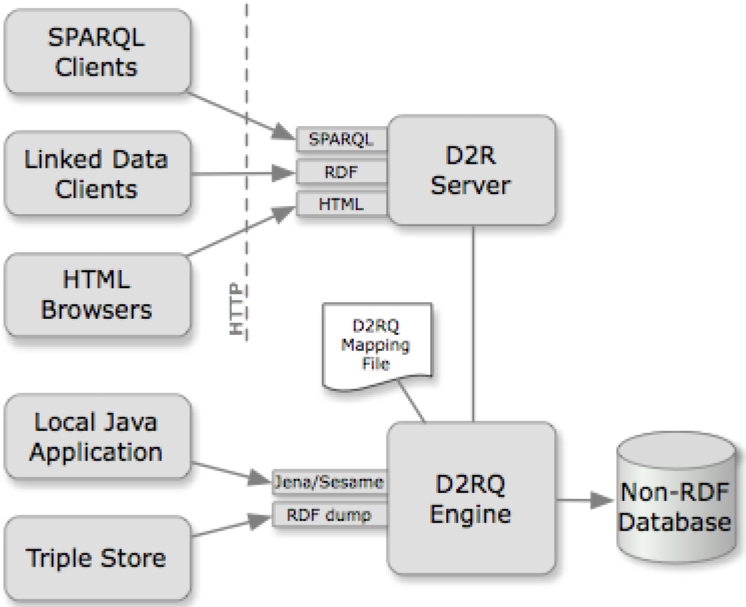


Fig. 15. D2R Server architecture diagram

For more information about D2RQ Server please visit the following website:
http://d2rq.org/d2r-server

6.1.2 Magento Database

Magento CE 1.7+ uses a very complex database with around 344 tables that covers information from registered e-store users to catalogs and products. Magento DB Converter only requires the most important tables related to products catalog & products, reviews and users.

