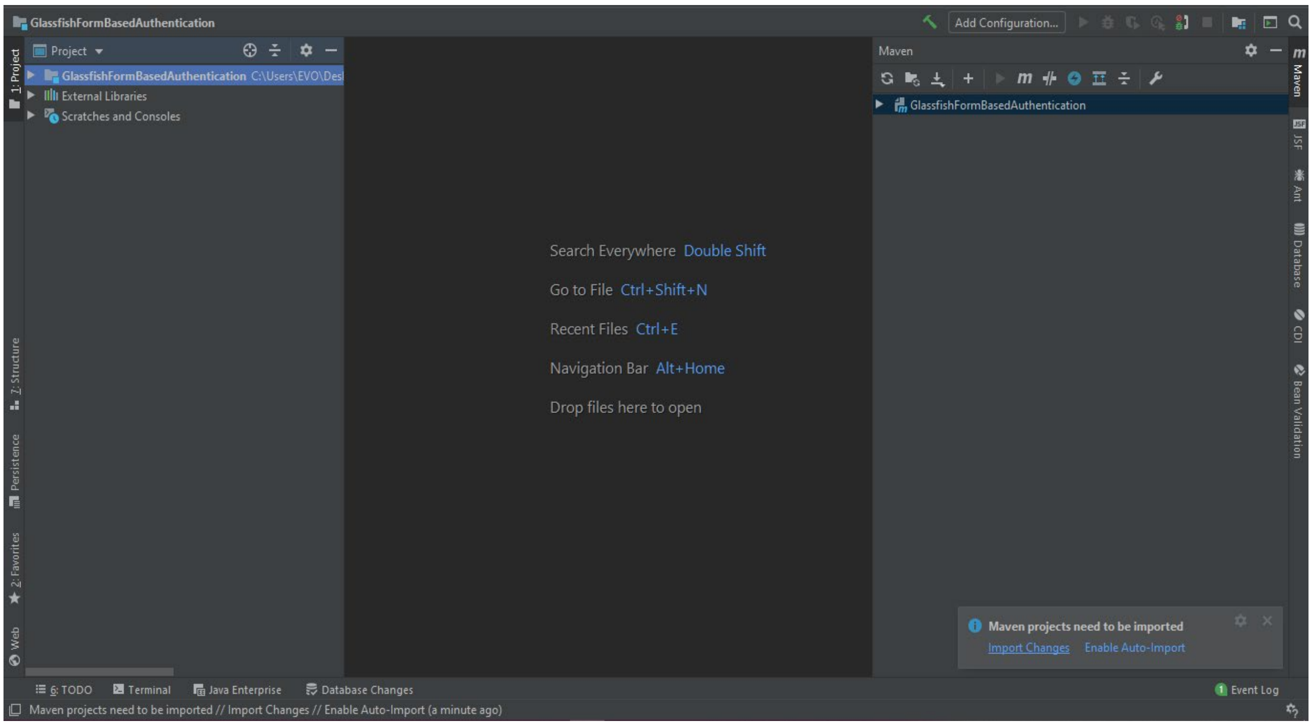
Guide for setup the configuration to run Realm Glassfish based authentication

1. Knowledge:

1) You must have some basic in Java EE and Java and Hibernate and Glassfish server, Intellj Idea.
2) You should have some idea about authentication and authorization in general.
3) Have an idea what is A security realm :
   is a mechanism used for protecting Web application resources. It gives you the ability to protect a resource with a defined security constraint and then define the user roles that can access the protected resource.
4) Take a look at tutorial: https://javatutorial.net/glassfish-form-based-authentication-example, which guide you to setup and create Glassfish Form Based Authentication Example and give you some best practices to how to create roles and assign user to those roles .

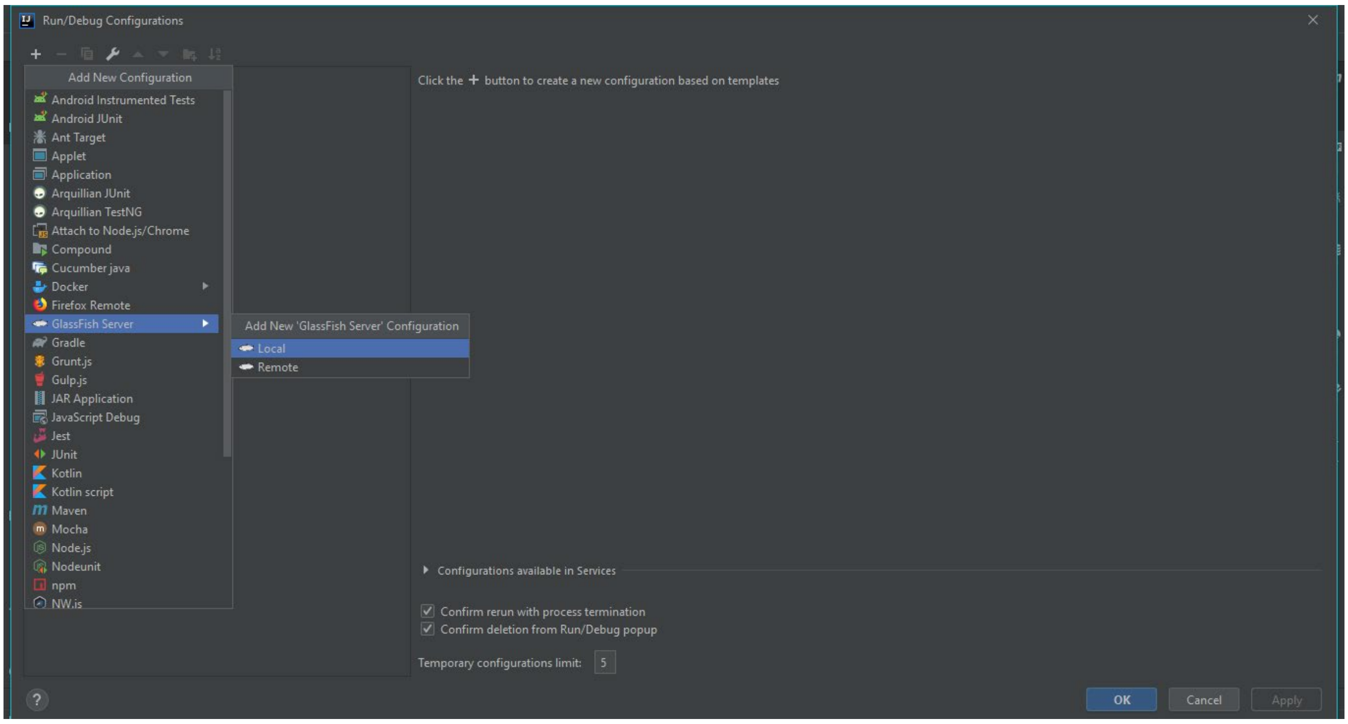
2. Practical steps:

1) Download payara or glassfish server from the following link :
   https://www.payara.fish
   https://javaee.github.io/glassfish/
   Then extract them to C:\Program Files .
2) In this example we'll work with glassfish.
3) Load the project:
4) Import Changes and Dpendancies in Maven



Maven projects need to be imported // Import Changes // Enable Auto-Import (a minute ago)

