

Magentix2

Developer and User

Guide



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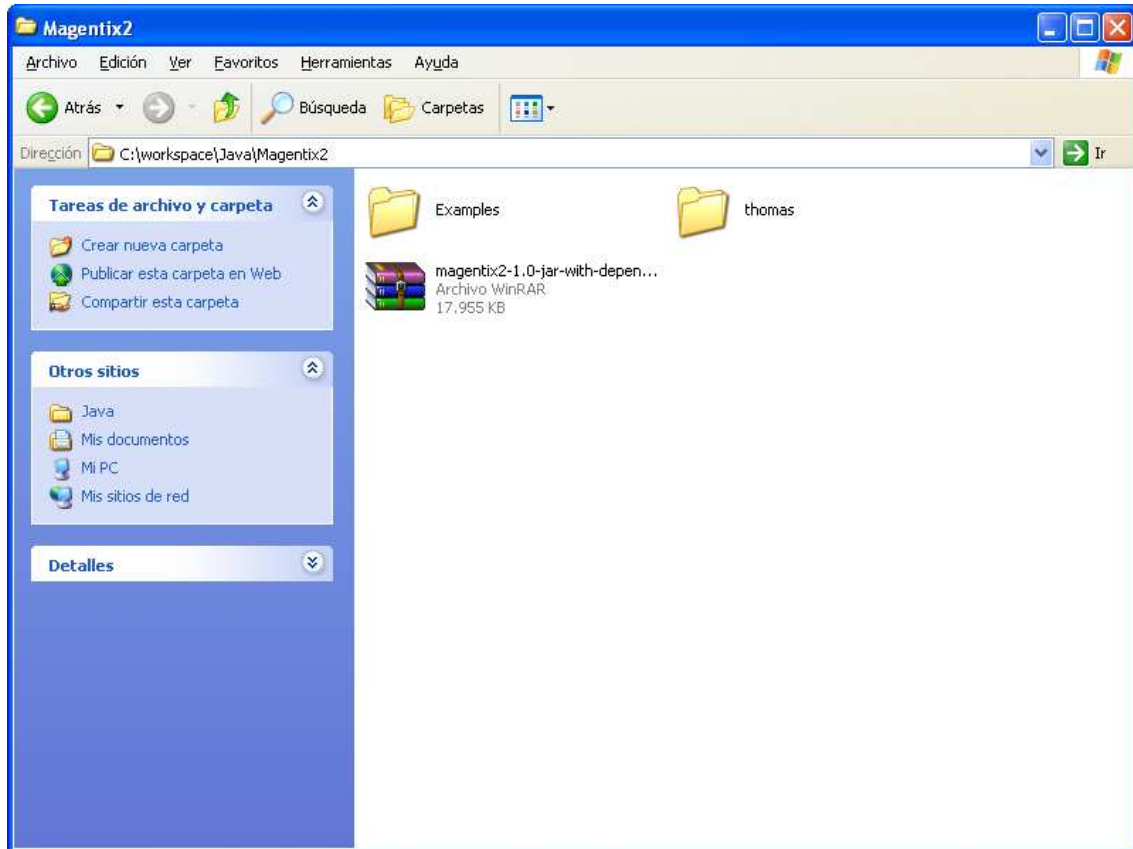


Introduction

This document briefly describes how to install, develop and run some examples of the Magentix2 platform.

Download Magentix 2

<http://users.dsic.upv.es/grupos/ia/sma/tools/tools.htm>



Magentix2.zip includes:

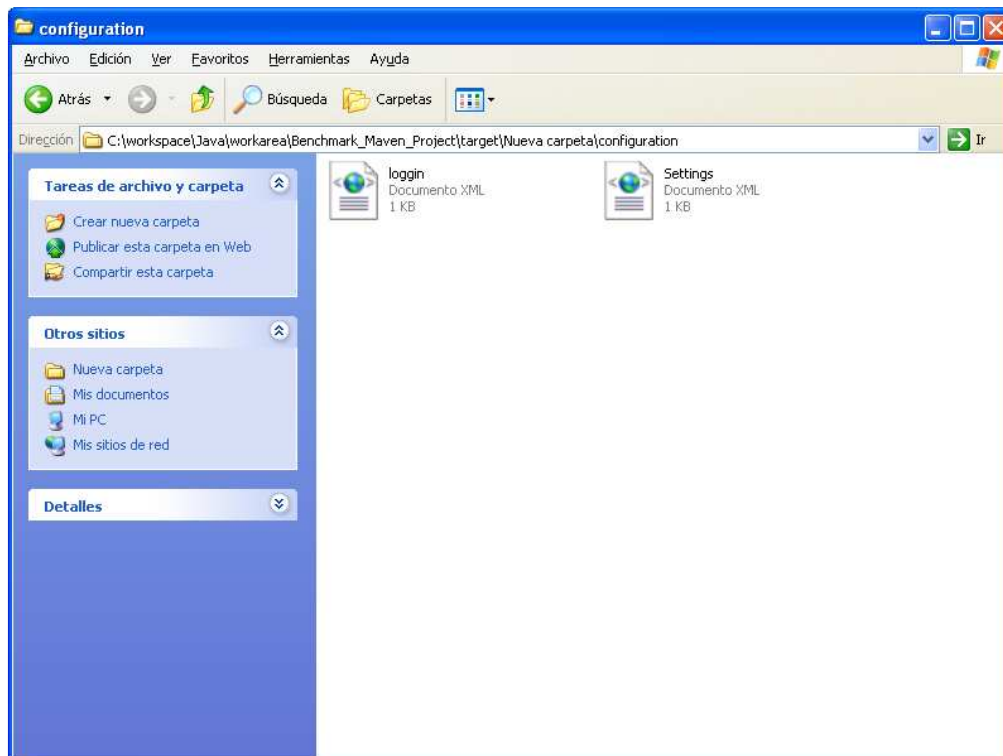
- *Magentix2-1.0-with-dependencies.jar*: this jar includes all additional libraries required to work (develop, compile,...) with Magentix2.
- *Configuration subdirectory*: includes the settings.xml and login.xml files configuration files of Magentix2.
- *Examples subdirectory*: includes some examples to show Magentix2 performance.
- *Licenses subdirectory*.



Pre-requisites

QPID (required)

The document “**INSTALL QPID IN UBUNTU 9.04 32 BITS.pdf**” describes how to install Qpid/C++ broker from the source distribution <http://qpid.apache.org/> on Linux/Unix operating system. Suppose that QPID c++ broker is running in a host called “**broker.host.name**” and listen messages on port **5672**¹. Other Broker configuration parameters as “**virtualhost**”², “**user**” “**password**” and “**ssl**” could be configured on the *settings.xml* file of Magentix2:



```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE properties SYSTEM "http://java.sun.com/dtd/properties.dtd">
<properties>
.....
  <entry key="host"> broker.host.name</entry>
  <entry key="port"> port</entry>
  <entry key="vhost"> virtualhost</entry>
  <entry key="user"> username</entry>
  <entry key="password"> password</entry>
  <entry key="ssl"> false</entry>
.....
</properties>
```

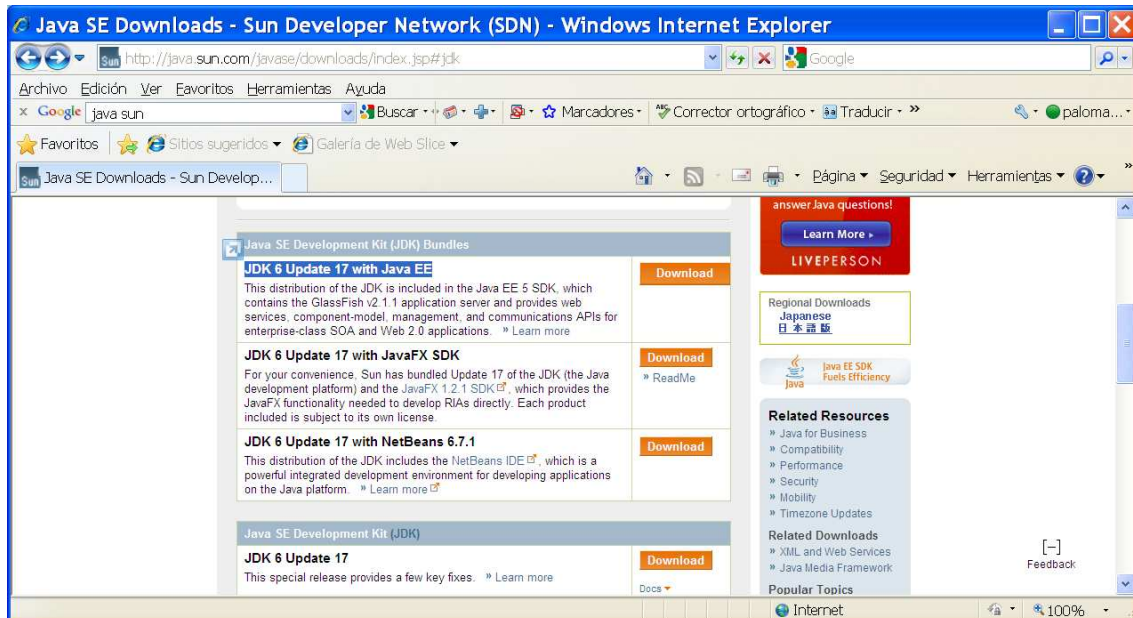
¹ The QPID C++ broker is pre-configured by default to listen messages on port 5672 but also it is possible configure to listen on other ports (<http://qpid.apache.org/rasc.html>).

² The term Virtual Host refers to the practice of running more than one web site on a single machine. The fact that they are running on the same physical server is not apparent to the end user.



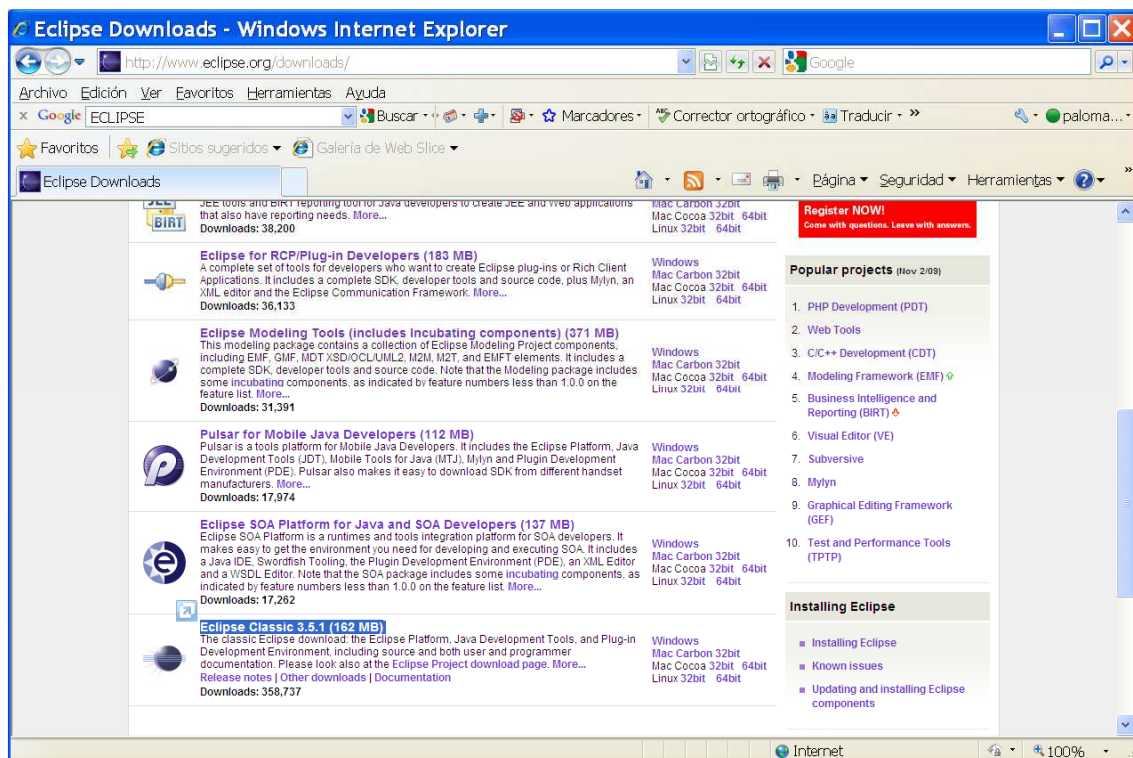
JDK 6 (required)