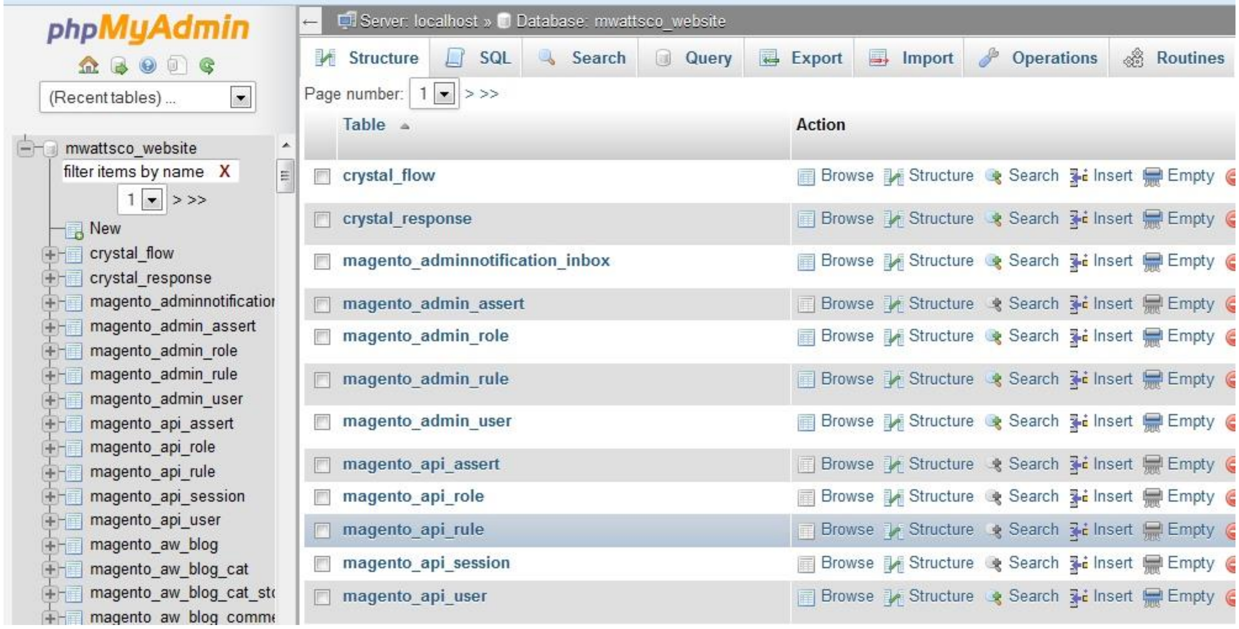


Table	Action
crystal_flow	Browse Structure Search Insert Empty
crystal_response	Browse Structure Search Insert Empty
magento_adminnotification_inbox	Browse Structure Search Insert Empty
magento_admin_assert	Browse Structure Search Insert Empty
magento_admin_role	Browse Structure Search Insert Empty
magento_admin_rule	Browse Structure Search Insert Empty
magento_admin_user	Browse Structure Search Insert Empty
magento_api_assert	Browse Structure Search Insert Empty
magento_api_role	Browse Structure Search Insert Empty
magento_api_rule	Browse Structure Search Insert Empty
magento_api_session	Browse Structure Search Insert Empty
magento_api_user	Browse Structure Search Insert Empty

Fig. 16. Magento tables sample

The following Magento database tables are used by Magento DB Publisher:

a) To publish Magento stored Products:
catalog_category_entity,catalog_category_entity_datetime,catalog_category_entity_decimal,catalog_category_entity_int,catalog_category_entity_text,catalog_category_entity_varchar,catalog_category_product,catalog_category_product_index,core_url_rewrite,catalog_category_entity,core_store,eav_attribute,catalog_product_entity

b) To publish Magento stored Reviews:
review,review_detail,review_entity,review_entity_summary,review_status,review_store

c) To publish Magento stored Users:
customer, customer_detail_varchar

SECTION 7: USING MAGENTO DB PUBLISHER

Magento DB Publisher is an easy to use tool will allow Magento and Server Administrator to publish different resources from their eCommerce store to the Semantic Web.

7.1 System Requirements

The following software is requiered in order to run Magento DB Publisher software:

Operating Systems: Linux x86, x86-64

Web Servers: Apache 1.3.x, Apache 2.0.x, Apache 2.2.x

Browsers:

- Microsoft Internet Explorer 7 and later
- Mozilla Firefox 3.5 and later
- Apple Safari 5 and later on Mac only
- Google Chrome 7 and later

Database Management System: MySQL 5.1+

E-Commerce: Magento CE 1.7/1.8/1.9

For information about Magento installation requirements, visit http://magento.com/resources/system-requirements. Or check Magento User Guider located in this Git-Hub account.

Note: Magento DB Publisher requires a working installations of Magento CE in order to run, if the Magento database structure is different from the default one on Magento CE 1.7+ the publication process will not work.

Additional Software: Java SE Runtime Environment 7 or newer..

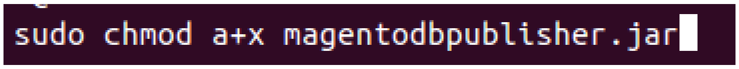
7.2 How to obtain Magento DB Publisher

This software is available for download on our git-hub space, part of the Enterprise Information System lecture offered at University of Bonn.

7.3 Running instructions

Magento DB publisher is a Java executable file, in order to successfully run this software Java SE Runtime Environment 7 must be installed on the Linux OS. Also, the folder /*lib* must be on the same directory as the executable file (.jar). The folder "lib" has the libraries and D2RQ files required by the software to successfully process the database.

Before running the program the user must give permissions to the executable file, the following command has to be run on the linux terminal:



```
sudo chmod a+x magentodbpublisher.jar
```