5) Configure Glassfish server

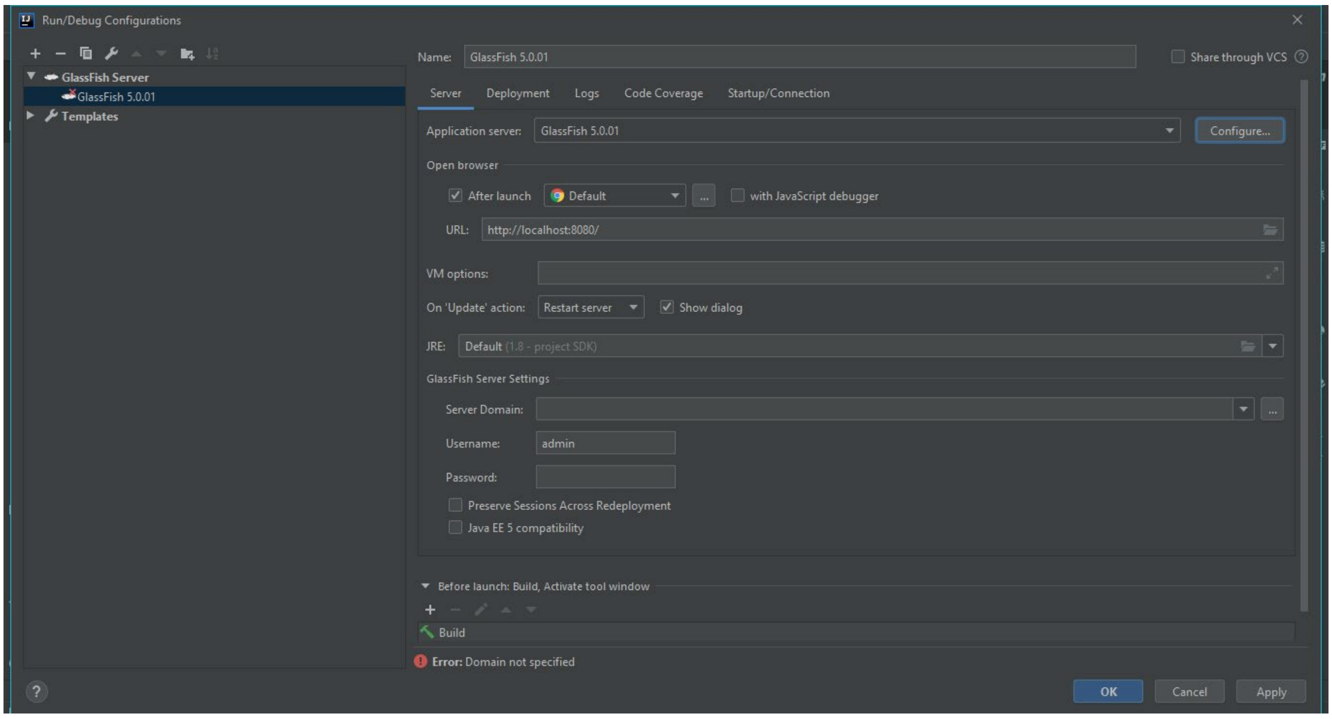


Click the + button to create a new configuration based on templates

☑ Confirm rerun with process termination
☑ Confirm deletion from Run/Debug popup

Temporary configurations limit: 5

6) Load from source: Configure…



Name: GlassFish 5.0.01 ☐ Share through VCS

Application server: GlassFish 5.0.01

Open browser

☑ After launch Default ☐ with JavaScript debugger

URL: http://localhost:8080/

VM options:

On 'Update' action: Restart server ☑ Show dialog

JRE: Default (1.8 - project SDK)

GlassFish Server Settings

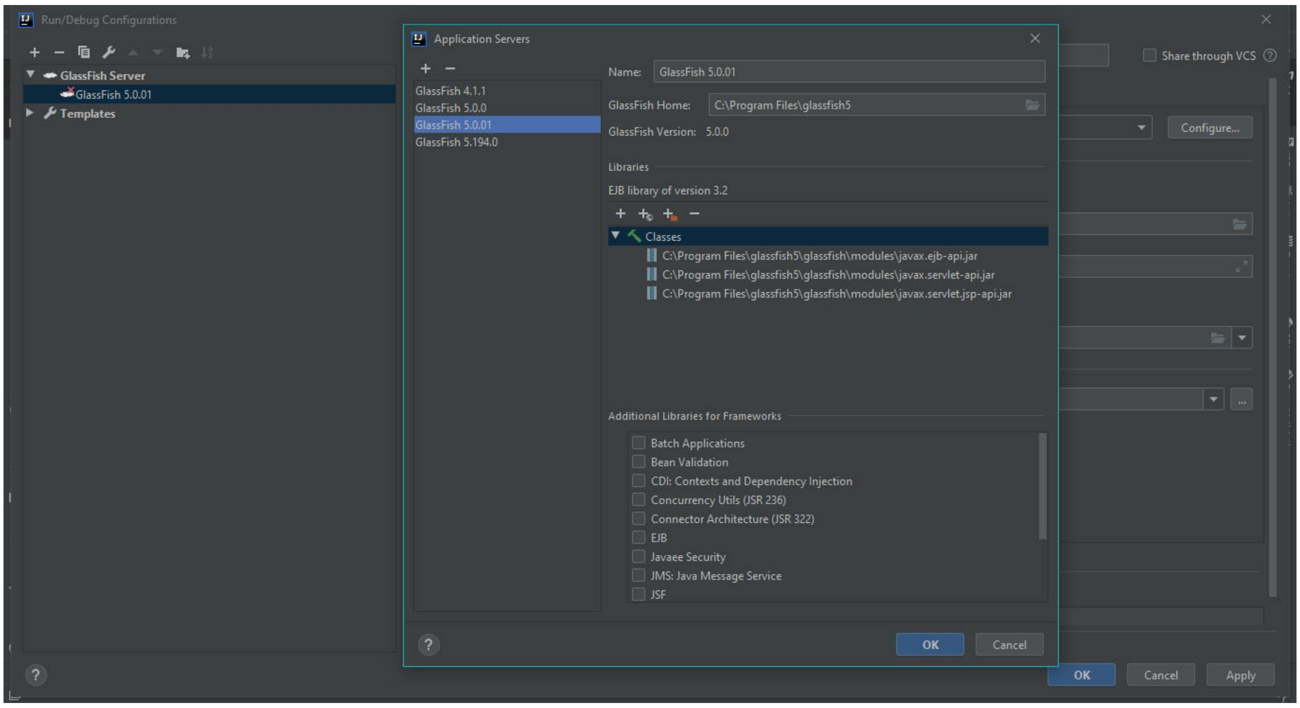
Server Domain:

Username: admin

Password:

☐ Preserve Sessions Across Redeployment
☐ Java EE 5 compatibility

Error: Domain not specified


Application Servers

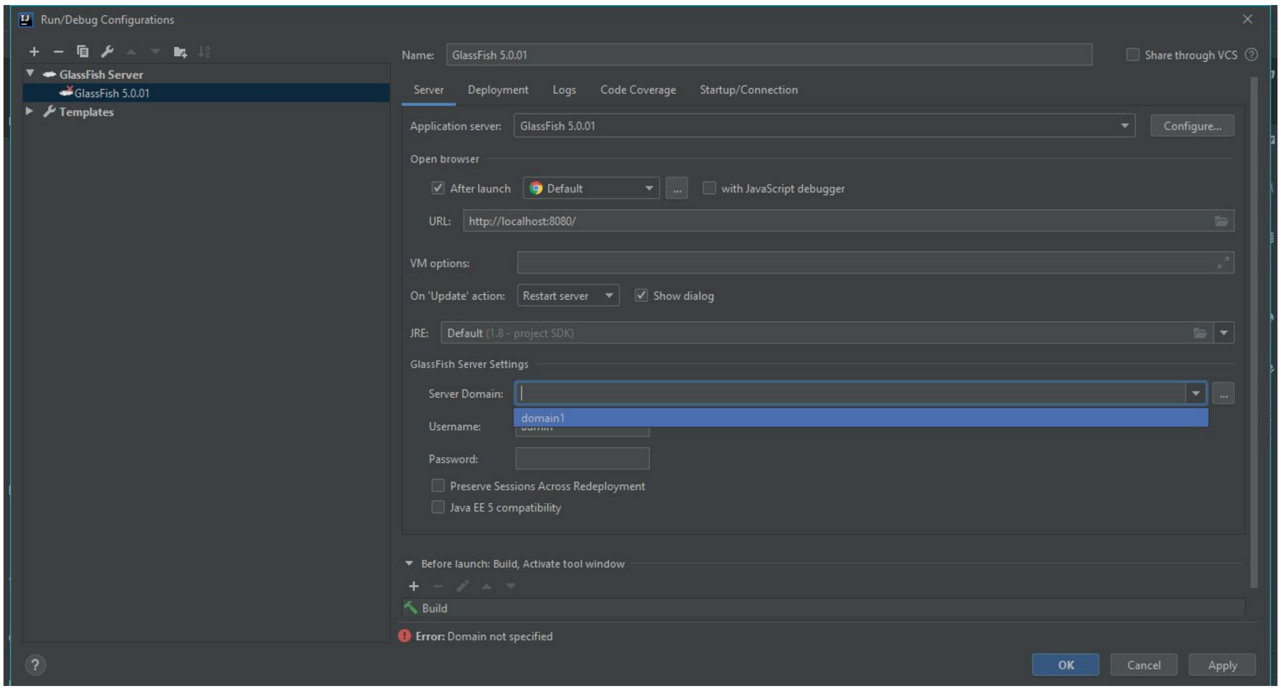
GlassFish 4.1.1
GlassFish 5.0.0
GlassFish 5.0.01
GlassFish 5.194.0

Name: GlassFish 5.0.01
GlassFish Home: C:\Program Files\glassfish5
GlassFish Version: 5.0.0

Libraries
EJB library of version 3.2
Classes
C:\Program Files\glassfish5\glassfish\modules\javax.ejb-api.jar
C:\Program Files\glassfish5\glassfish\modules\javax.servlet-api.jar
C:\Program Files\glassfish5\glassfish\modules\javax.servlet.jsp-api.jar

Additional Libraries for Frameworks
- [ ] Batch Applications
- [ ] Bean Validation
- [ ] CDI: Contexts and Dependency Injection
- [ ] Concurrency Utils (JSR 236)
- [ ] Connector Architecture (JSR 322)
- [ ] EJB
- [ ] Javaee Security
- [ ] JMS: Java Message Service
- [ ] JSF

7) Add domain


Run/Debug Configurations

Name: GlassFish 5.0.01

Server | Deployment | Logs | Code Coverage | Startup/Connection

Application server: GlassFish 5.0.01

Open browser
- [✓] After launch Default
- [ ] with JavaScript debugger

URL: http://localhost:8080/

VM options:

On 'Update' action: Restart server [✓] Show dialog

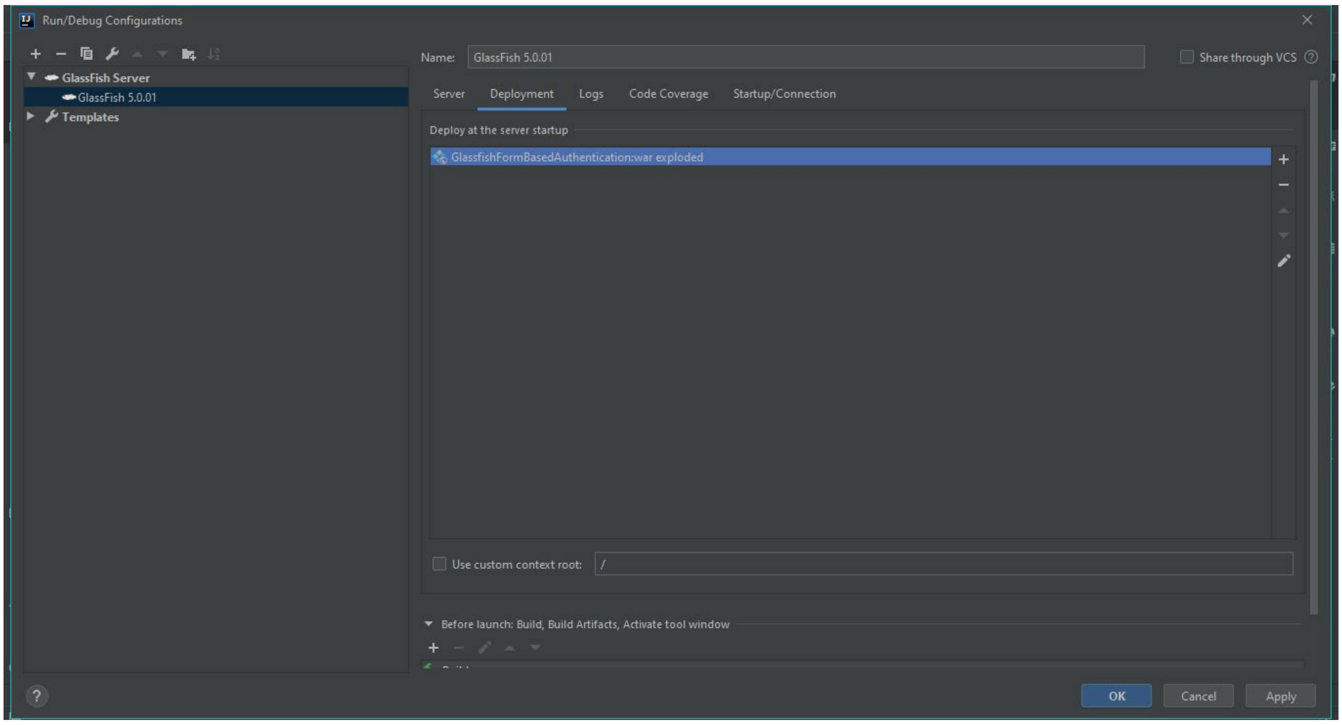
JRE: Default (1.8 - project SDK)

GlassFish Server Settings
Server Domain: domain1
Username:
Password:
- [ ] Preserve Sessions Across Redeployment
- [ ] Java EE 5 compatibility