<http://java.sun.com/javase/downloads/index.jsp#jdk>



ECLIPSE (recommended IDE)

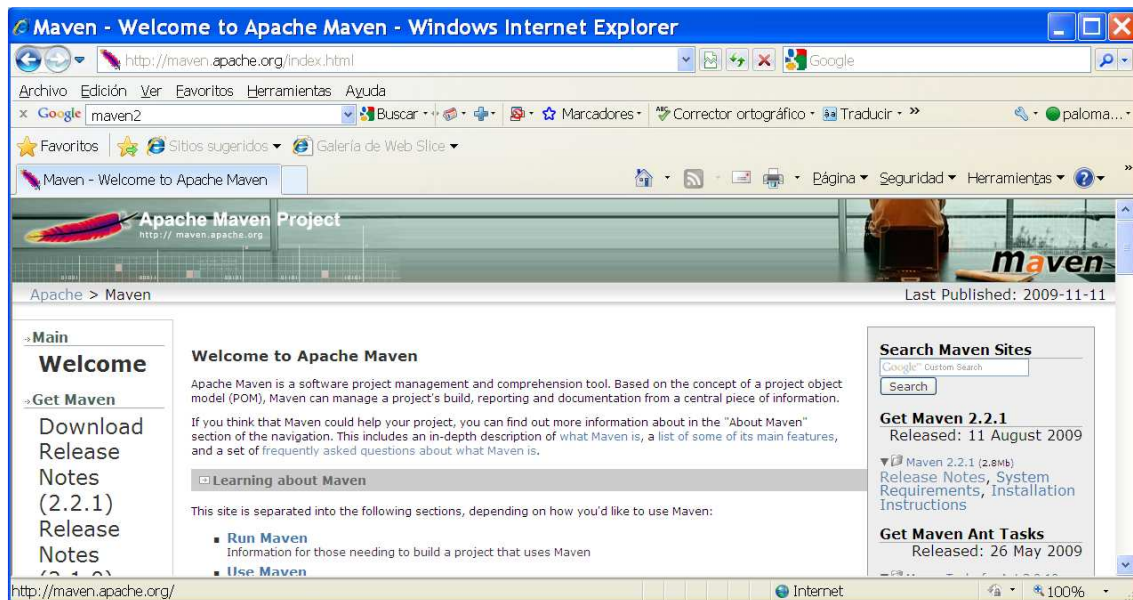
<http://www.eclipse.org/>



MAVEN2 (recommended management tool)

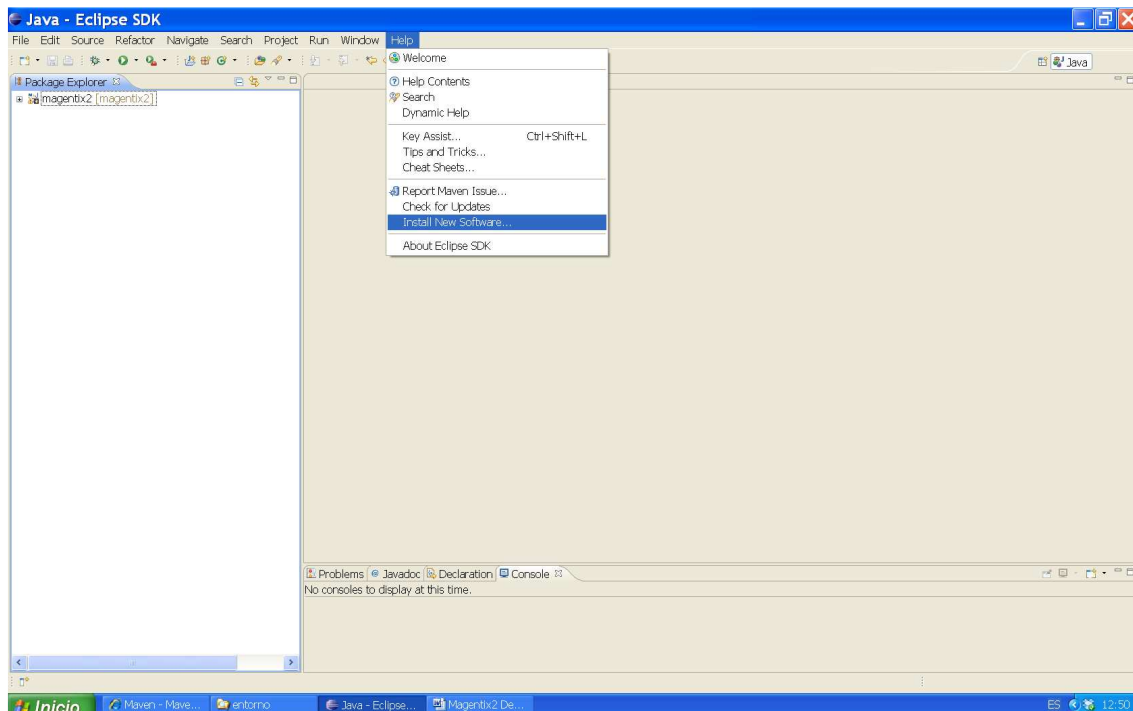
Apache Maven is a software management tool based on the concept of a project object model (POM). Maven can manage a project's build, reporting and documentation from a central piece of information.

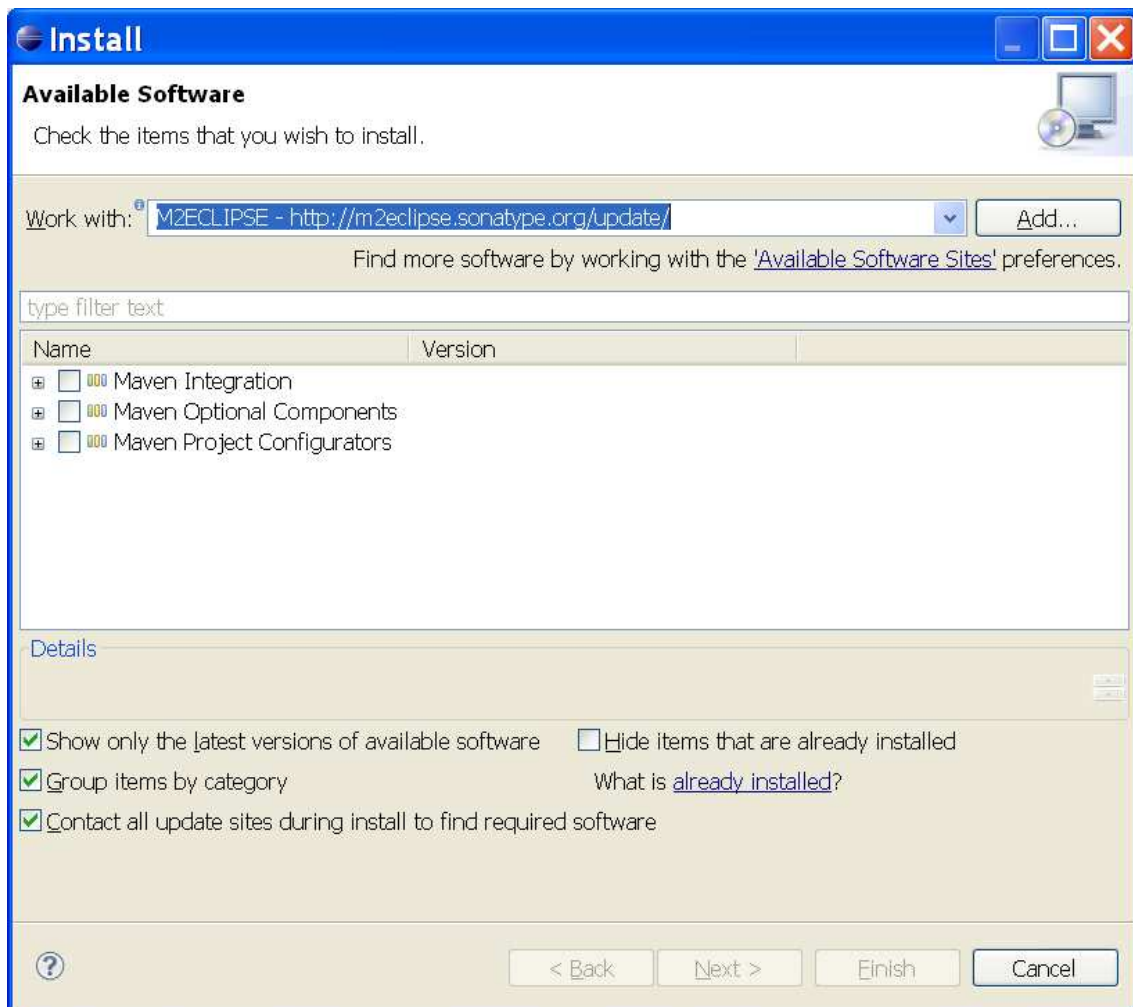
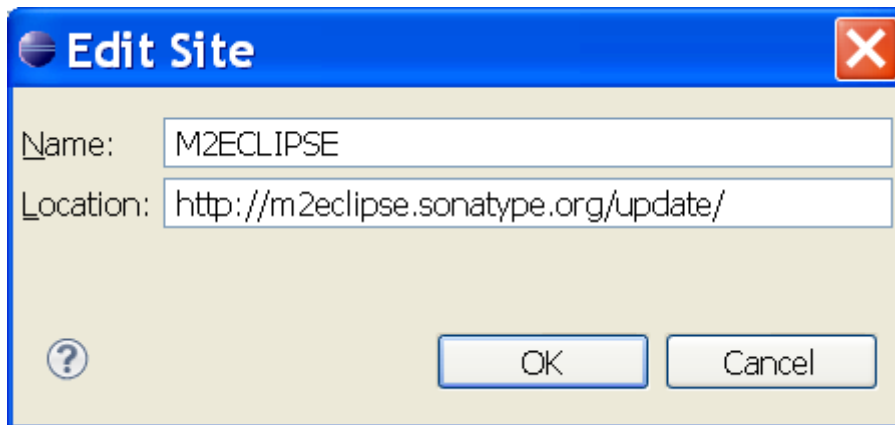
<http://maven.apache.org/>

