

HowTo: Installing an RDF database server using Joseki 2 and D2R MAP 0.2

Joseki is a server for publishing RDF models on the web. (See: <http://www.joseki.org/>). By using Joseki and D2R MAP together, a RDF server which answers RDQL queries about the RDF representation of the contents of a relational database can be set up. The installation process has the following steps:

1. Install Joseki 2
2. Install D2R MAP 0.2.
3. Write a D2R MAP to describe the mapping between your specific relational database model and RDF.
4. Include the D2R connector and the D2R MAP in the Joseki configuration file.
5. Start the server

On start-up, the Joseki server calls the D2R MAP processor, which creates a RDF model from the contents of the database. This model is held in the server main memory and can be queried using the different Joseki query languages.

This document describes the installation of the Joseki server together with D2R MAP using an example database with some information about researchers and their publications.

Requirements

JAVA 1.4 or higher

Download from: <http://java.sun.com>

JOSEKI RDF 2.0 or higher

Download from: <http://www.joseki.org/downloads.html>

D2R-MAP 0.2

Download from: <http://sourceforge.net/projects/d2r-map/>

Step 1: Check your JAVA Environment

1. Open a command-line and type "java -version".
2. Java runtime version 1.4 or later is required.

Step 2: Installing JOSEKI RDF Server

1. Download the server from <http://www.joseki.org/downloads.html>
2. Extract the joseki zip file to your hard disk (for example: c:\Joseki-2.0.0).
3. Set the Joseki home directory. (Windows users open a command prompt and type: "SET JOSEKIROOT= c:\Joseki-2.0.0")

Step 3: Installing D2R MAP 0.2

1. Download the D2R-MAP 0.2 from <http://sourceforge.net/projects/d2r-map/>
2. Extract the zip file to a temporary directory (for example: "c:\d2r-map").

3. Copy the d2r-map-02.jar file from the c:\d2r-map\lib directory to the c:\Joseki-2.0.0\lib directory.

Step 4: Creating an example database

1. Create a new database on your preferred database server or use an example database from the D2R MAP distribution or website. We are using the ISWC example MS Access database in the following instructions.
2. If you are using ODBC to connect to the database, register a ODBC System-DSN called "IswcDB" pointing to the example database. If you are not using ODBC, change "iswcMap.d2r.xml" in order to connect to your database. See D2R MAP language specification section 2.2.1 for details (http://www.wiwiss.fu-berlin.de/suhl/bizer/d2rmap/D2R_language%20specification.pdf)

Step 5: Including D2R MAP in the JOSEKI configuration file

1. In order to include the D2R MAP source controller into Joseki, add the following lines to the c:\Joseki-2.0.0\etc\joseki-defs.n3 configuration file:

```
@prefix d2r: <http://www.wiwiss.fu-berlin.de/suhl/bizer/D2RMap/0.1#>
.
d2r:SourceControllerD2R
  a joseki:SourceController ;
  module:interface    joseki:SourceController ;
  module:implementation
    [ module:className
      "de.fuberlin.wiwiss.d2r.SourceControllerD2R" ] ;
  rdfs:comment "The standard SourceController for D2R-MAP-backed
models" .
```

2. In order to define a Joseki attachedmodel using the source controller, your database and an D2R MAP, add the following lines to the c:\Joseki-2.0.0\etc\joseki.n3 configuration file:

```
@prefix d2r: <http://www.wiwiss.fu-berlin.de/suhl/bizer/D2RMap/0.1#>
.
<http://server/conference>
  a joseki:AttachedModel ;
  joseki:attachedModel    <d2r:conference> ;
  joseki:sourceController  d2r:SourceControllerD2R ;
  d2r:map                  "C:/D2RMAP/maps/iswcMap.d2r.xml" ;
  joseki:hasQueryOperation joseki:BindingFetchClosure ;
  joseki:hasQueryOperation joseki:BindingRDQL ;
  joseki:hasQueryOperation joseki:BindingSPO ;
  joseki:hasQueryOperation joseki:BindingGET ;
  rdfs:comment "A collection of papers and autors details" ;
.
```

3. Start JOSEKI by changing into the Joseki directory and typing bin\rdfserver. The iswc-Model is now loaded on startup and can be queried using RDQL (See JOSEKI documentation for details).