Magento DB Publisher

ABOUT THIS GUIDE

This guide is intended to provide an overview of how to use the Magento DB Converter and D2RQ Server on a Linux system. It provides a quick guide through the most important steps of setup process. It starts with an overview of Magento DB Converter, D2RQ Server and then follows the instructions of use of the software. The last section is about testing method used for the development of the software.

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SECTION 1

1.1 A brief 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

Magento DB Publisher has been only tested under Magento Community Edition 1.7+, please feel free to provides us with any feedback about it usage over other Magento Versions.

For more information about Magento CE please refer to our Magento specific user guide available on Git-hub.

1.2 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.

1.3 D2RQ Server

D2R Server is a tool for publishing the content of relational databases on the Semantic Web, a global information space consisting of Linked Data.

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..

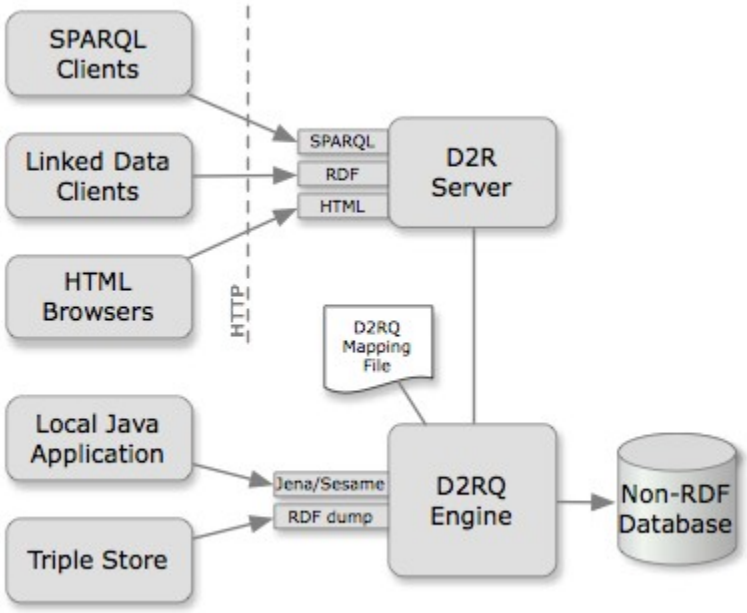

Fig. 1. D2R Server architecture diagram

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

1.4 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.

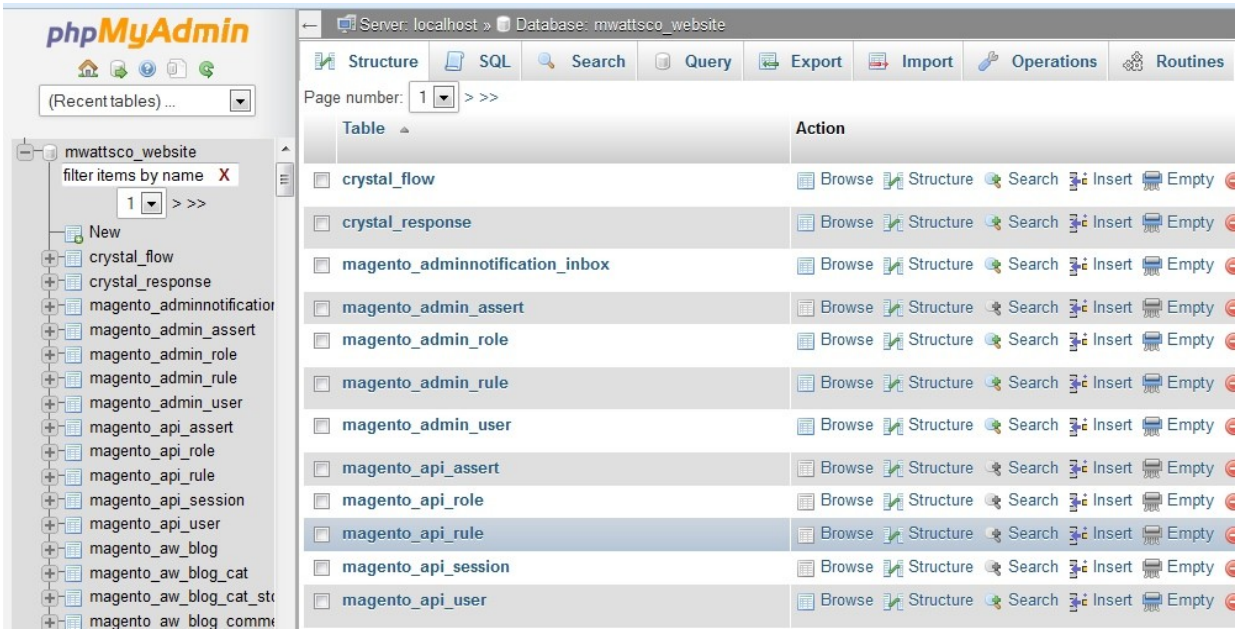

Fig. 2. Magento tables sample

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:
review,review_detail,review_entity,review_entity_summary,review_status,review_store

SECTION 2: USING MAGENTO DB PUBLISHER

2.1 Introduction

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.