Before launch: Build, Activate tool window
Build

Error: Domain not specified

8) Configure the deployment options then click OK



Name: GlassFish 5.0.01

Deploy at the server startup

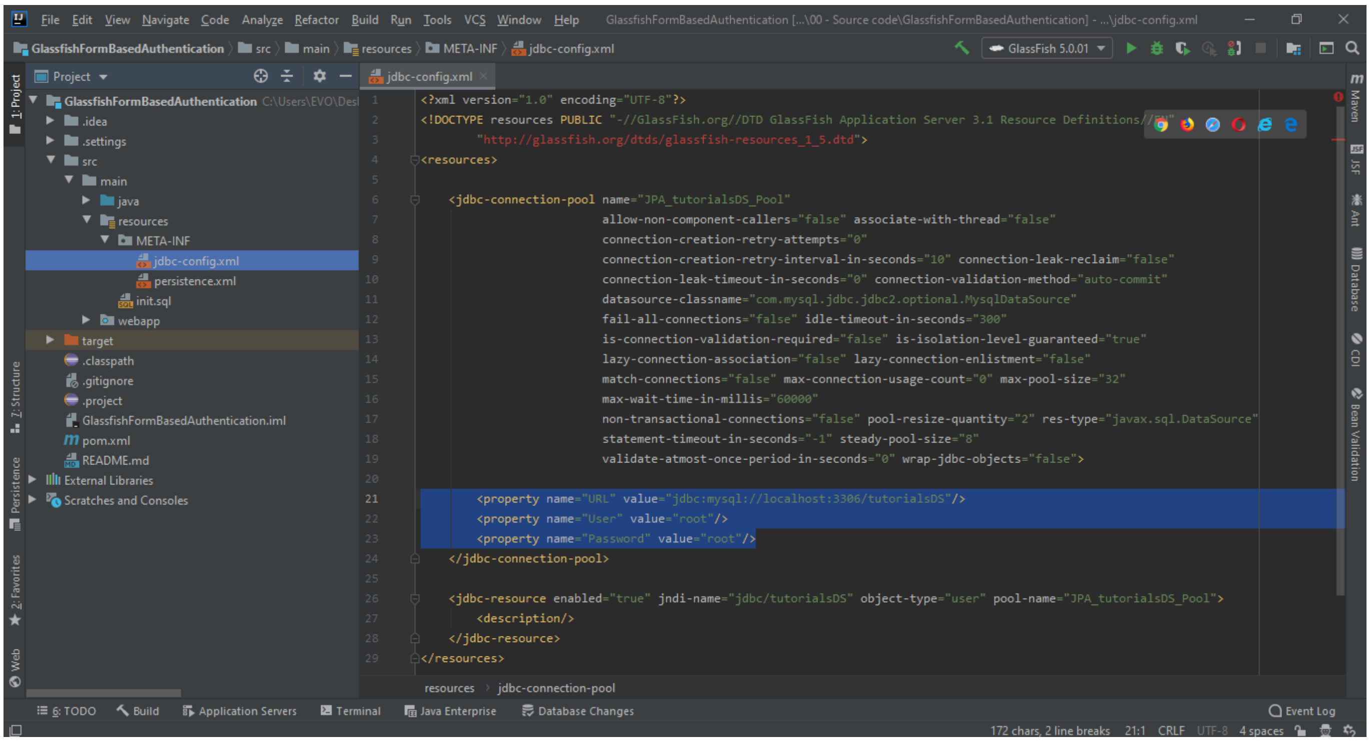
GlassfishFormBasedAuthentication:war exploded

Use custom context root: /

Before launch: Build, Build Artifacts, Activate tool window

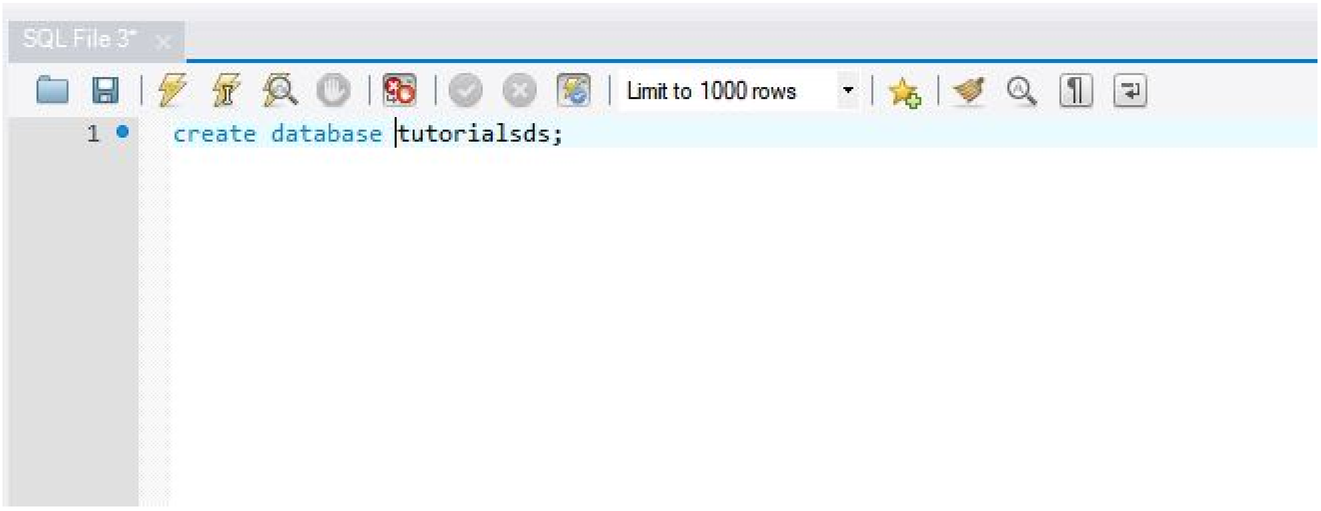
9) Now the step of configuration of database

10) First you must create a database in you SGBD as what is in jdbc-config.xml " META-INF/jdbc-config.xml " , in our example we use Mysql as SGBD ,and we use Hibernate as ORM framework and implementation for the JPA specification.