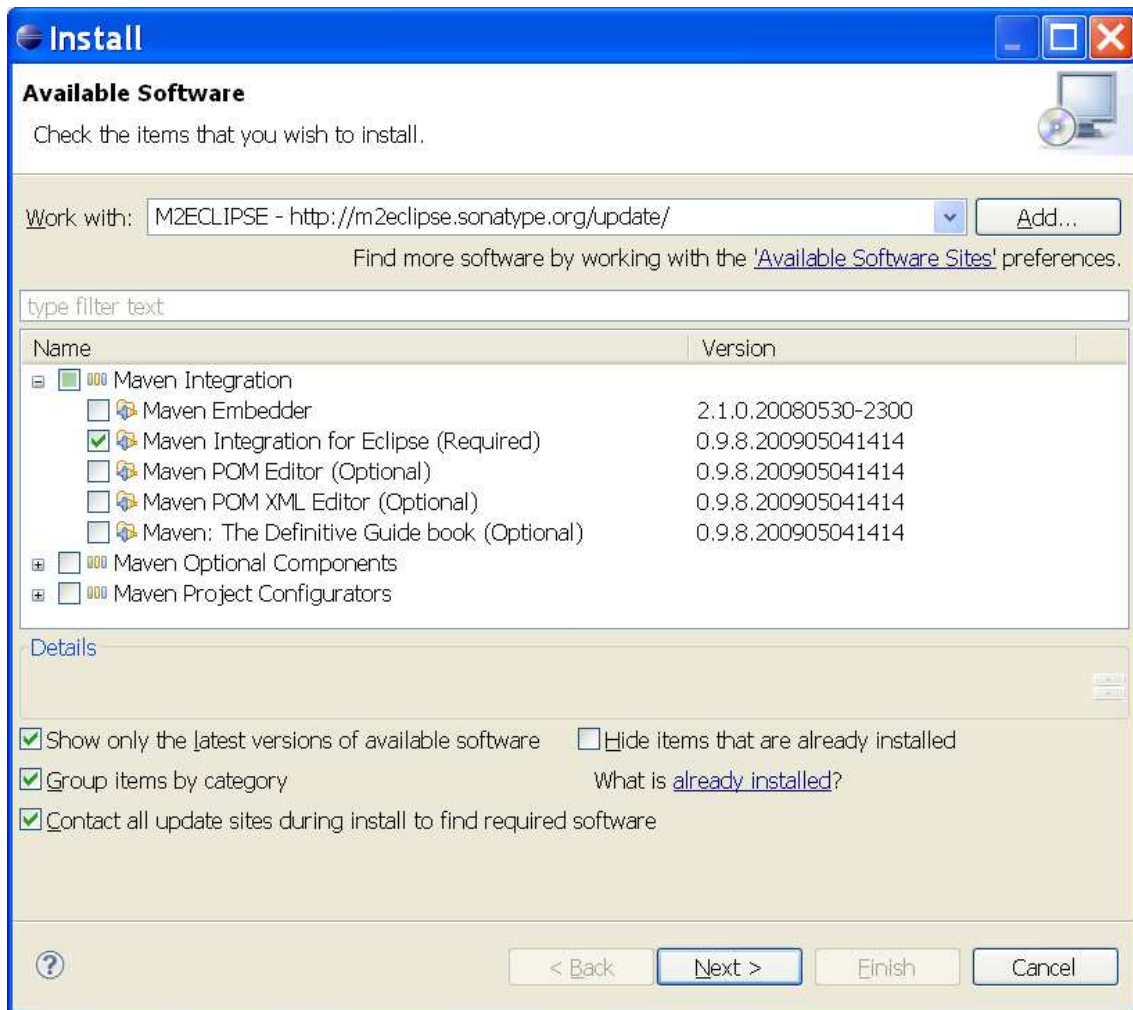


Eclipse plugin for Maven2

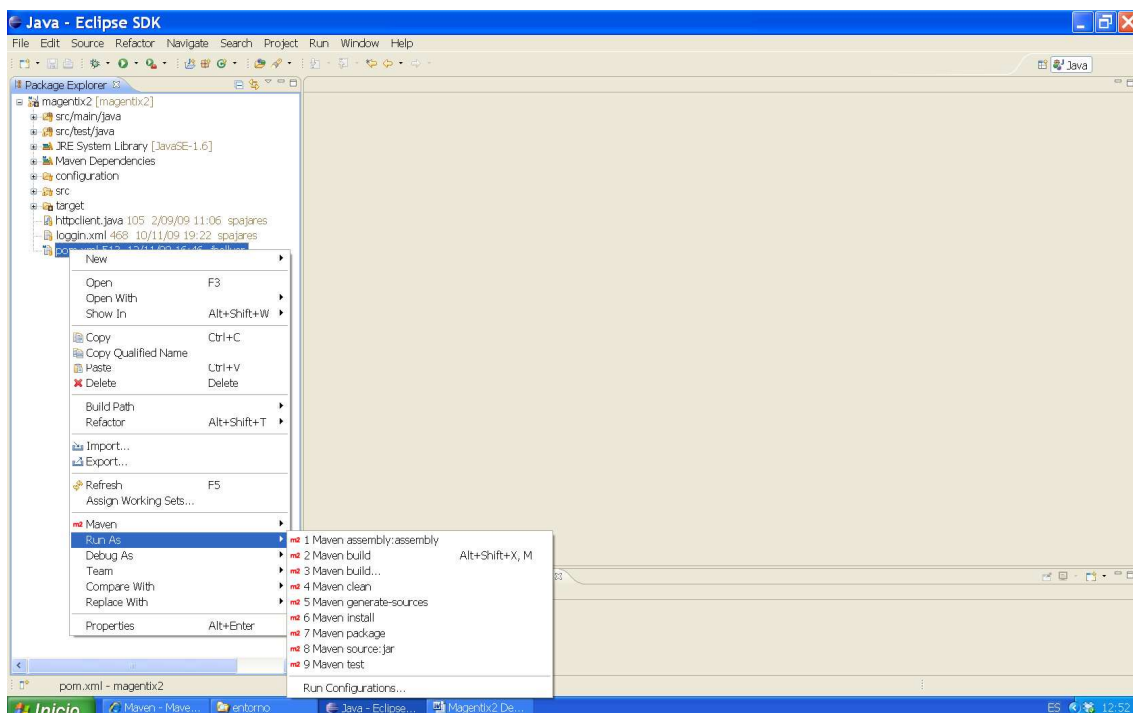
M2 Eclipse plugin allow using Maven with Eclipse IDE.





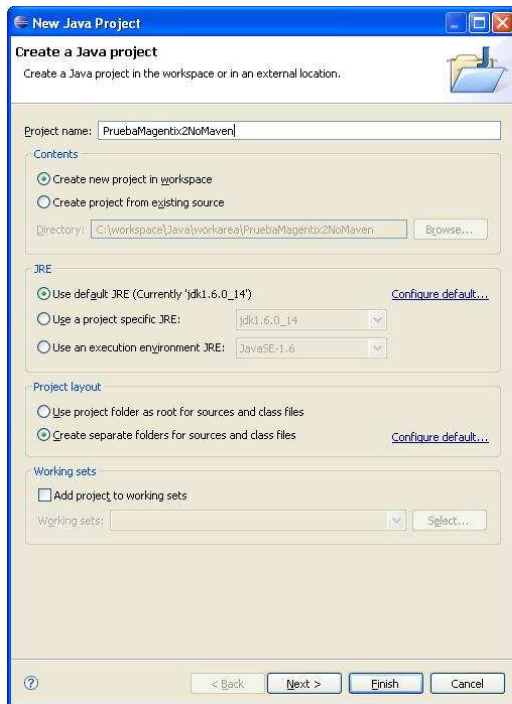


The Maven2 plugin has been installed in Eclipse:

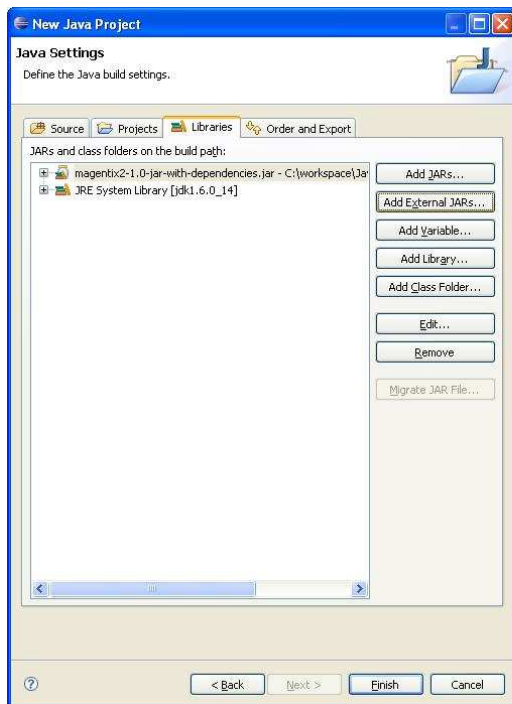


Configure Eclipse IDE (without Maven2)

Create a New Java project:



Add Magentix2.jar dependence

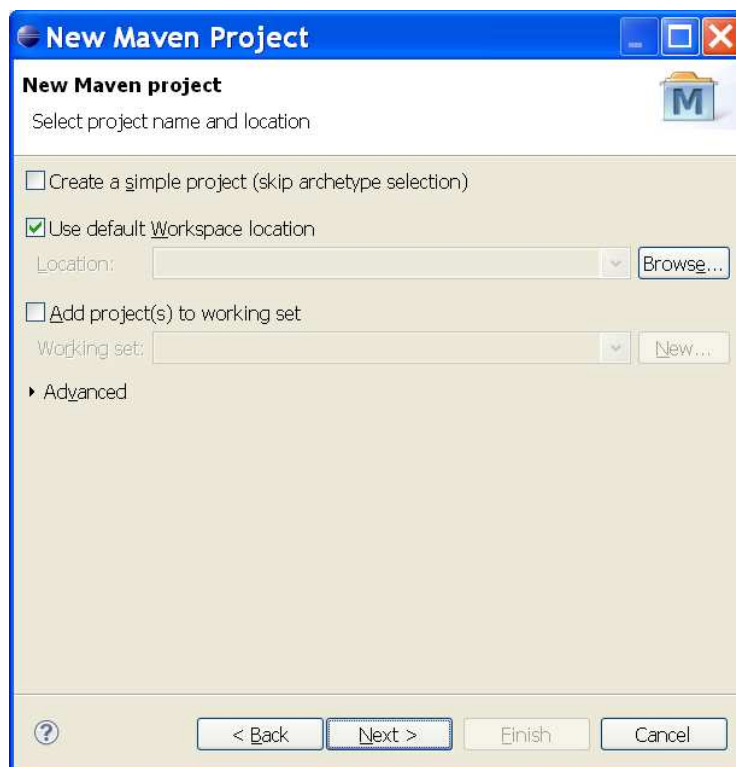
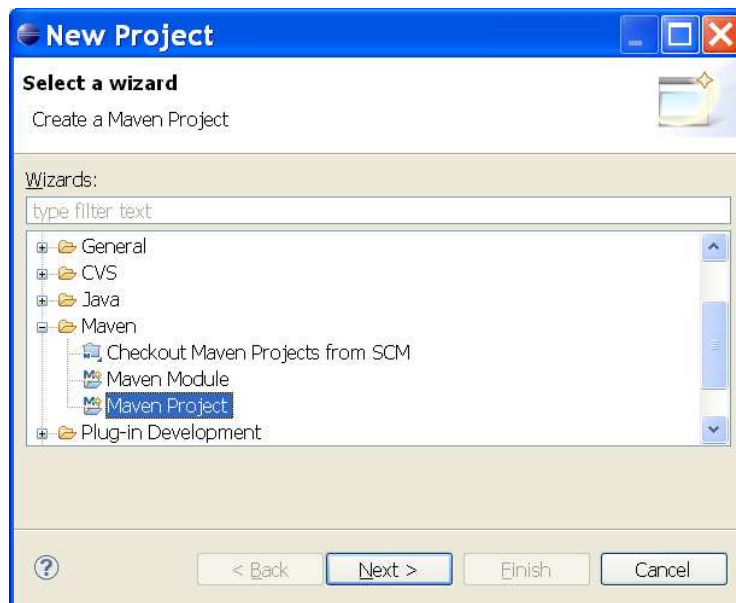


Configure Eclipse ID (with maven)

Install magentix2 in “*Maven Local Repo*”:

```
mvn install:install-file -Dfile=magentix2_1.0.jar  
-DgroupId=es.upv.dsic.gti-ia  
-DartifactId=magentix2  
-Dversion=1.0  
-Dpackaging=jar
```

Create a New Maven project:



New Maven Project

New Maven project

Select an Archetype

Catalog: Internal Configure...

Filter:

Group Id	Artifact Id	Version
org.apache.maven.archetypes	maven-archetype-portlet	1.0.1
org.apache.maven.archetypes	maven-archetype-profiles	1.0-alpha-4
org.apache.maven.archetypes	maven-archetype-quickstart	1.0
org.apache.maven.archetypes	maven-archetype-site	1.0
org.apache.maven.archetypes	maven-archetype-site-simple	1.0
org.apache.maven.archetypes	maven-archetype-webapp	1.0
org.apache.maven.archetypes	softeu-archetype-jsf	RELEASE
org.apache.maven.archetypes	softeu-archetype-seam	RELEASE
org.apache.maven.archetypes	softeu-archetype-seam-simple	RELEASE

<http://repo1.maven.org/maven2>

☒ Show the last version of Archetype only Add Archetype...

