Naming Convention Tool - Development Environment Setup Instructions

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1.0	Initial version	2014-01-07
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TABLE OF CONTENTS

LIST OF TABLES

No table of figures entries found.

LIST OF FIGURES

1.   DEVELOPMENT ENVIRONMENT

Default development platform for Naming Tool is Scientific Linux 6.3 and CODAC 4.1. This installation provides PostgreSQL database and correct version of Java. Instructions how to set up a virtual machine with correct version of Scientific Linux and CODAC can be found on ICS wiki [1].

Other development platforms can also be used but this document is written to set up development environment on aforementioned platform.

2.   ENVIRONMENT PREPARATION

Execute the following command to install all needed software:

```
sudo yum install git firefox file-roller gedit
```

3.   JAVA ENVIRONMENT

3.1   JRE

Java 7 should be selected as default java. Check this with the following command in terminal:

```
sudo alternatives --config java
```

Java 7 should be selected as default. If it is not, please select it.

4.   CHECK OUT THE APPLICATION

To check out the application using Git, please move to suitable directory in which the application will be checked out (hereinafter referred as **project_home**) and execute the following in terminal:

```
git clone https://your_user_name@bitbucket.org/ess_ics/naming-convention-tool.git
```

Please substitute "your_user_name" with your user account on Bitbucket.

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5. JBOSS INSTALLATION AND CONFIGURATION

5.1 Installation

To install JBoss application server pleas follow instructions on ICS wiki [2]. After downloading **jboss-as-7.1.1.Final.zip** create new directory and extract downloaded file to it by executing the following set of commands:

```
cd ~
mkdir opt
unzip ~/Downloads/jboss-as-7.1.1.Final.zip -d ~/opt
```

Then download the ess-jboss-config.tar.gz from Plone. Link is in [2]. Extract is using the following command:

```
tar xvfz ~/Downloads/ess-jboss-config.tar.gz -C ~/opt/jboss-as-7.1.1.Final
```

5.2 Security Domain Configuration

Open `~/opt/jboss-as-7.1.1.Final/standalone/configuration/standalone.xml` file with your preferred text editor. Under

```
<server>
  <profile>
    <subsystem xmlns="urn:jboss:domain:security:1.1">
      <security-domains>
```

section, add the following security domain:

```
<security-domain name="names.security-domain" cache-type="default">
            <authentication>
                <login-module code="RealmUsersRoles" flag="required">
                    <module-option name="usersProperties"
value="${jboss.server.config.dir}/names-users.properties"/>
                    <module-option name="rolesProperties"
value="${jboss.server.config.dir}/names-roles.properties"/>
                    <module-option name="realm" value="org.openepics.names.realm"/>
                    <module-option name="password-stacking" value="useFirstPass"/>
                </login-module>
            </authentication>
        </security-domain>
```

In `~/opt/jboss-as-7.1.1.Final/standalone/configuration/` directory create two new files:

```
touch names-users.properties names-roles.properties
```

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which will hold <username, password> and <username, role> pairs.

5.3   Application user configuration

User authentication is handled on JBoss application server. Therefore we must add all the users we want to have in the application to the application server and assign them roles. To this a small script has been created to minimize the effort put into creating new users and their passwords.

Move to appropriate directory and clonel a project from Git with which you will be able to generate passwords for users:

```
git clone https://your_user_name@bitbucket.org/ess_ics/jboss-password-tool.git
```

Please substitute "your_user_name" with your user account on Bitbucket.

Move to newly created directory and execute:

```
mvn package –O -Dpublic
```

project will be built.

We will create two <username, password> pairs. One user will be later on assigned role of Naming Administrator and other role of Naming Editor.

To generate new username, password pair where username is "nameseditor" and password is also "nameseditor" execute the following:

```
./run nameseditor org.openepics.names.realm
```

when prompt for password enter "nameseditor" and then enter this again for confirmation.

<username, password> pair will be generated and it should look **exactly** like this:

```
nameseditor=d8519be29cbe13ac4d7d6b0b9706a3fd
```

Do the same for user "namesadmin" with password "namesadmin". Generated <username, password> pair should look **exactly** like this:

```
namesadmin=0c29fb8b288ea8c86b60ae3f52d4a5da
```

Copy those two generated pairs to <jboss_home>/standalone/configuration/names-users.properties file. When finished content of file should look **exactly** like that:

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```
nameseditor=d8519be29cbe13ac4d7d6b0b9706a3fd
namesadmin=0c29fb8b288ea8c86b60ae3f52d4a5da
```

Now we have usernames and passwords and we have to set realm roles for those users. These roles are not used for authorization of actions in the applications. Those roles will be set further on. To set the roles modify contents of `<jboss_home>/standalone/configuration/names-roles.properties` file to look **exactly** like this:

```
nameseditor=USER
namesadmin=USER
```

6.   POSTGRESQL DATABASE PREPARATION

6.1   Start PostgreSQL database server

Execute the following in the console:

```
service postgresql-9.2 status
```

If you receive message "`(pid xxxx) is running…`" then server is up and running and is ready to be used. On the other hand, if you receive message "`is stopped`" then server is not running and you have to start it, executing the following command:

```
sudo service postgresql-9.2 start
```

6.2   Create new database and database user

Log in to your PostgreSQL server with the following command:

```
sudo –u postgres psql
```

You should now be in psql console. You should see something like this:

```
psql (9.2.4)
Type "help" for help

postgres=#
```

Create new database using the following command:

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```
CREATE DATABASE discs_names;
```

Crete new user and assign him all privileges for previously created database.

```
CREATE USER discs_names WITH PASSWORD 'discs_names';
GRANT ALL PRIVILEGES ON DATABASE discs_names TO discs_names;
```

Database is now ready to be populated with tables and data. Leave psql console by executing:

```
\q
```

7.   DEPLOYMENT OF THE APPLICATION

Move to <project_home> and execute:

```
mvn package –O -Dpublic
```

Application should build and package without any errors.