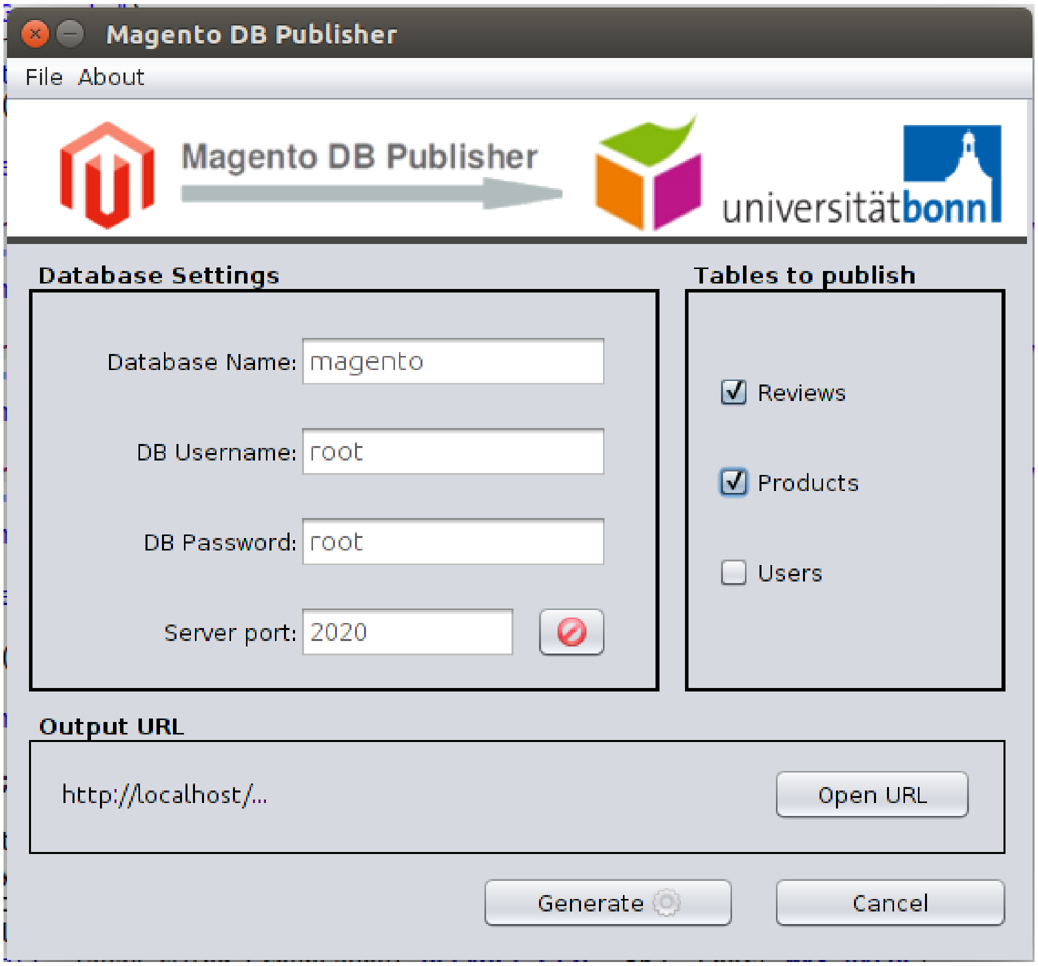
Fig. 17. permission to .jar file

After executing this command the User can run the program just with a doble-click.

7.4 Graphical User Interface

In this section the Magento DB publisher GUI is explained:

7.4.1. GUI Overview.



Database Settings

Database Name: magento

DB Username: root

DB Password: root

Server port: 2020

Tables to publish

☑ Reviews

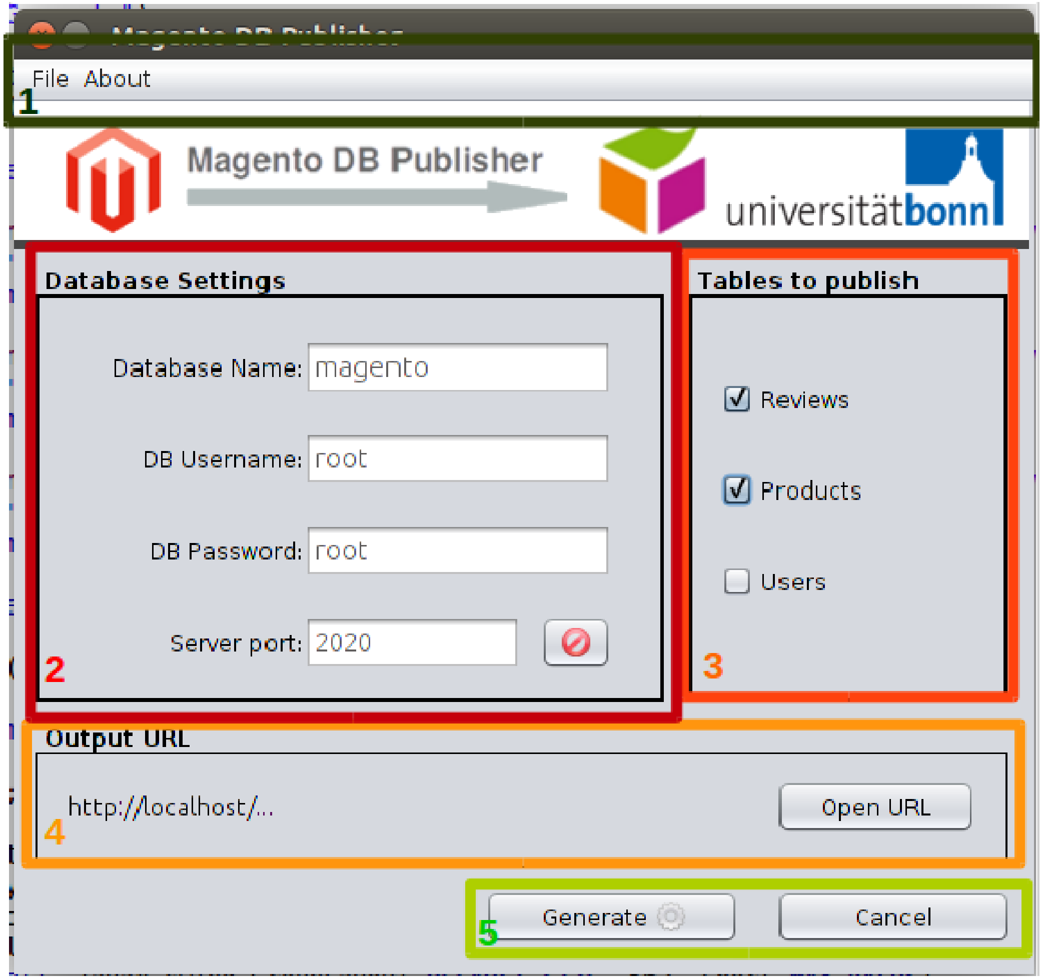
☑ Products

□ Users

Output URL

http://localhost/...

Fig. 18. Magento DB Publisher Main View



Database Name: magento

DB Username: root

DB Password: root

Server port: 2020

☑ Reviews

☑ Products

☐ Users

http://localhost/...

Fig. 19. Magento DB Publisher Main View GUI sections

7.4.2. Menu Section.

This Menu section has 4 buttons: Open, Close, Exit (File) and About. That corresponds with the File management and the extra information about the software.