► Advanced

? < Back Next > Finish Cancel

New Maven Project

New Maven project

Specify Archetype parameters

Group Id: prueba

Artifact Id: agente

Version: 0.0.1-SNAPSHOT

Package: prueba.agente

Properties:

Name	Value

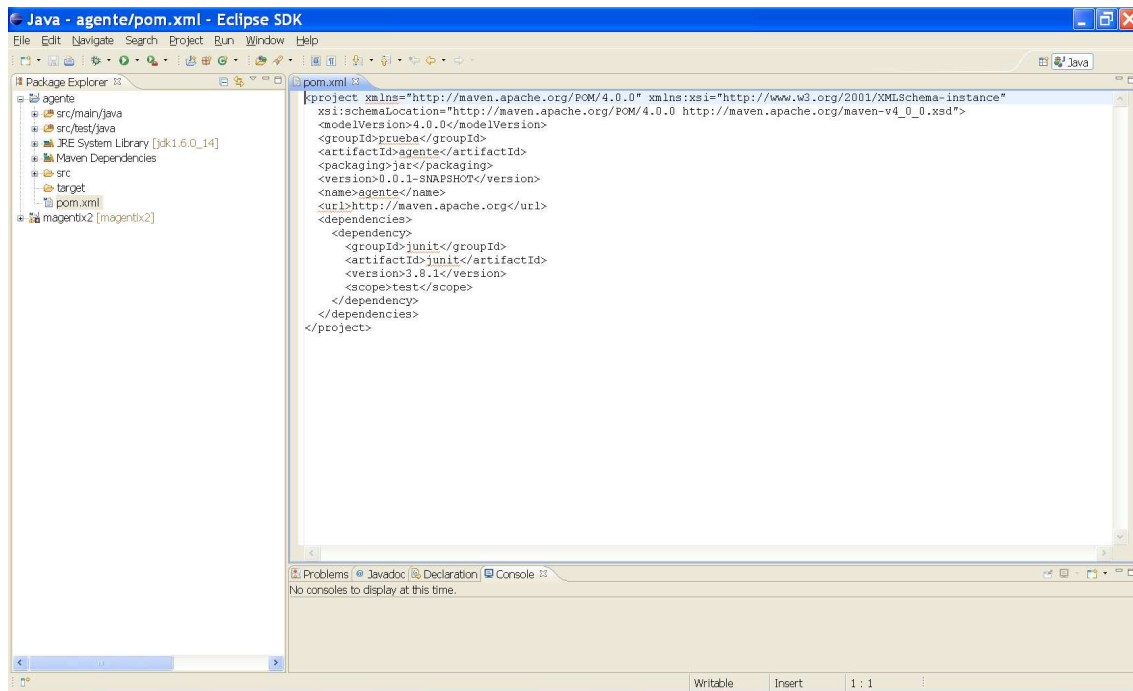
Add...
Remove

► Advanced

? < Back Next > Finish Cancel

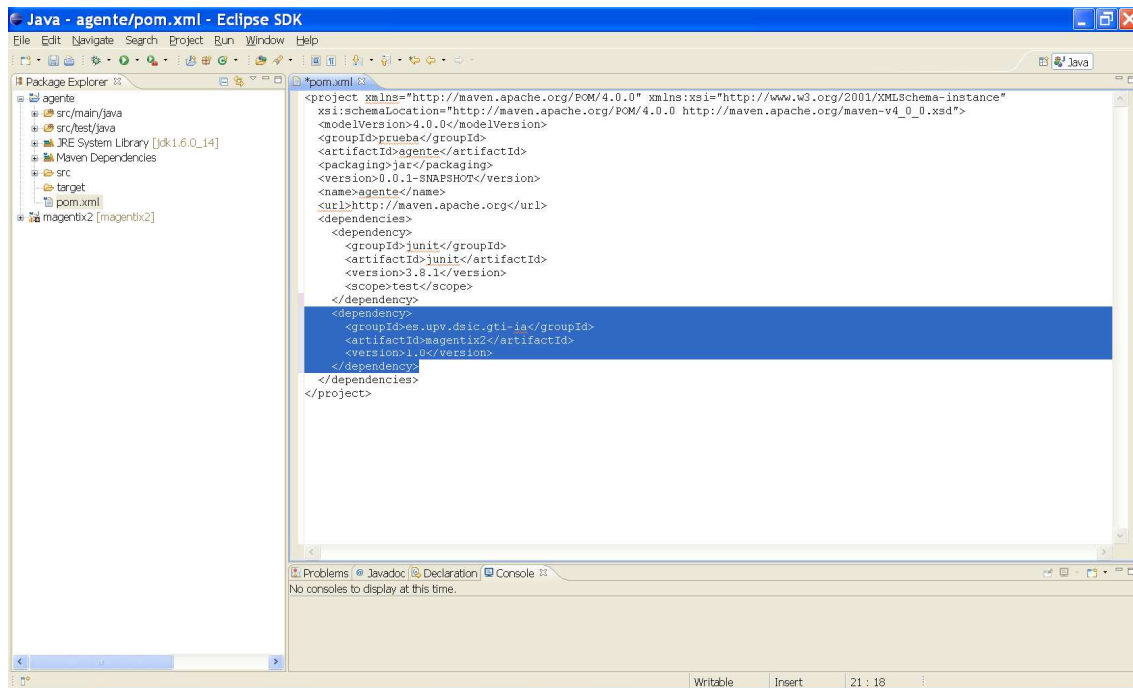


A single maven project is created in Eclipse IDE:



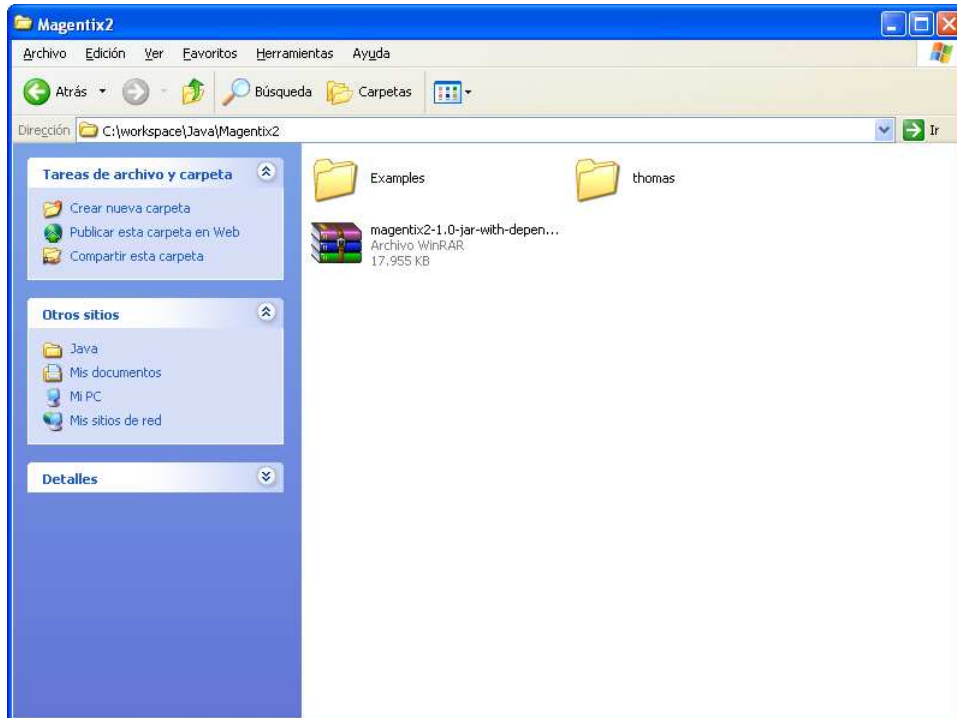
Add Magentix2 dependence in “POM.XML” file

```
<dependency>
  <groupId>es.upv.dsic.gti-ia</groupId>
  <artifactId>magentix2</artifactId>
  <version>1.0</version>
</dependency>
```



Magentix2 Examples

Subdirectory “*examples*” of Magentix2 distribution includes some examples of agents developed for this platform:



Content

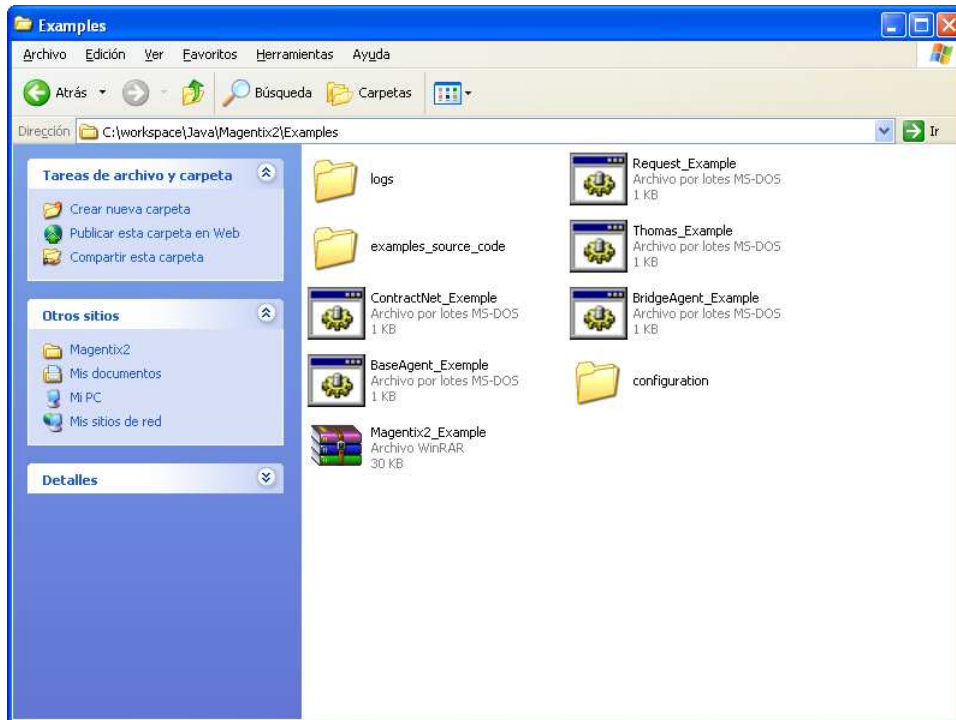
Examples included in this distribution are:

- *ContractNet.*
- *BaseAgent.*
- *Request.*
- *BridgeAgent.*
- *Thomas:*



Subdirectory “examples” includes:

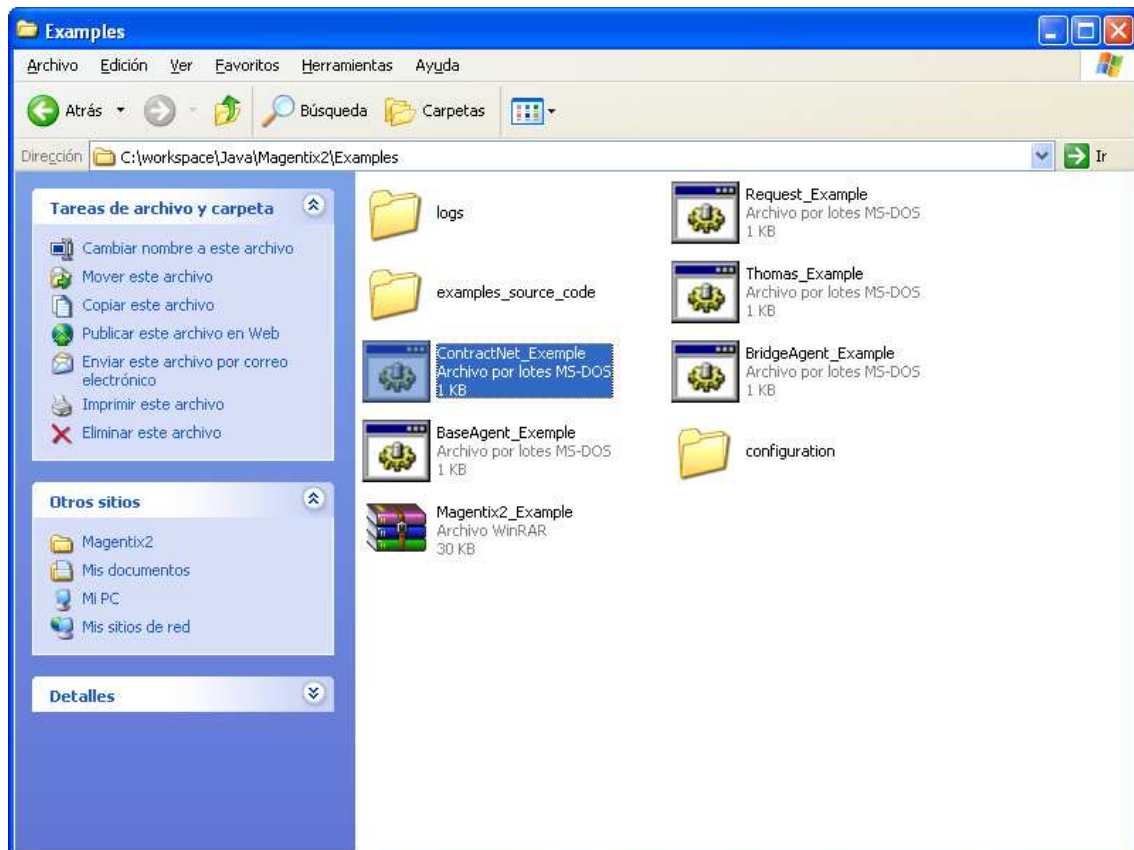
- “*Magentix2_Example.jar*”: compiled code required to run examples.
- “*/examples_source_code*” subdirectory: the source code of examples.
- “**.bat*”: allow run examples directly (Microsoft windows)³.
- “*/logs*” subdirectory: default log4j exit.
- “*/configuration*”: includes “*settings.xml*” and “*logs.xml*” configuration files of Magentix2 platform.