2.2 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.

2.3 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.

2.4 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:

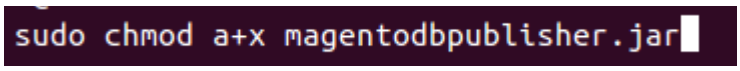

Fig. 3. permission to .jar file

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

2.5 Graphical User Interface

In this section the Magento DB publisher GUI is explained:

2.5.1. GUI Overview.

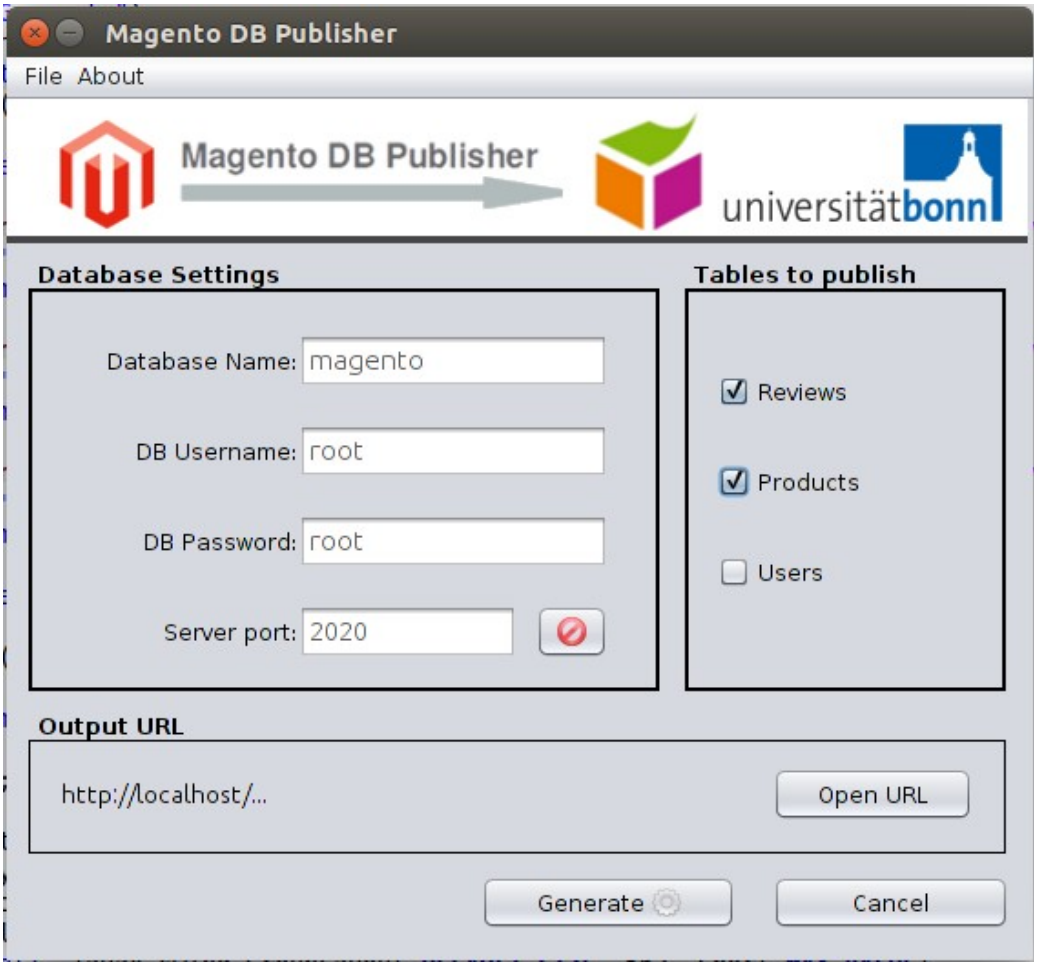

Fig. 4. Magento DB Publisher Main View