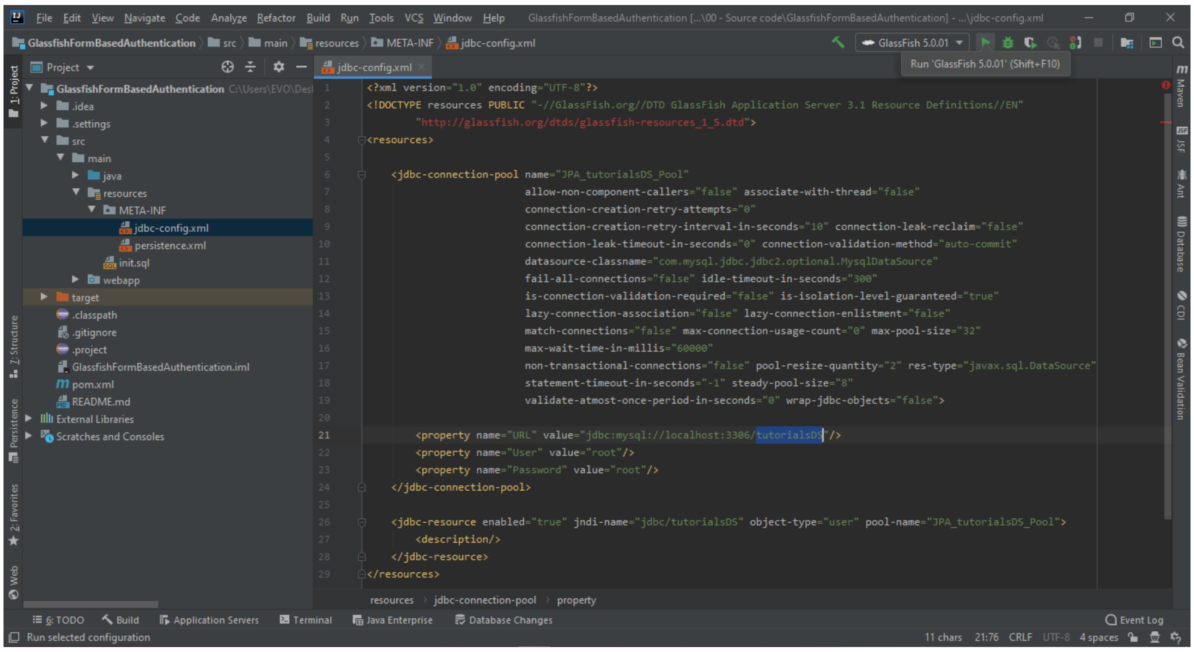
```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE resources PUBLIC "-//GlassFish.org//DTD GlassFish Application Server 3.1 Resource Definitions//EN"
        "http://glassfish.org/dtds/glassfish-resources_1_5.dtd">
<resources>

    <jdbc-connection-pool name="JPA_tutorialsDS_Pool"
                          allow-non-component-callers="false" associate-with-thread="false"
                          connection-creation-retry-attempts="0"
                          connection-creation-retry-interval-in-seconds="10" connection-leak-reclaim="false"
                          connection-leak-timeout-in-seconds="0" connection-validation-method="auto-commit"
                          datasource-classname="com.mysql.jdbc.jdbc2.optional.MysqlDataSource"
                          fail-all-connections="false" idle-timeout-in-seconds="300"
                          is-connection-validation-required="false" is-isolation-level-guaranteed="true"
                          lazy-connection-association="false" lazy-connection-enlistment="false"
                          match-connections="false" max-connection-usage-count="0" max-pool-size="32"
                          max-wait-time-in-millis="60000"
                          non-transactional-connections="false" pool-resize-quantity="2" res-type="javax.sql.DataSource"
                          statement-timeout-in-seconds="-1" steady-pool-size="8"
                          validate-atmost-once-period-in-seconds="0" wrap-jdbc-objects="false">

        <property name="URL" value="jdbc:mysql://localhost:3306/tutorialsDS"/>
        <property name="User" value="root"/>
        <property name="Password" value="root"/>
    </jdbc-connection-pool>

    <jdbc-resource enabled="true" jndi-name="jdbc/tutorialsDS" object-type="user" pool-name="JPA_tutorialsDS_Pool">
        <description/>
    </jdbc-resource>
</resources>
```

11) Create database " tutorialsds " in Mysql



```sql
create database tutorialsds;
```