³ For UNIX Systems the corresponding “*.sh” files are required



Run examples



```

C:\WINDOWS\system32\cmd.exe
C:\workspace\Java\Magentix2\Examples>set CLASSPATH=;../magentix2-1.0-jar-with-dependencies.jar;
C:\workspace\Java\Magentix2\Examples>set CLASSPATH=;../magentix2-1.0-jar-with-dependencies.jar;Magentix2_Example.jar;
C:\workspace\Java\Magentix2\Examples>java ContractNet_Example.Run
Autos0: Waiting for customers...
Autos1: Waiting for customers...
Autos2: Waiting for customers...
Autos3: Waiting for customers...
Autos4: Waiting for customers...
Autos5: Waiting for customers...
Autos6: Waiting for customers...
Autos7: Waiting for customers...
Autos8: Waiting for customers...
Autos9: Waiting for customers...
Autos10: Waiting for customers...
Autos11: Waiting for customers...
Autos12: Waiting for customers...
Autos13: Waiting for customers...
Autos14: Waiting for customers...
Autos15: Waiting for customers...
Autos16: Waiting for customers...
Autos17: Waiting for customers...
Autos18: Waiting for customers...
Autos19: Waiting for customers...
Autos0: Request offer received from Client.
Autos0: Preparing Offer (21531 euros).
Autos5: Request offer received from Client.
Autos4: Request offer received from Client.
Autos4: Preparing Offer (10318 euros).
Autos3: Request offer received from Client.
Autos2: Request offer received from Client.
Autos1: Request offer received from Client.
Autos2: Preparing Offer (9470 euros).
Client: Received offer of cars Autos0. A car offers for 21531 Euros.
Autos3: Preparing Offer (28329 euros).
Autos19: Request offer received from Client.
Autos18: Request offer received from Client.
Autos17: Request offer received from Client.
Autos16: Request offer received from Client.
Autos15: Request offer received from Client.
Autos14: Request offer received from Client.
Autos13: Request offer received from Client.
Autos12: Request offer received from Client.
Autos5: Preparing Offer (21520 euros).
Autos11: Request offer received from Client.
Autos10: Request offer received from Client.
Autos9: Request offer received from Client.
Autos8: Request offer received from Client.
Autos7: Request offer received from Client.
  
```




```
C:\WINDOWS\system32\cmd.exe
Autos10: Preparing Offer (26708 euros).
Autos11: We have no offers available.
Autos12: Preparing Offer (29142 euros).
Autos13: Preparing Offer (19632 euros).
Autos14: Preparing Offer (28711 euros).
Autos15: Preparing Offer (15155 euros).
Autos16: Preparing Offer (11693 euros).
Autos17: We have no offers available.
Autos18: Preparing Offer (19275 euros).
Autos19: We have no offers available.
Client: Received offer of cars Autos4. A car offers for 10318 Euros.
Autos1: Preparing Offer (9141 euros).
Client: Received offer of cars Autos2. A car offers for 9470 Euros.
Autos6: Preparing Offer (16859 euros).
Client: Received offer of cars Autos3. A car offers for 28329 Euros.
Client: Received offer of cars Autos5. A car offers for 21520 Euros.
Client: Received offer of cars Autos7. A car offers for 28925 Euros.
Client: Received offer of cars Autos8. A car offers for 25156 Euros.
Client: Received offer of cars Autos9. A car offers for 26054 Euros.
Client: Received offer of cars Autos10. A car offers for 26708 Euros.
Client: Cars Autos11 does not have cars that to offer.
Client: Received offer of cars Autos12. A car offers for 29142 Euros.
Client: Received offer of cars Autos13. A car offers for 19632 Euros.
Client: Received offer of cars Autos14. A car offers for 28711 Euros.
Client: Received offer of cars Autos15. A car offers for 15155 Euros.
Client: Received offer of cars Autos16. A car offers for 11693 Euros.
Client: Cars Autos17 does not have cars that to offer.
Client: Received offer of cars Autos18. A car offers for 19275 Euros.
Client: Cars Autos19 does not have cars that to offer.
Client: Received offer of cars Autos1. A car offers for 9141 Euros.
Client: Received offer of cars Autos6. A car offers for 16859 Euros.
Client: Determined! Sell Car of the Autos1
Autos0: Offer rejected by his excessive price.
Autos2: Offer rejected by his excessive price.
Autos3: Offer rejected by his excessive price.
Autos9: Offer rejected by his excessive price.
Autos8: Offer rejected by his excessive price.
Autos7: Offer rejected by his excessive price.
Autos5: Offer rejected by his excessive price.
Autos4: Offer rejected by his excessive price.
Autos6: Offer rejected by his excessive price.
Autos1: There is a possible offer.
Autos18: Offer rejected by his excessive price.
Autos16: Offer rejected by his excessive price.
Autos15: Offer rejected by his excessive price.
Autos14: Offer rejected by his excessive price.
Autos13: Offer rejected by his excessive price.
Autos12: Offer rejected by his excessive price.
Autos10: Offer rejected by his excessive price.
Autos1: Sending purchase contract.
Client: Autos1 has sent the contract.
```

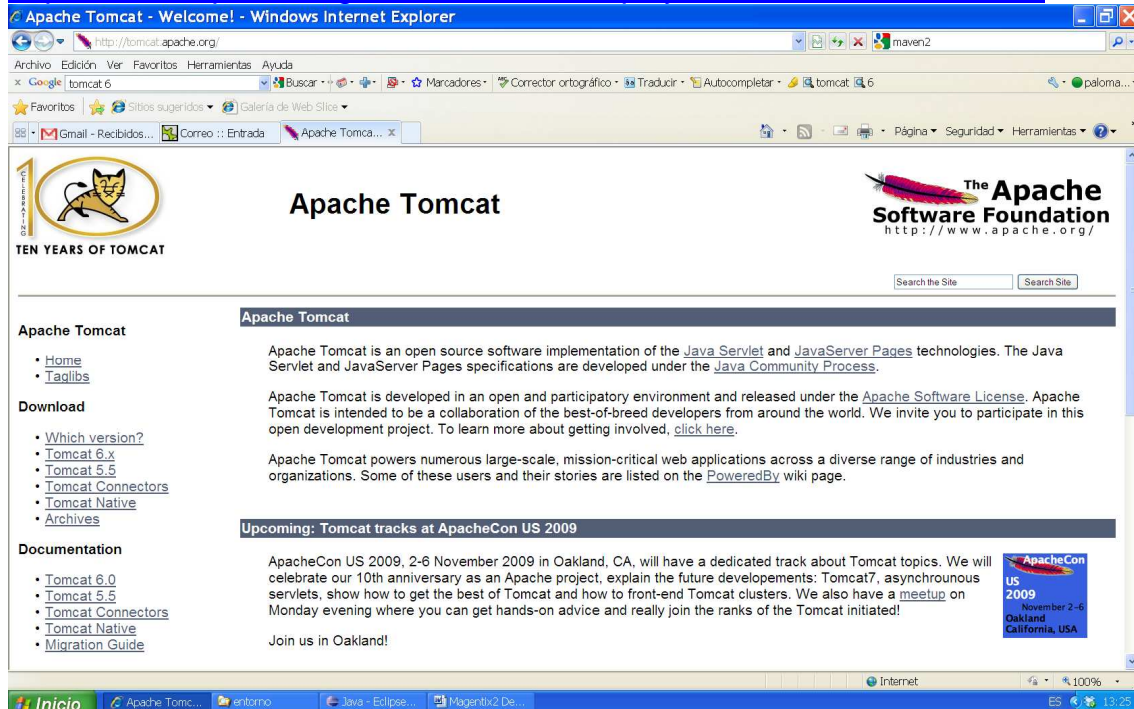


Thomas Examples

Pre-requisites

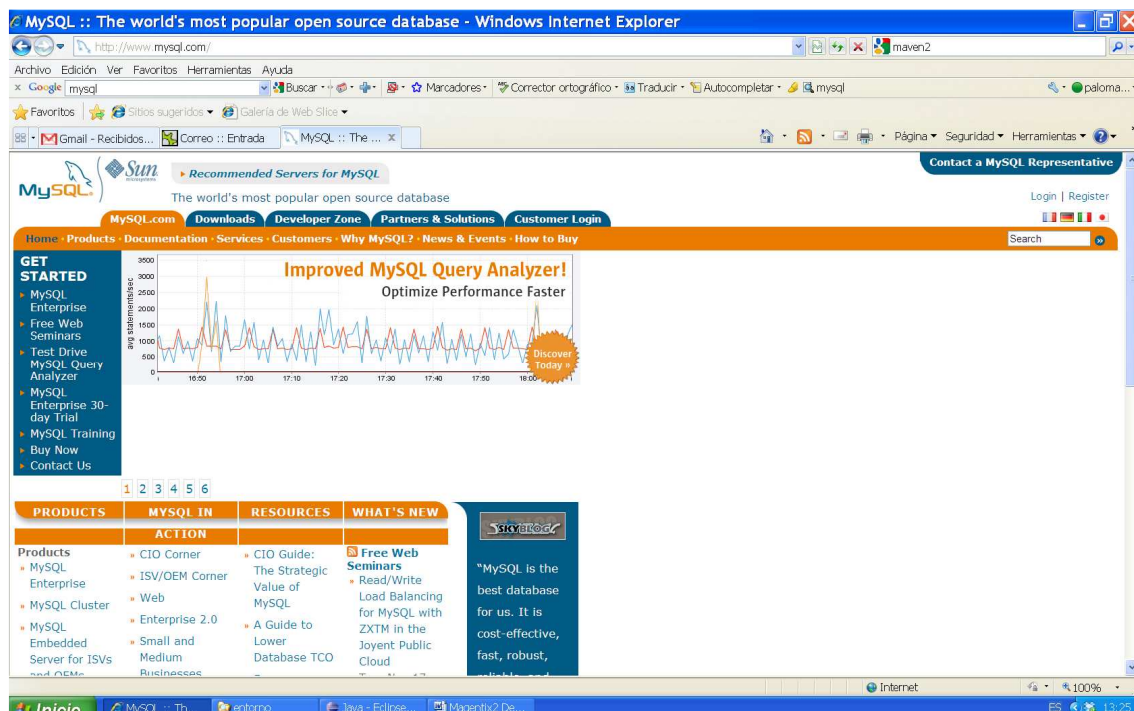
TOMCAT 6.0 (recommended server)