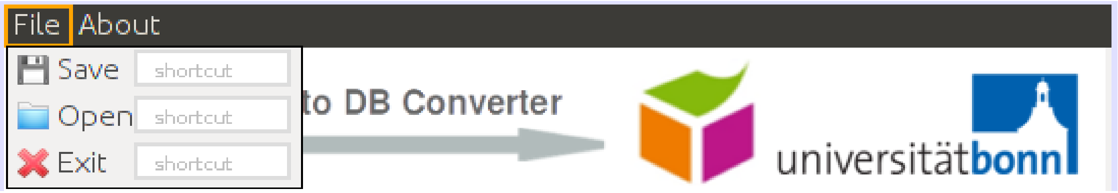
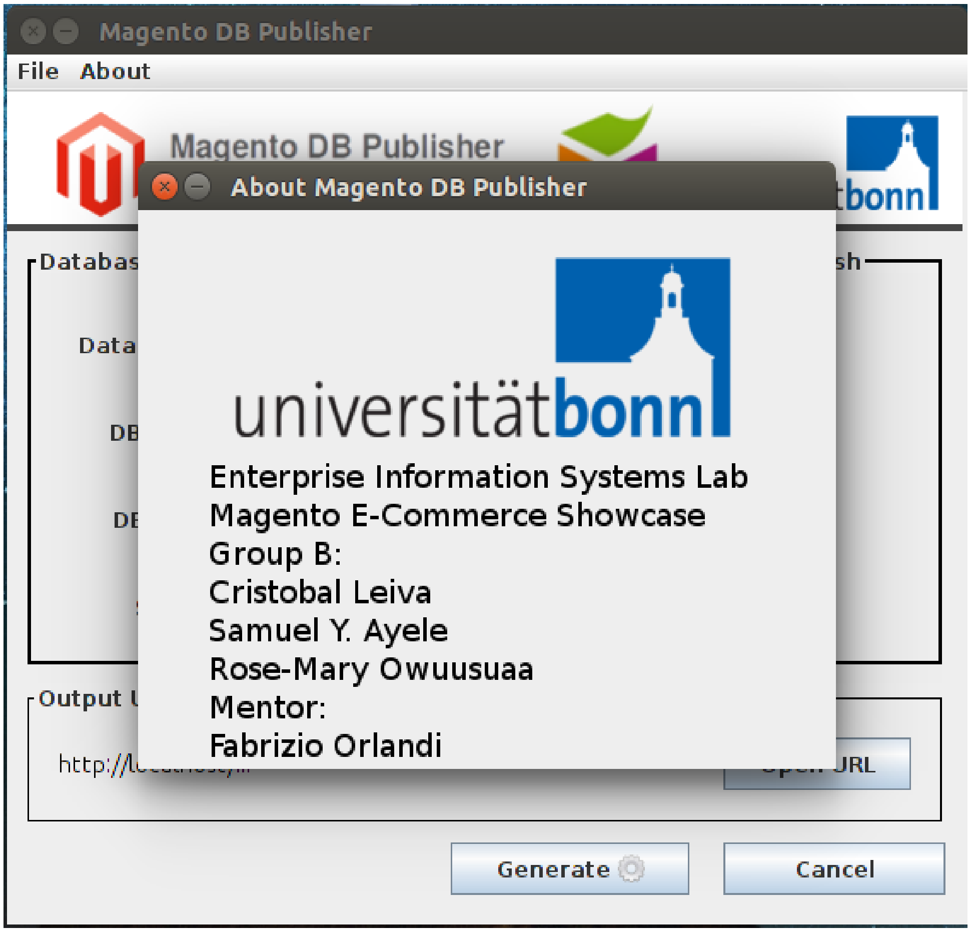


Fig. 20. File Menu Options

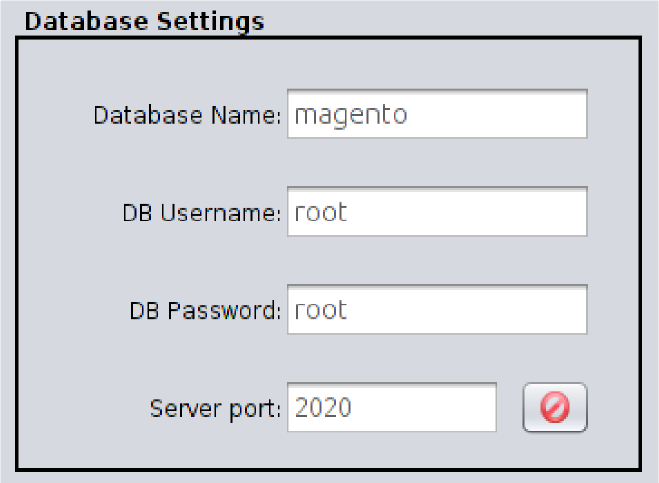


Enterprise Information Systems Lab
Magento E-Commerce Showcase
Group B:
Cristobal Leiva
Samuel Y. Ayele
Rose-Mary Owuusuaa
Mentor:
Fabrizio Orlandi

Fig. 21. About Menu Option

7.4.3. Input Section.

This section is where the user introduces the required information to access the Magento DB and publish required information.



Database Name: magento

DB Username: root

DB Password: root

Server port: 2020

Fig. 22. Input – Database settings

a) Database Name: Introduce the name of the MySQL Database where Magento is installed. This DB is usually named Magento.

b) DB Username: Introduce the username credential tu access MySQL Database.