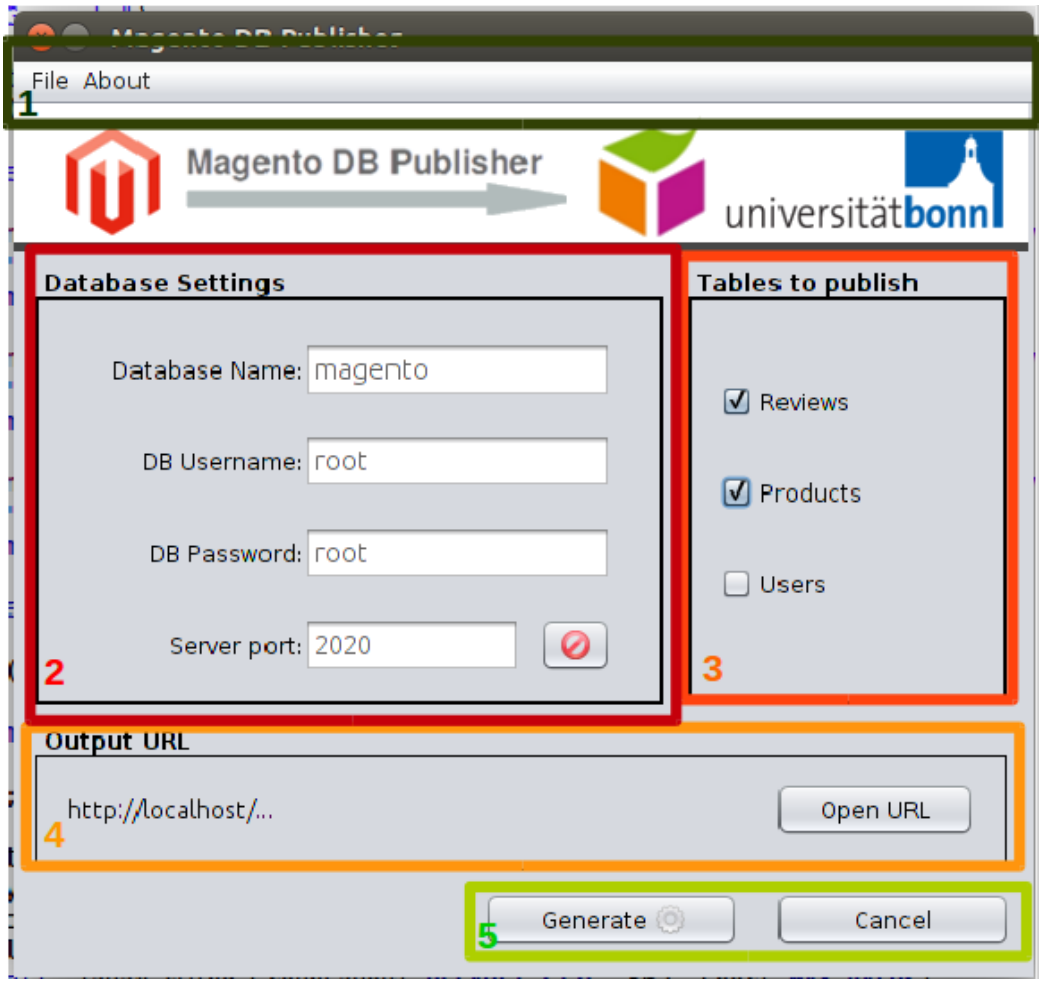

Fig. 5. Magento DB Publisher Main View GUI sections

2.5.2. 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. 6. File Menu Options

Fig. 7. About Menu Option

2.5.3. Input Section.

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

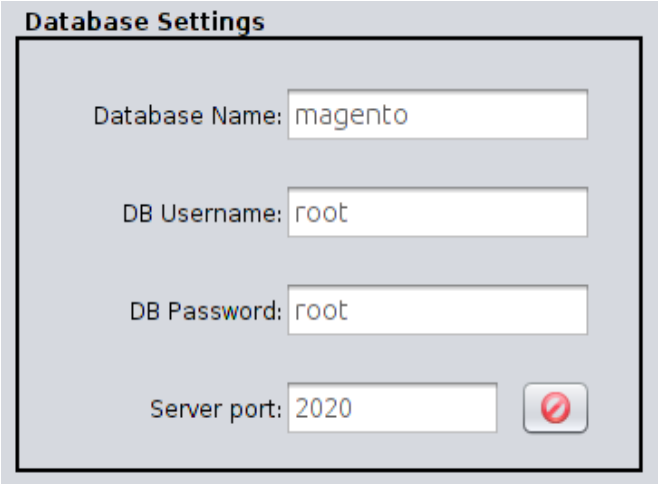

Fig. 8. Input – Database settings

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.

2.5.4. 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.