<http://tomcat.apache.org/tomcat-6.0-doc/deployer-howto.html#Installation>



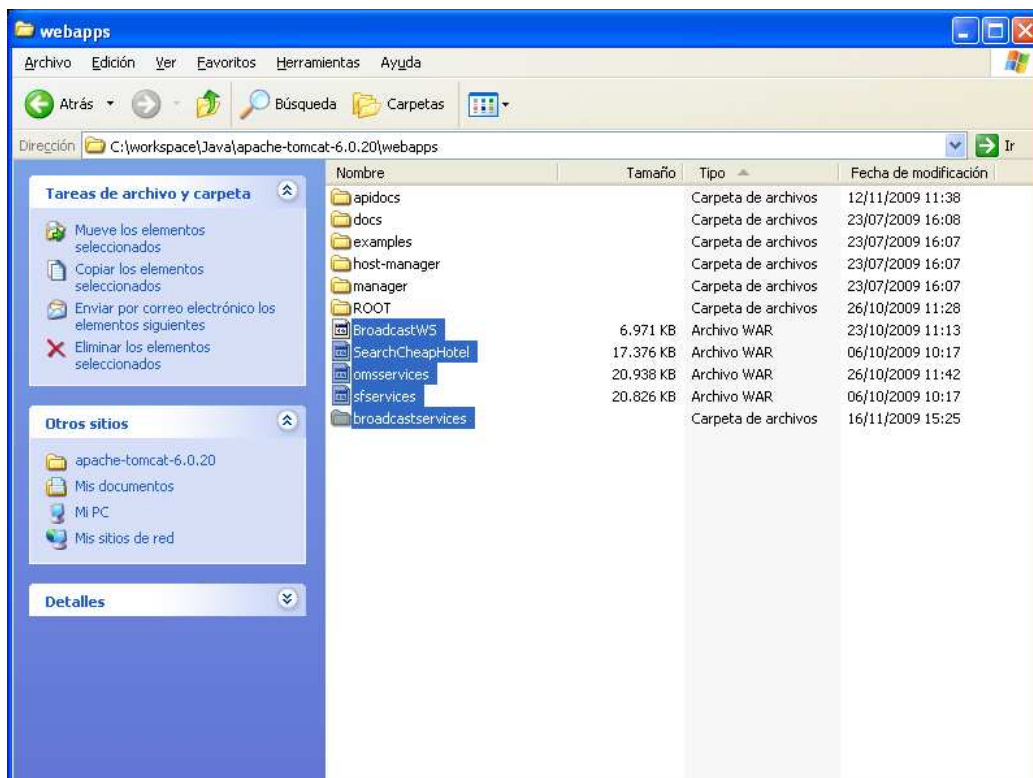
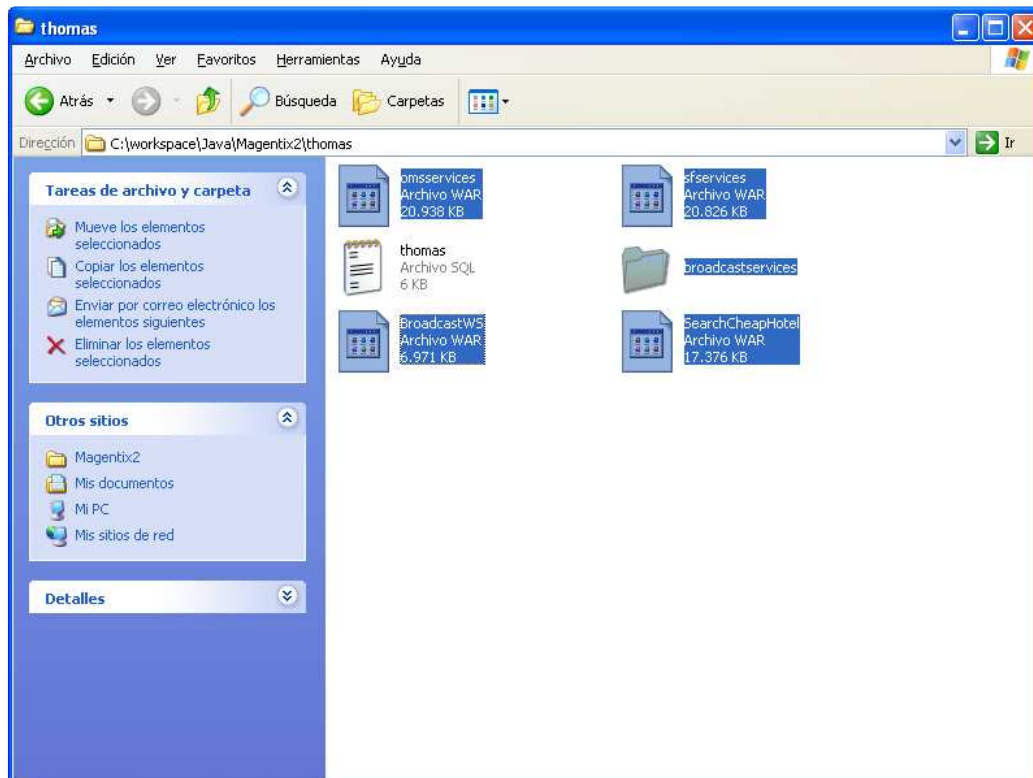
MySQL (recommended DDBB)

<http://www.mysql.com/>



Deploy Thomas in TOMCAT

Copy packaged libraries of Thomas (*omsservices.war*, *sfservices.war*) and also the Thomas examples (*SearchCheapHotel.war*, *BroadcastWS.war* and the *broadcastservices* directory) from Magentix2 distribution to the subdirectory *webapps* of Tomcat:



Start Tomcat by running the *startup.bat* file on the */bin* subdirectory of Tomcat. You must have the JDK 1.6 installed before you can start Tomcat.

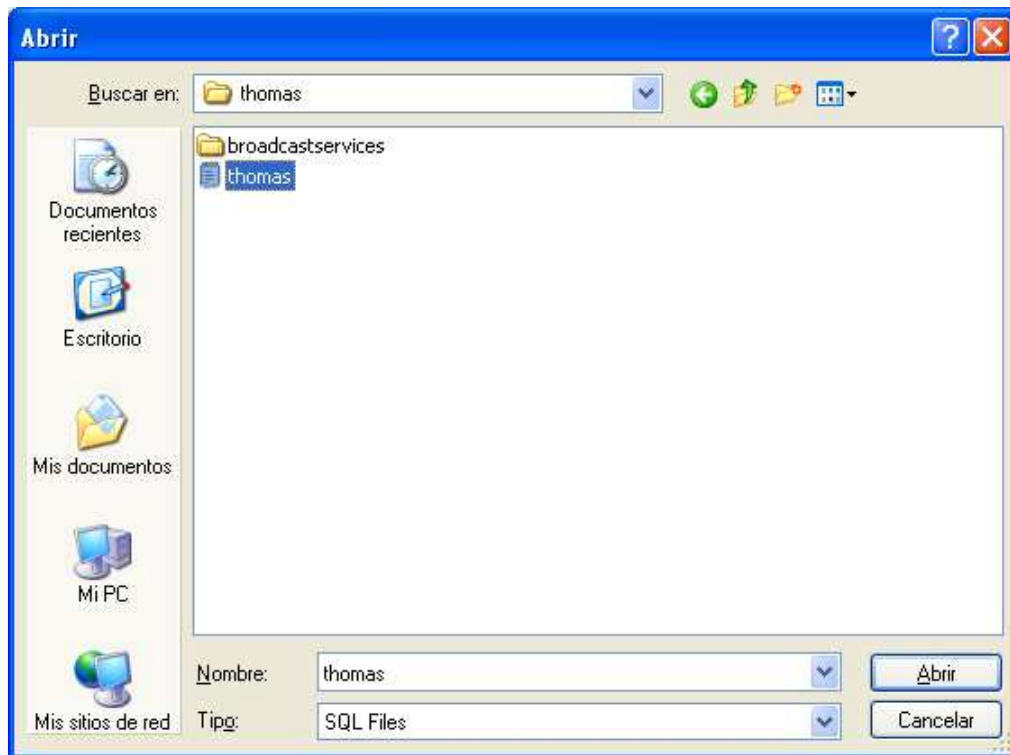
```
Simbolo del sistema
C:\workspace\Java\apache-tomcat-6.0.20\bin>startup.bat
Using CATALINA_BASE:   C:\workspace\Java\apache-tomcat-6.0.20
Using CATALINA_HOME:   C:\workspace\Java\apache-tomcat-6.0.20
Using CATALINA_TMPDIR: C:\workspace\Java\apache-tomcat-6.0.20\temp
Using JRE_HOME:        C:\workspace\Java\jdk1.6.0_14
C:\workspace\Java\apache-tomcat-6.0.20\bin>
```

```
Tomcat
16-nov-2009 16:35:58 org.apache.catalina.core.AprLifecycleListener init
INFO: La biblioteca nativa de Apache Tomcat basada en ARP que permite un rendimiento
INFO: óptimo en entornos de desarrollo no ha sido hallada en java.library.path: C
:\workspace\Java\jdk1.6.0_14\bin;.;C:\WINDOWS\Sun\Java\bin;C:\WINDOWS\system32;C
:\WINDOWS;C:\WINDOWS\system32;C:\WINDOWS;C:\WINDOWS\System32\Wbem;C:\workspace\J
ava\jdk1.6.0_14\bin;C:\workspace\maven\bin;%PYTHON%;C:\Archivos de programa\Tort
oise\SUN\bin;C:\KAPPA
16-nov-2009 16:35:58 org.apache.coyote.http11.Http11Protocol init
INFO: Inicializando Coyote HTTP/1.1 en puerto http-8080
16-nov-2009 16:35:58 org.apache.catalina.startup.Catalina load
INFO: Initialization processed in 271 ms
16-nov-2009 16:35:58 org.apache.catalina.core.StandardService start
INFO: Arrancando servicio Catalina
16-nov-2009 16:35:58 org.apache.catalina.core.StandardEngine start
INFO: Starting Servlet Engine: Apache Tomcat/6.0.20
16-nov-2009 16:35:58 org.apache.catalina.startup.HostConfig deployWAR
INFO: Despliegue del archivo BroadcastWS.war de la aplicación web
16-nov-2009 16:36:00 org.apache.catalina.startup.HostConfig deployWAR
INFO: Despliegue del archivo onsservices.war de la aplicación web
16-nov-2009 16:36:04 org.apache.catalina.startup.HostConfig deployWAR
INFO: Despliegue del archivo SearchCheapHotel.war de la aplicación web
16-nov-2009 16:36:06 org.apache.catalina.startup.HostConfig deployWAR
INFO: Despliegue del archivo sfservices.war de la aplicación web
16-nov-2009 16:36:12 org.apache.coyote.http11.Http11Protocol start
INFO: Arrancando Coyote HTTP/1.1 en puerto http-8080
16-nov-2009 16:36:12 org.apache.jk.common.ChannelSocket init
INFO: JK: ajp13 listening on /0.0.0.0:8009
16-nov-2009 16:36:12 org.apache.jk.server.JkMain start
INFO: Jk running ID=0 time=0/16 config=null
16-nov-2009 16:36:12 org.apache.catalina.startup.Catalina start
INFO: Server startup in 14172 ms
```