12) Run the application " Green Arrow "



```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE resources PUBLIC "-//GlassFish.org//DTD GlassFish Application Server 3.1 Resource Definitions//EN"
        "http://glassfish.org/dtds/glassfish-resources_1_5.dtd">
<resources>

    <jdbc-connection-pool name="JPA_tutorialsDS_Pool"
                          allow-non-component-callers="false" associate-with-thread="false"
                          connection-creation-retry-attempts="0"
                          connection-creation-retry-interval-in-seconds="10" connection-leak-reclaim="false"
                          connection-leak-timeout-in-seconds="0" connection-validation-method="auto-commit"
                          datasource-classname="com.mysql.jdbc.jdbc2.optional.MysqlDataSource"
                          fail-all-connections="false" idle-timeout-in-seconds="300"
                          is-connection-validation-required="false" is-isolation-level-guaranteed="true"
                          lazy-connection-association="false" lazy-connection-enlistment="false"
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                          non-transactional-connections="false" pool-resize-quantity="2" res-type="javax.sql.DataSource"
                          statement-timeout-in-seconds="-1" steady-pool-size="8"
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        <property name="URL" value="jdbc:mysql://localhost:3306/tutorialsDS"/>
        <property name="User" value="root"/>
        <property name="Password" value="root"/>
    </jdbc-connection-pool>

    <jdbc-resource enabled="true" jndi-name="jdbc/tutorialsDS" object-type="user" pool-name="JPA_tutorialsDS_Pool">
        <description/>
    </jdbc-resource>
</resources>
```
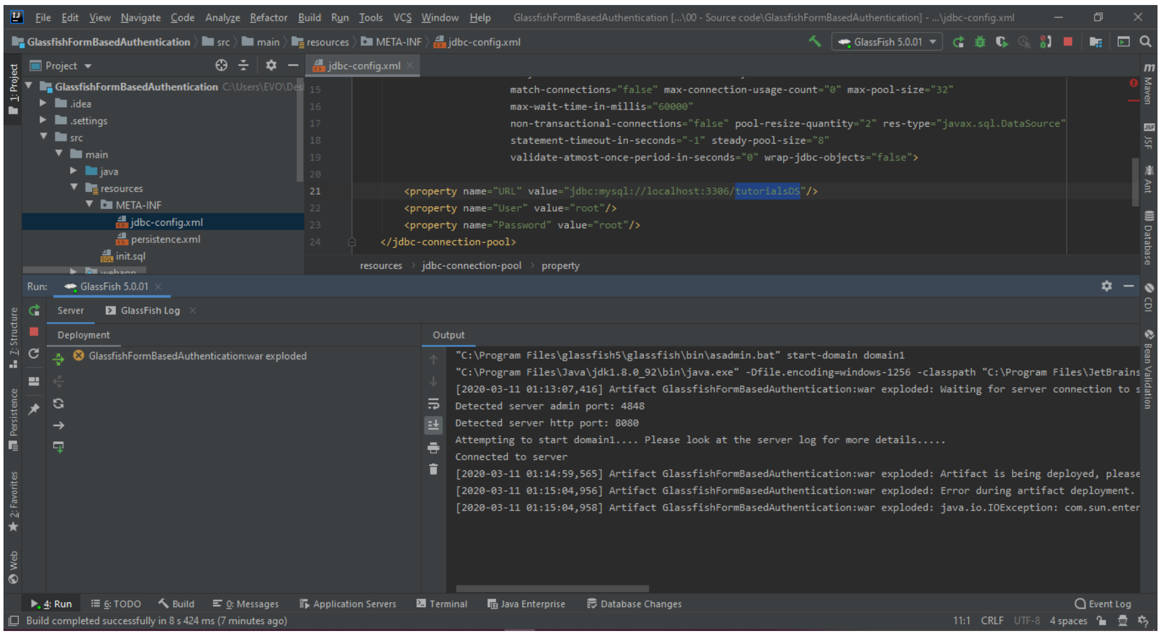
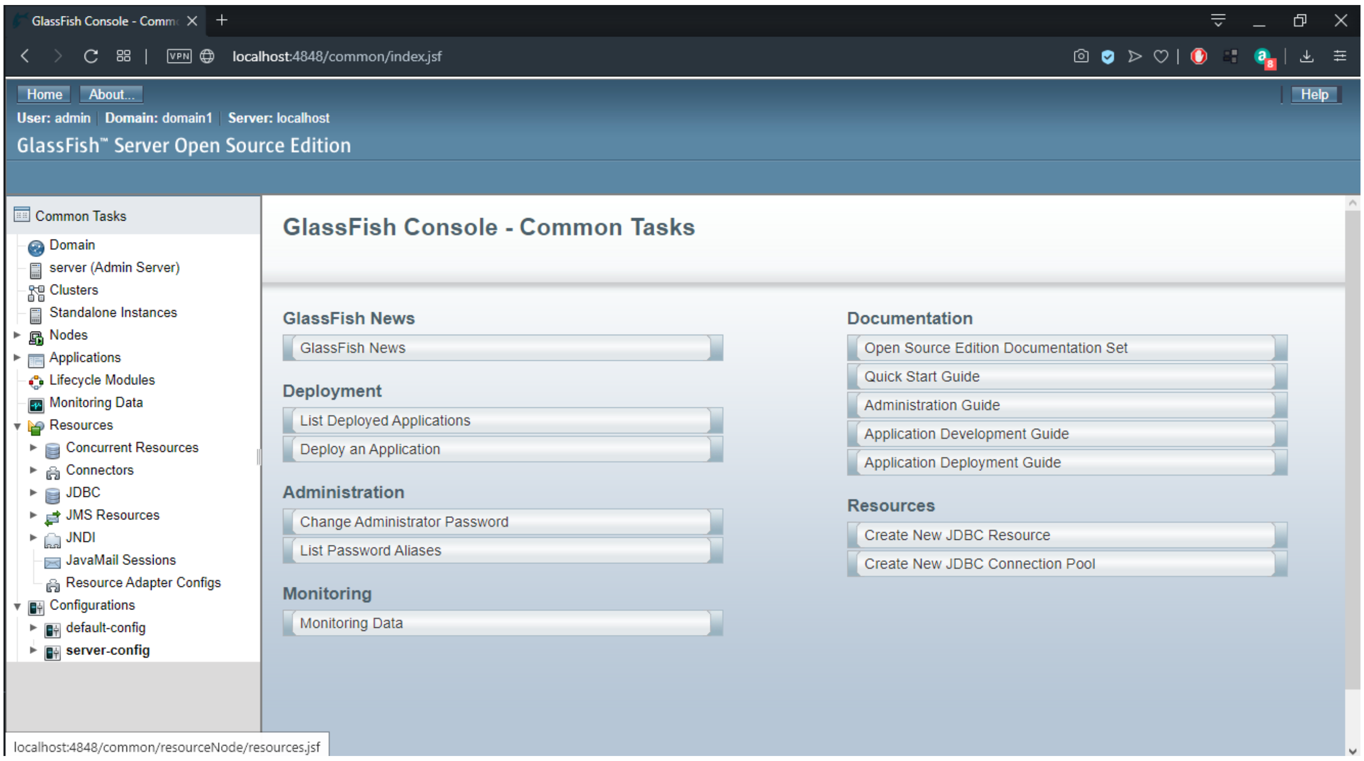



```
"C:\Program Files\glassfish5\glassfish\bin\asadmin.bat" start-domain domain1
"C:\Program Files\Java\jdk1.8.0_92\bin\java.exe" -Dfile.encoding=windows-1256 -classpath "C:\Program Files\JetBrains
[2020-03-11 01:13:07,416] Artifact GlassfishFormBasedAuthentication:war exploded: Waiting for server connection to s
Detected server admin port: 4848
Detected server http port: 8080
Attempting to start domain1.... Please look at the server log for more details.....
Connected to server
[2020-03-11 01:14:59,565] Artifact GlassfishFormBasedAuthentication:war exploded: Artifact is being deployed, please
[2020-03-11 01:15:04,956] Artifact GlassfishFormBasedAuthentication:war exploded: Error during artifact deployment.
[2020-03-11 01:15:04,958] Artifact GlassfishFormBasedAuthentication:war exploded: java.io.IOException: com.sun.enter
```

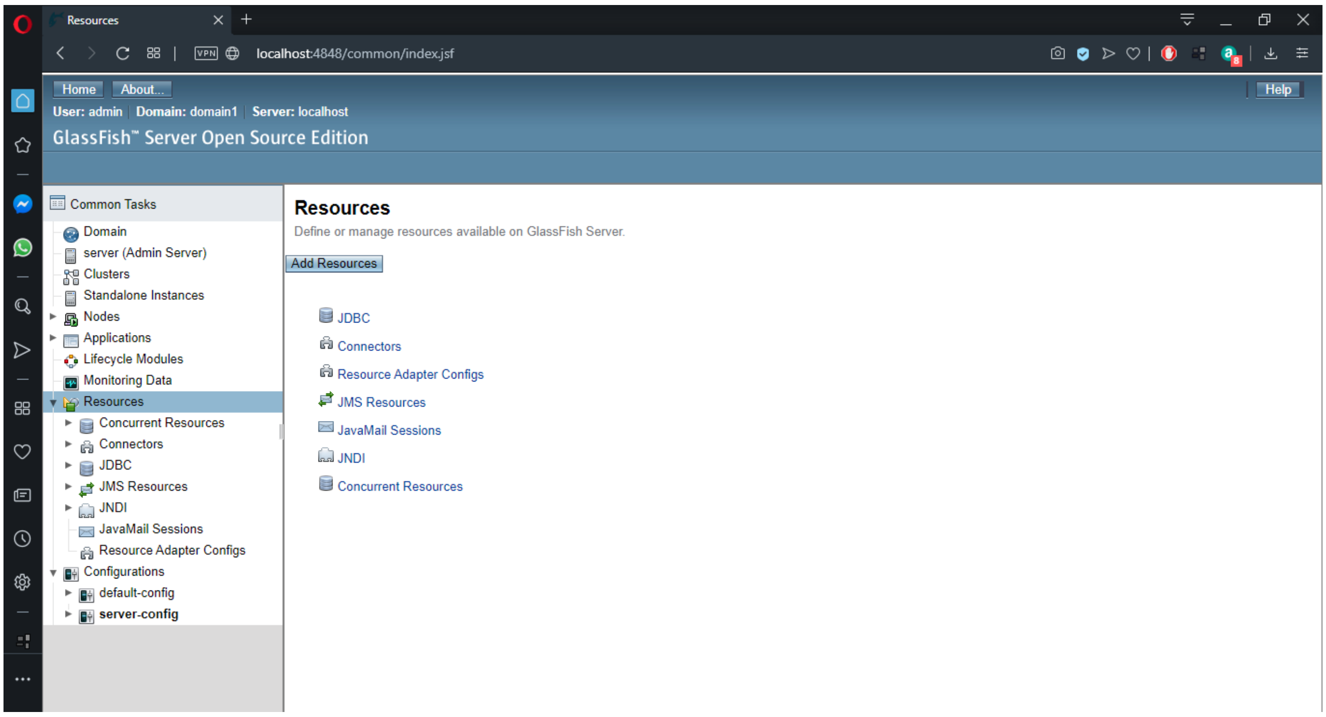
13) Now go to administration of the server " *localhost:4848* " to setup data source " jdbc/tutorialsDS " and " jdbcRealm " configurations .