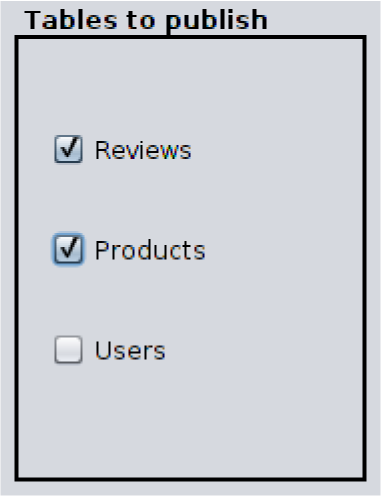
c) DB Password: Introduce the password credential tu access MySQL Database.

d) Server port: Select the port where the publication will be done, port 2020 is recommended.

e) Close port button: This button provides the possibility to close an already opened port on the server, this way you may give the port a new use though this software.

7.4.4. Tables Selection.

In this section the User selects the information of Magento that wants to publish. The only data available for publishing though this software are User Reviews, Catalogs & Products and Users information.



Tables to publish

☑ Reviews

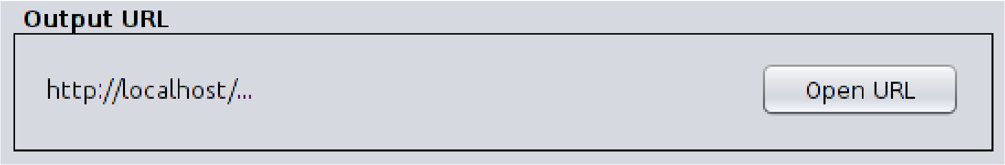
☑ Products

□ Users

Fig. 23. DB Tables selection

7.4.5. Output.

Here the link with the published data is provided and a button (Open URL) opens the URL on a default web browser.



http://localhost/...

Fig. 24. Output section

The URL provided is accessible though the introduced port in the apache localhost, the OpenURL button opens the URL on a default web browser.

7.4.6. URL Creation.

After the input information has been given and tables to publish selected. The button Generate will start the process of publication, and provide through the Output section the URL with the data on Semantic Web technologies.

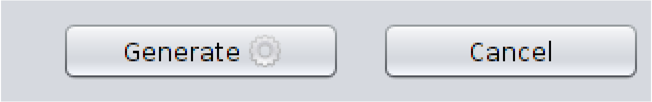
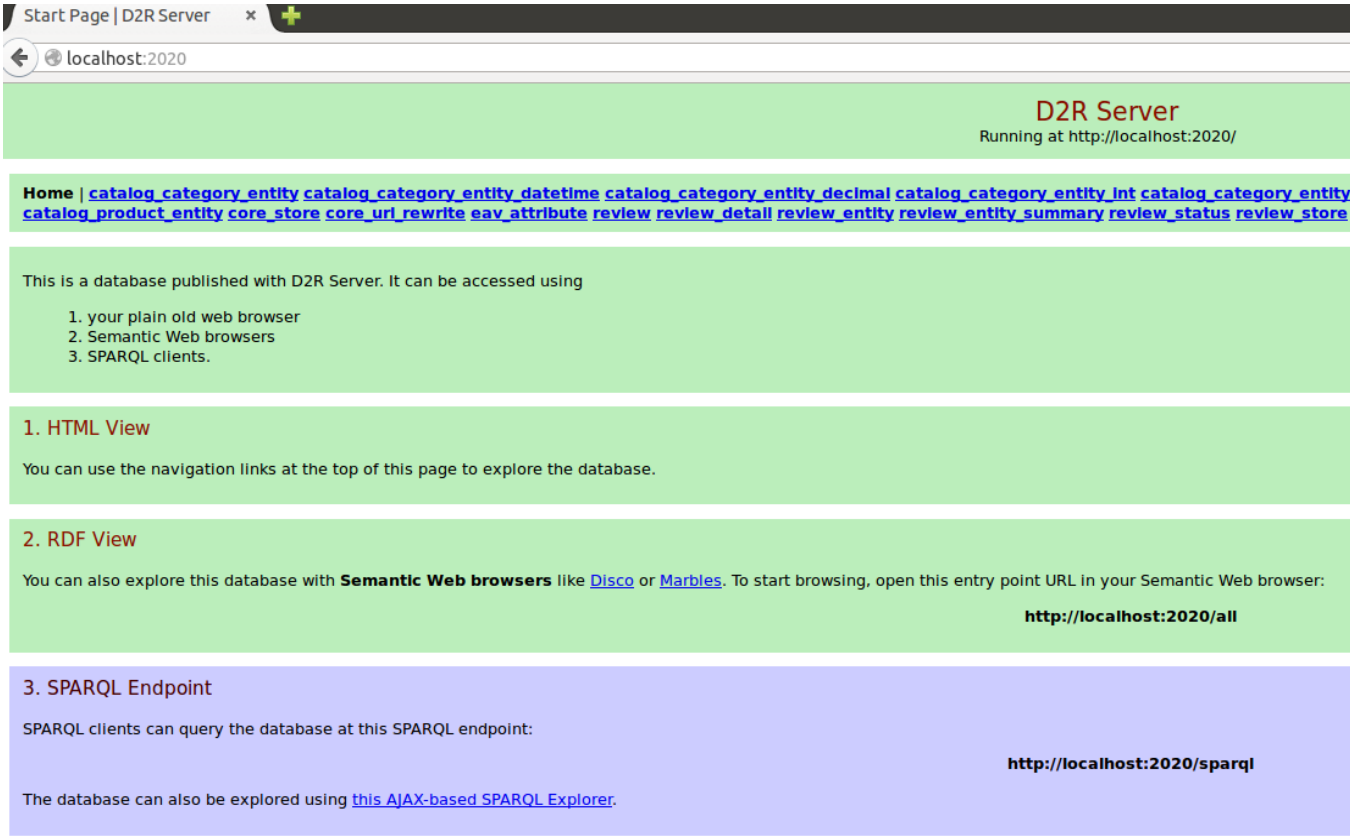