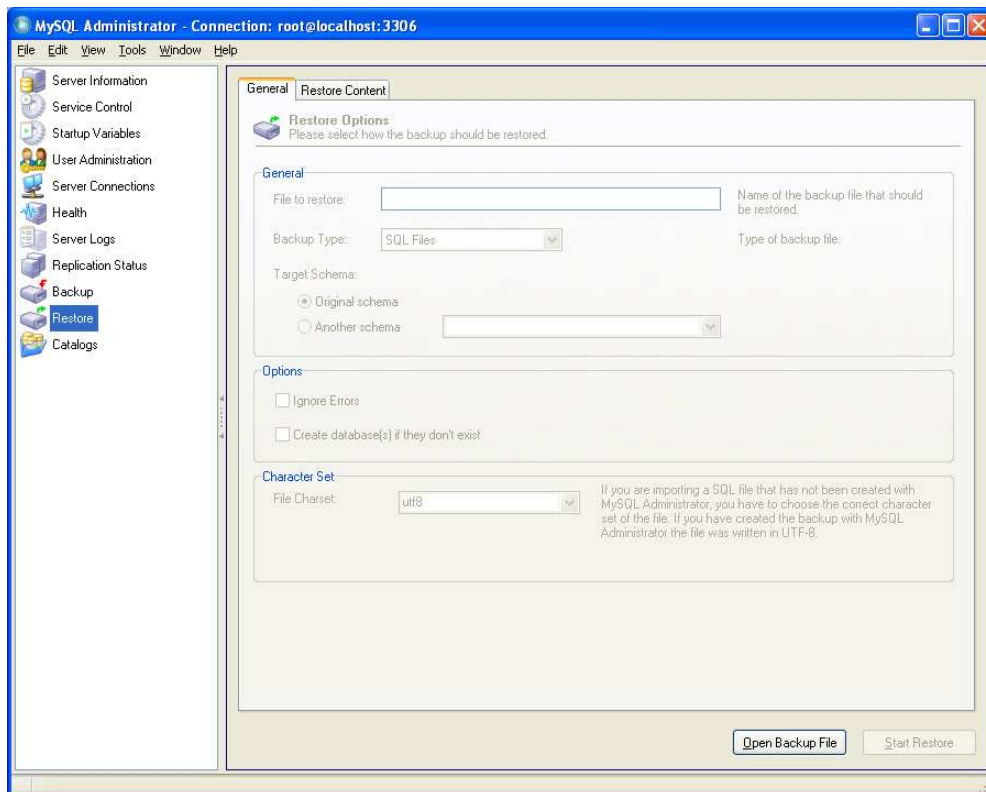


Install Thomas DDBB in MySQL

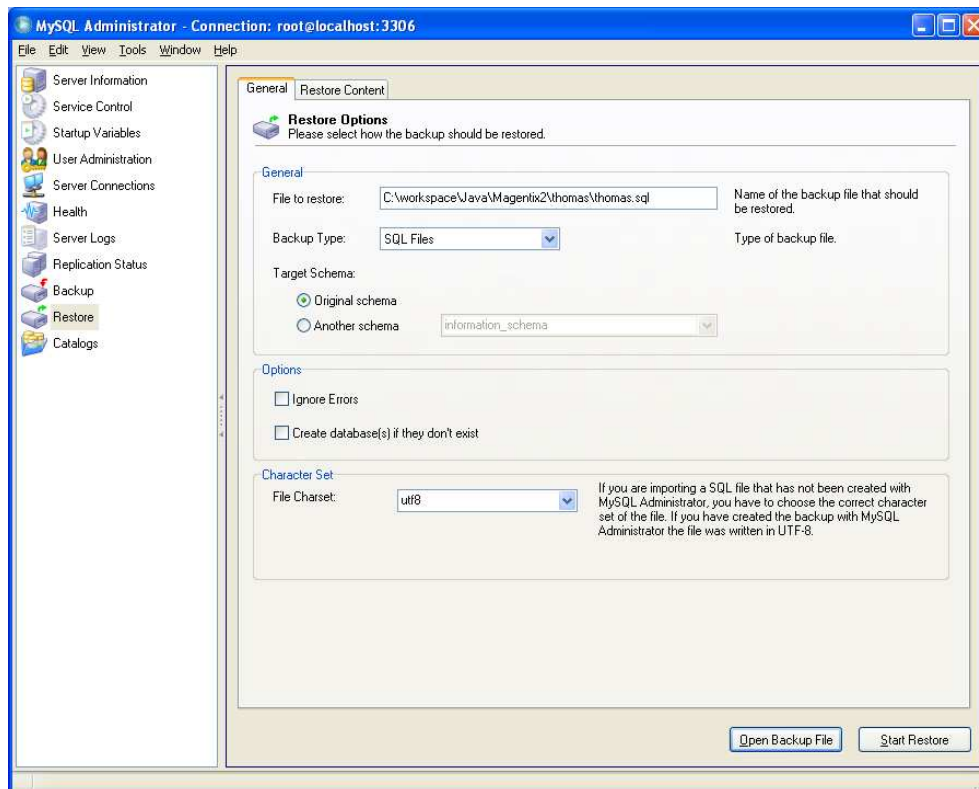
“Thomas.sql” file allow restore Thomas Data Base in MySQL:



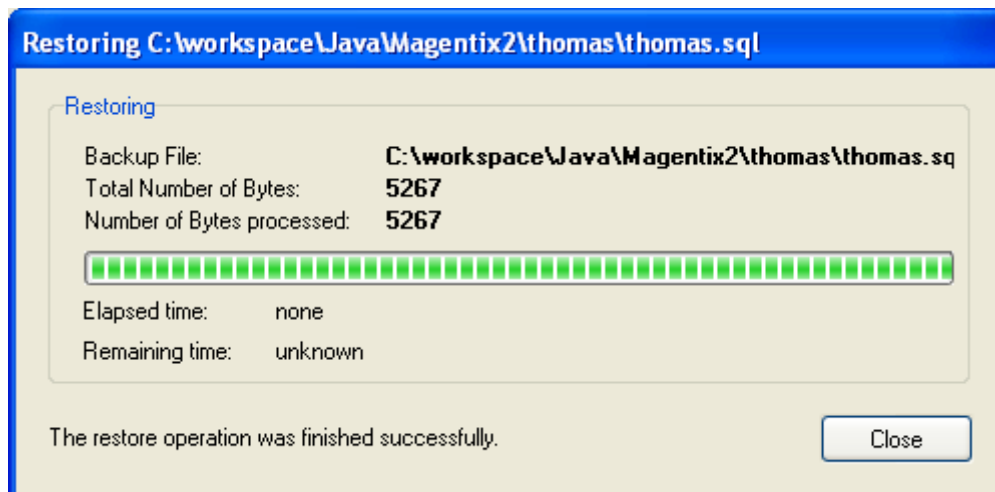
Open the MySQL Administrator and select *restore* option:



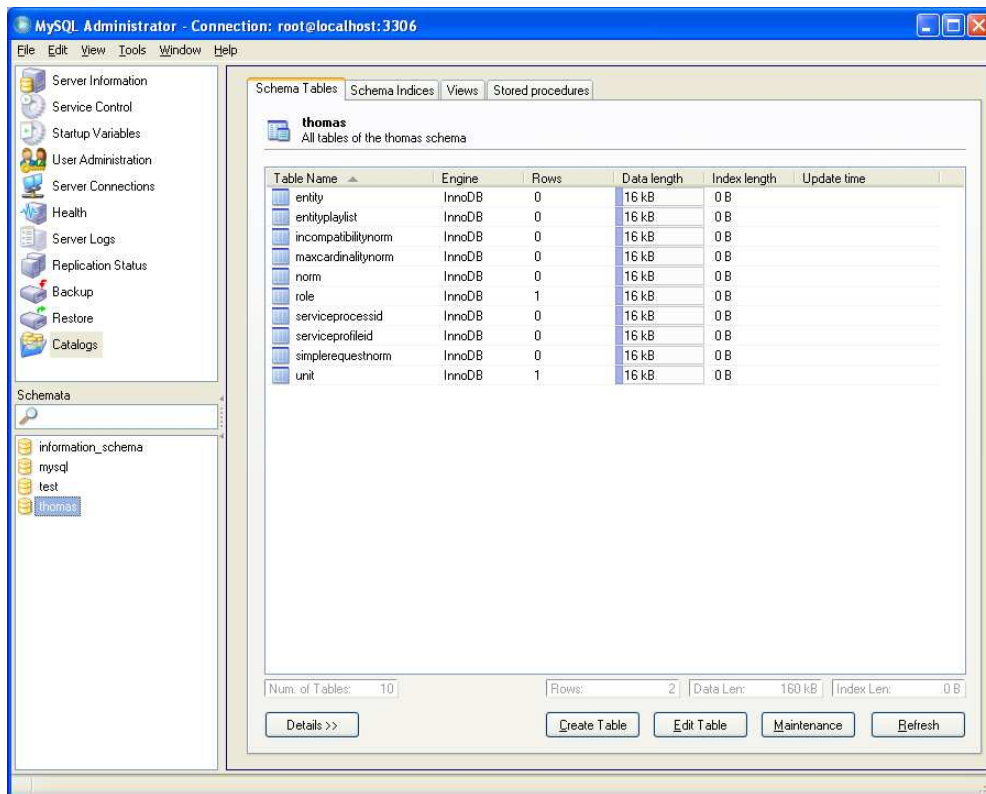
Select *Thomas.sql* file:



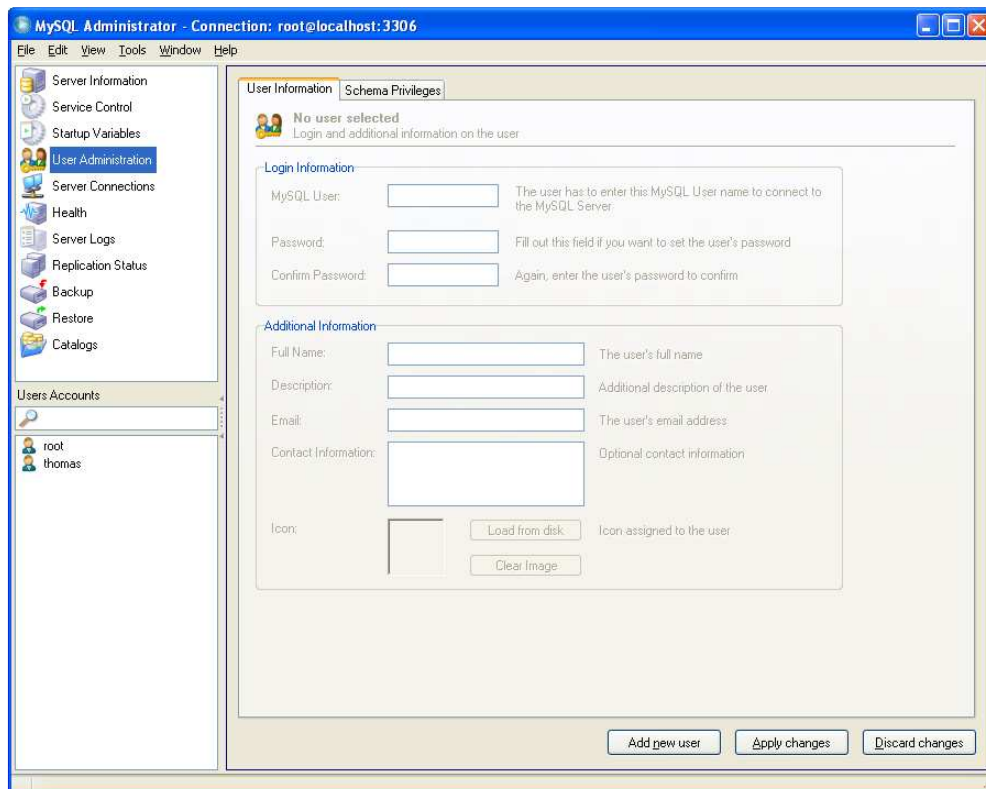
Init restore process:



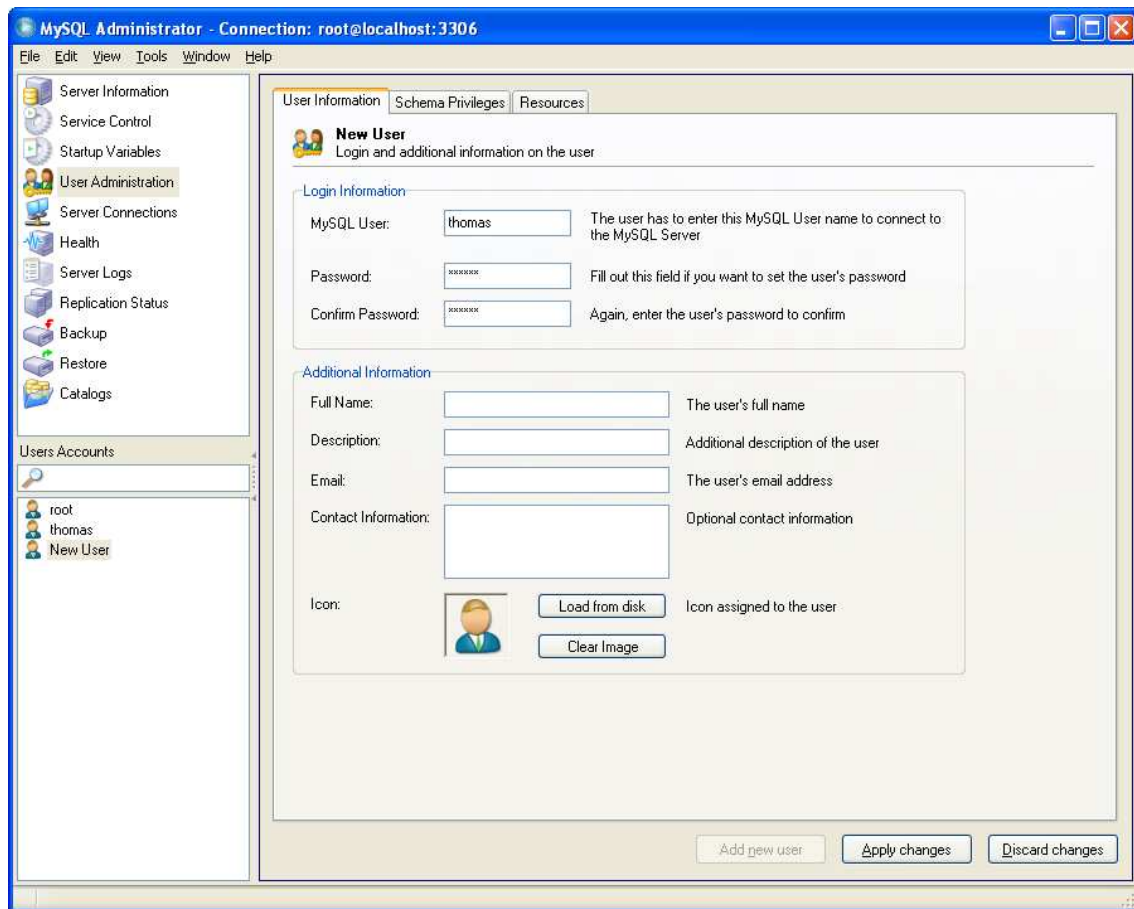
Now Thomas DDBB could be installed in MySQL