First we"ll setup data source " jdbc/tutorialsDS "

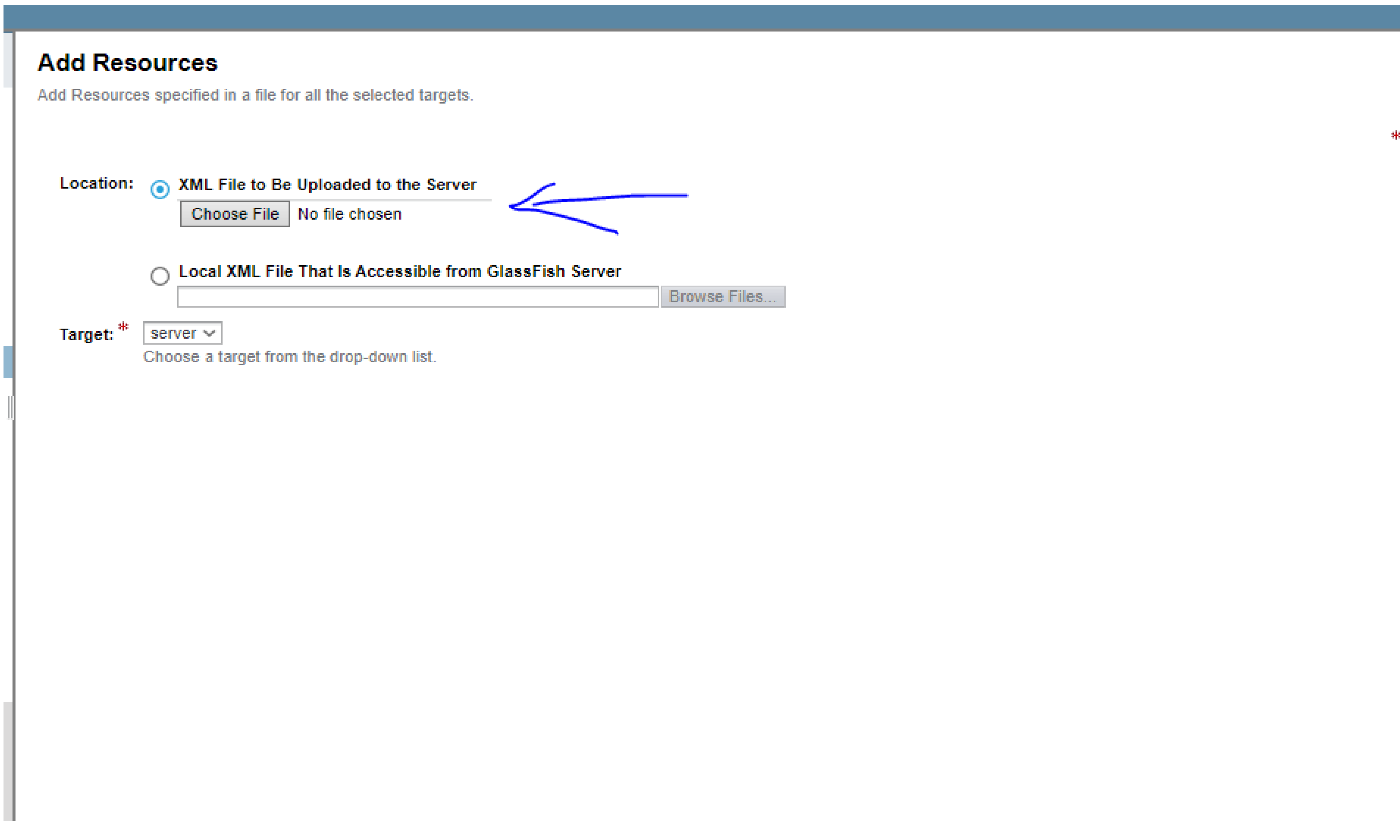
Go to Resources



14) Then click Add Resources



15) Click choose file



Add Resources

Add Resources specified in a file for all the selected targets.

Location: (●) XML File to Be Uploaded to the Server

Choose File No file chosen

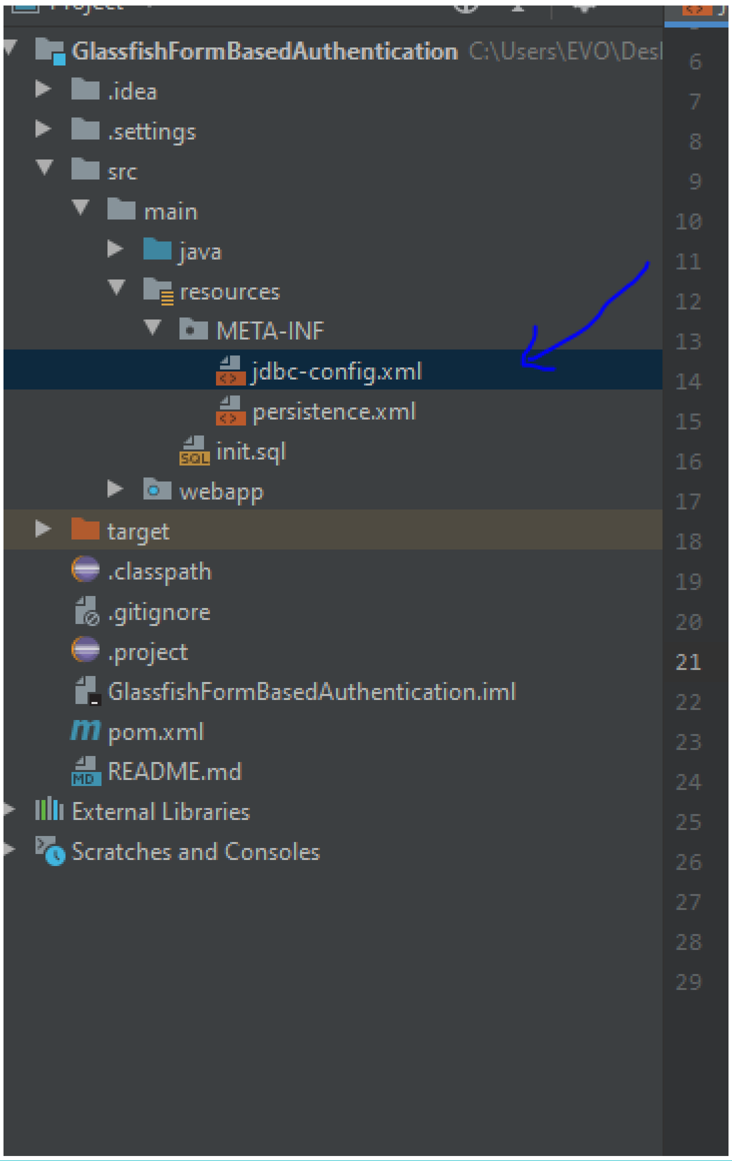
( ) Local XML File That Is Accessible from GlassFish Server