Fig. 25. URL Creation



D2R Server
Running at http://localhost:2020/

Home | catalog_category_entity catalog_category_entity_datetime catalog_category_entity_decimal catalog_category_entity_int catalog_category_entity
catalog_product_entity core_store core_url_rewrite eav_attribute review review_detail review_entity review_entity_summary review_status review_store

This is a database published with D2R Server. It can be accessed using

1. your plain old web browser
2. Semantic Web browsers
3. SPARQL clients.

1. HTML View

You can use the navigation links at the top of this page to explore the database.

2. RDF View

You can also explore this database with **Semantic Web browsers** like Disco or Marbles. To start browsing, open this entry point URL in your Semantic Web browser:

http://localhost:2020/all

3. SPARQL Endpoint

SPARQL clients can query the database at this SPARQL endpoint:

http://localhost:2020/sparql

The database can also be explored using this AJAX-based SPARQL Explorer.

Fig. 26. D2RQ Portal Output

7.5 Step by Step Tutorial

1) Follow the program running instructions presented on point 2.4 on this document.

2) Run magentodbpublisher.jar file.

3) On the input section introduce the database credentials and make sure that the port introduced is closed (use the Close Port button if is required)

4) Chack the tables you want to publish on the Tables Selection section.

5) Press “Generate” button.

6) Copy the URL provided on your browser or simply press the button OpenURL.

7) Done! On the D2RQ portal output you will be able to access the Magento data using different semantic web technologies, all provided by D2RQ server. For mor information about D2RQ server go to: http://d2rq.org/d2r-server

SECTION 8: Magento DB Publisher Testing

8.1 Introduction

JUnit is a unit testing framework for the Java programming language. JUnit has been important in the development of test-driven development, and is one of a family of unit testing frameworks which is collectively known as xUnit that originated with SUnit.

JUnit is linked as a JAR at compile-time; the framework resides under package junit.framework for JUnit 3.8 and earlier, and under package org.junit for JUnit 4 and later.

A research survey performed in 2013 across 10,000 GitHub projects found that JUnit, along with slf4j-api, are the most popular libraries. Each library was used by 30.7% of projects.

8.2 JUnit Testing

The most important methods on Magento DB Publisher code were tested using Junit, this ensure a robust functionality and correctness of the program behavior.

To check this section in detail go to Magento DB Publisher source code available on git-hub.