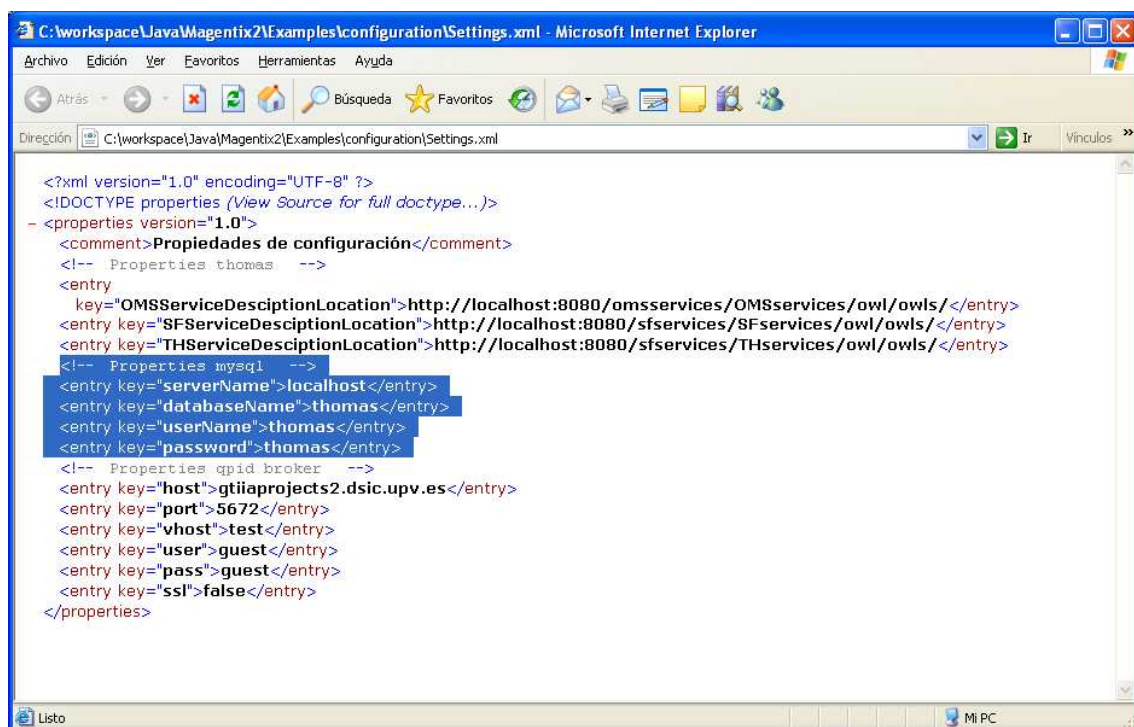
Add a new user to Thomas Schema:



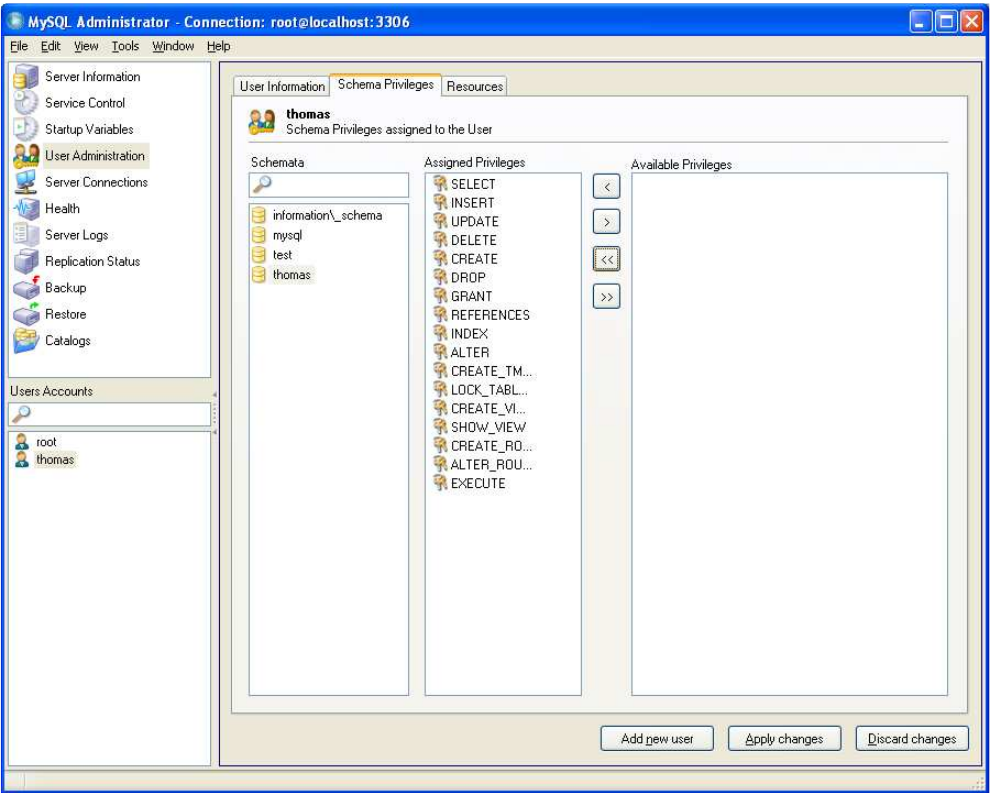
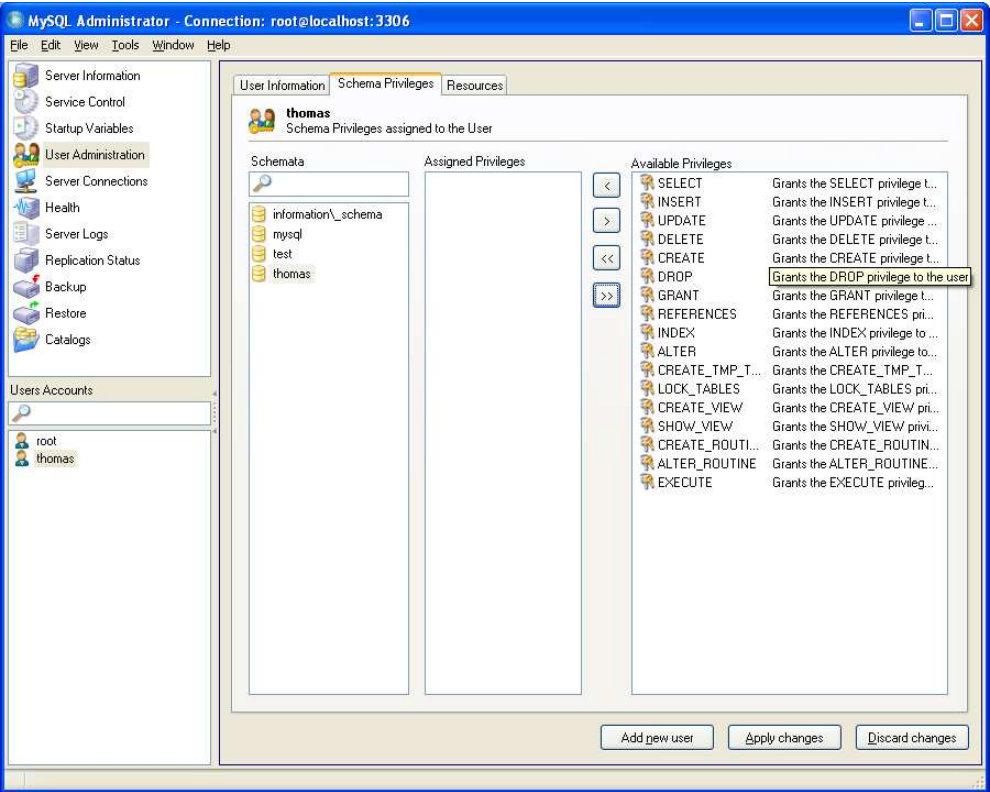
For example we add the user="thomas" with password= "thomas"



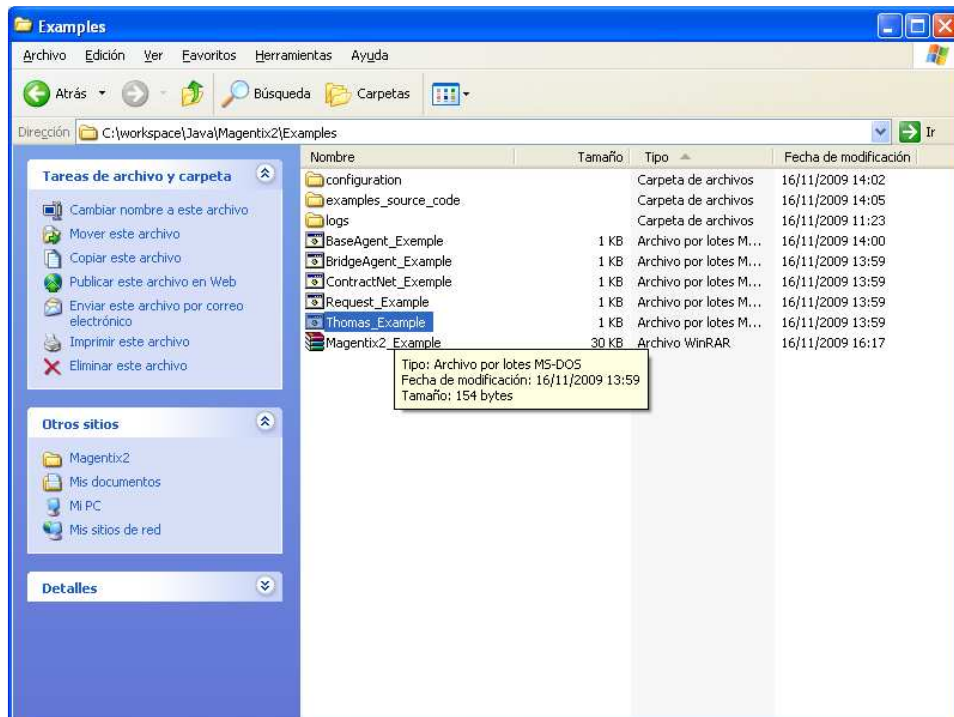
Also these values must be configured on the *settings.xml* file of Magentix2:



Finally available privileges for all tables of Thomas must be assigned to this user:



Run Thomas Example



```
C:\WINDOWS\system32\cmd.exe

C:\workspace\Java\Magentix2\Examples>set CLASSPATH=;../magentix2-1.0-jar-with-de
pendencies.jar;;Magentix2_Example.jar;

C:\workspace\Java\Magentix2\Examples>java Thomas_Example.Run
[BroadcastAgent]Acquire Role result: Ok

[ClientAgent]Acquire Role member return: Ok

[BroadcastAgent]Register Unit result: Ok

[ClientAgent]Acquire Role customer return: Ok

[BroadcastAgent]Register Role result: Ok

[BroadcastAgent] conencted with rol customer: Ok
[BroadcastAgent]The operation getProfile return: 30

[BroadcastAgent]The operation getProcess return: 30@30-qpid://BroadcastAgent@loc
alhost:8080

[BroadcastAgent]Agents who has the broadcast service: BroadcastAgent

[BroadcastAgent]Register Profile return: 31

[BroadcastAgent]Register Porcess return: 31@31-qpid://BroadcastAgent@localhost:8
080

[ClientAgent]agents that offered SearchCheapHotel service: 1

[ClientAgent] agents who have the service SearchCheapHotel: BroadcastAgent

[ClientAgent]get Profile return: http://localhost:8080/sfservices/THservices/owl
/owls/SearchCheapHotelProfile.owl

[Provider]Doc OWL-S: http://localhost:8080/sfservices/THservices/owl/owls/Search
CheapHotelProcess.owl
AGREE
[Provider]Sending First message:es.upv.dsic.gti_ia.core.ACLMessage@10e4fd7
[Provider]Doc OWL-S: http://localhost:8080/sfservices/THservices/owl/owls/Search
CheapHotelProcess.owl
[Provider]Executing... [SecondParam, ThirdParam, FirstParam]
[Provider]Values obtained... :{http://localhost:8080/sfservices/THservices/owl/o
wls/SearchCheapHotelProcess.owl#SearchCheapHotelOutputHotel=Hotel Puerta de Vale
ncia, http://localhost:8080/sfservices/THservices/owl/owls/SearchCheapHotelProce
ss.owl#SearchCheapHotelOutputHotelCompany=NH}
[Provider]Creating inform message to send...
[Provider]Before set message content...
```