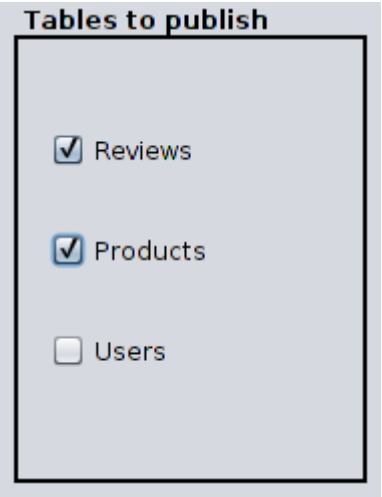

Fig. 9. DB Tables selection

2.5.5. Output.

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

Fig. 10. 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.

2.5.6. 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.

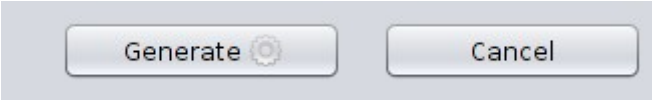

Fig. 11. URL Creation

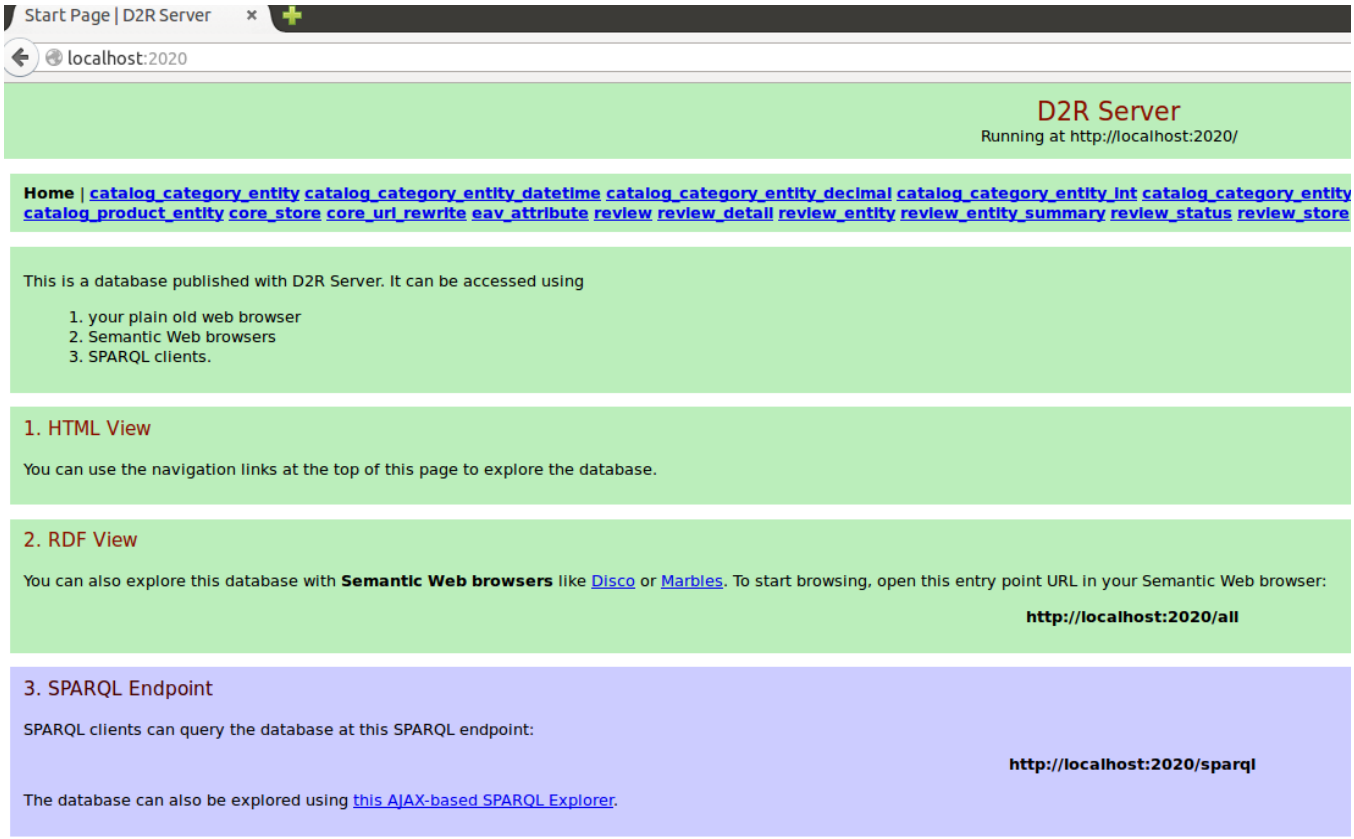

Fig. 12. D2RQ Portal Output

2.6 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 3: JUnit Testing

3.1 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.

3.2 Testing Magento DB Publisher

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.