Start JBoss server by executing the following command:

```
sh <jboss_home>/bin/standalone.sh
```

Open JBoss administration console on http://localhost:9990. Log in with User name: admin and password: th3b0ss.

Click on "Manage Deployments":

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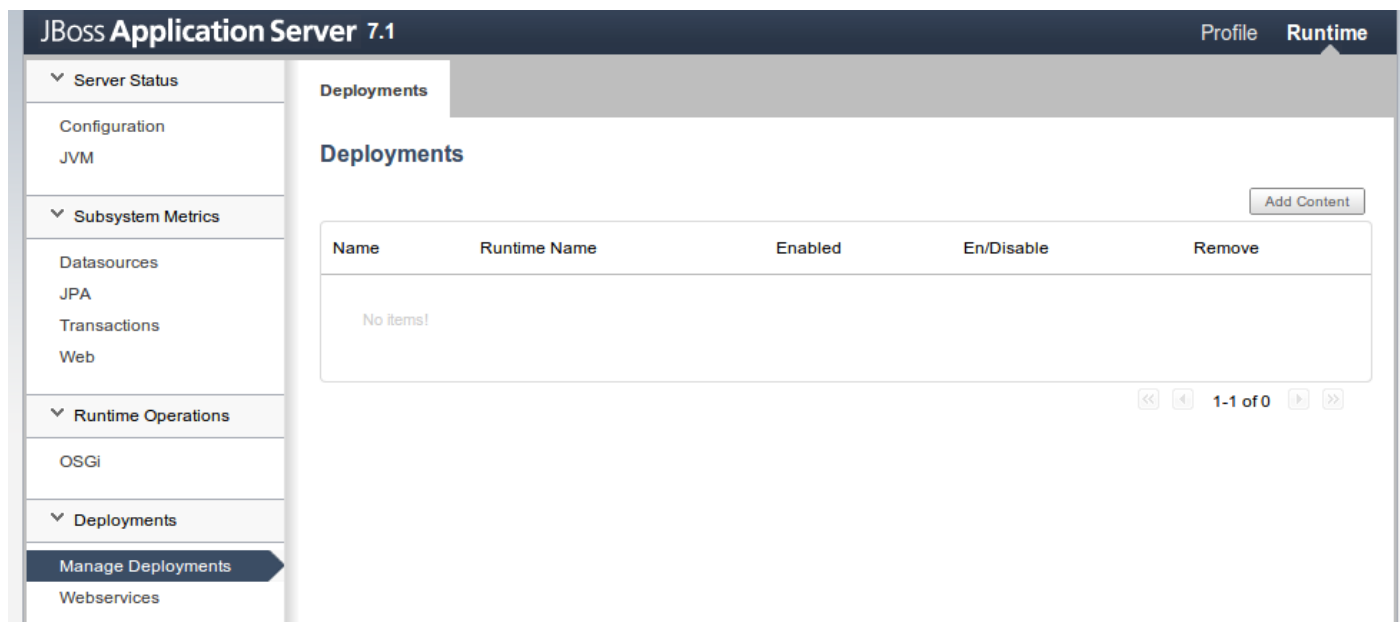
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Figure 1: Add deployment content

and then click "Add Content". Window pops up. Browse to <project_home>/target/names-3.0.0.war. Click "Next" and then "Save".

Application is now added but not yet deployed. To deploy it click "Enable" next to the application name:

Figure 2: Enabling application

Click "Confirm" when prompted. Since there is quite some data to put into database on deployment, this might take a while.

When popup closes there should be a green notification on top. After that you can access application on http://localhost:8080/names.

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8.   ADD USERS TO APPLICATION

Previously we created users and passwords that JBoss uses to authenticate each user. In order for those users to be also recognized by the application we have to add them to application database and assign them application roles. To do this, execute the following set of commands:

```
sudo –u postgres psql –d discs_names
```

to connect to "discs_names" database. When connected:

```
INSERT INTO useraccount (version,role,username) VALUES (0,'SUPERUSER','namesadmin');
INSERT INTO useraccount (version,role,username) VALUES (0,'EDITOR','nameseditor');
```

and

```
\q
```

to exit the psql console.

Now you can go to http://localhost:8080/names and login with both of these users.

9.   REFERENCES

[1] Preparing a virtual machine (https://twiki.esss.dk/ad/index.php/Software:Preparing_a_virtual_machine)

[2] JBoss configuration
(https://twiki.esss.dk/ad/index.php/Configuration_Data_Management:JBoss_Configuration)