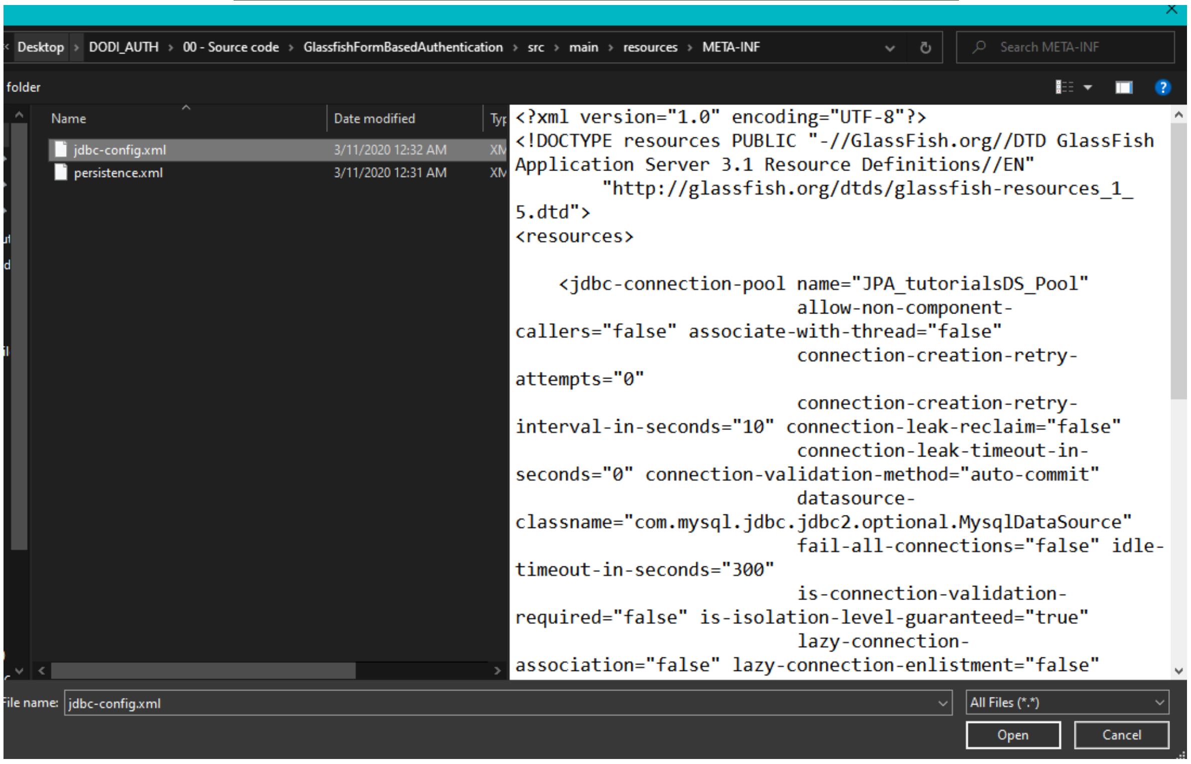
Browse Files...

Target: * server

Choose a target from the drop-down list.

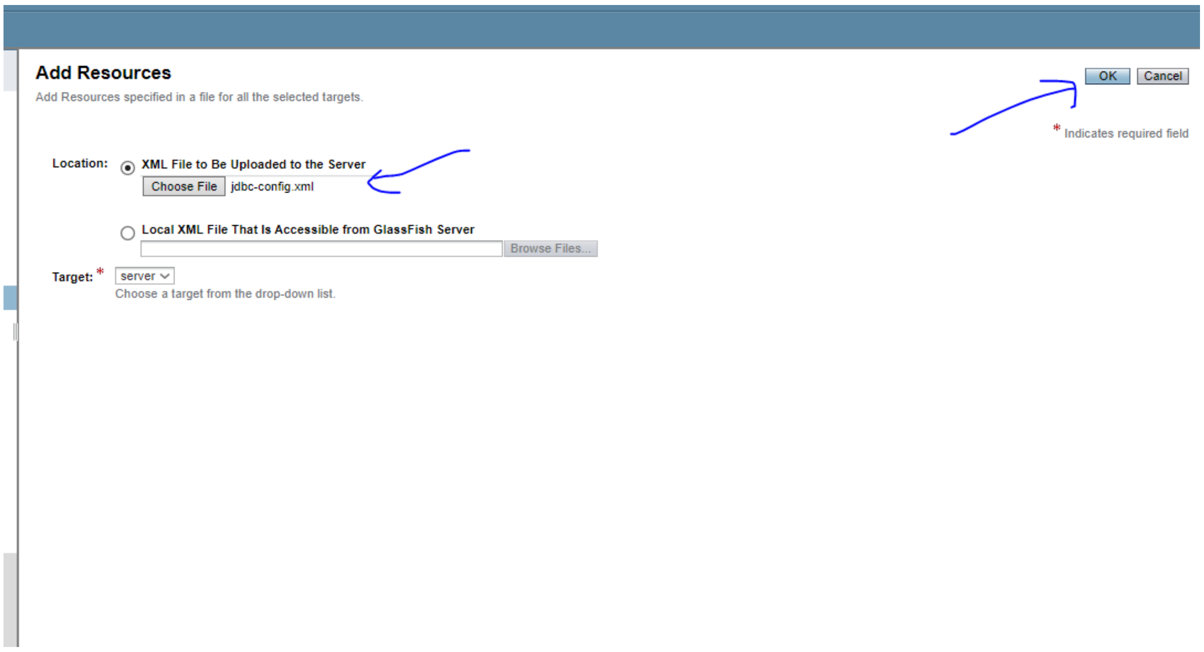
16) Go to project's folder then pick jdbc-config.xml




Desktop › DODI_AUTH › 00 - Source code › GlassfishFormBasedAuthentication › src › main › resources › META-INF
Search META-INF
folder
Name
Date modified
jdbc-config.xml 3/11/2020 12:32 AM
persistence.xml 3/11/2020 12:31 AM
File name: jdbc-config.xml
All Files (*.*)
Open
Cancel

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE resources PUBLIC "-//GlassFish.org//DTD GlassFish
Application Server 3.1 Resource Definitions//EN"
        "http://glassfish.org/dtds/glassfish-resources_1_
5.dtd">
<resources>

    <jdbc-connection-pool name="JPA_tutorialsDS_Pool"
                          allow-non-component-
callers="false" associate-with-thread="false"
                          connection-creation-retry-
attempts="0"
                          connection-creation-retry-
interval-in-seconds="10" connection-leak-reclaim="false"
                          connection-leak-timeout-in-
seconds="0" connection-validation-method="auto-commit"
                          datasource-
classname="com.mysql.jdbc.jdbc2.optional.MysqlDataSource"
                          fail-all-connections="false" idle-
timeout-in-seconds="300"
                          is-connection-validation-
required="false" is-isolation-level-guaranteed="true"
                          lazy-connection-
association="false" lazy-connection-enlistment="false"
```

17) Then click **OK**



Add Resources

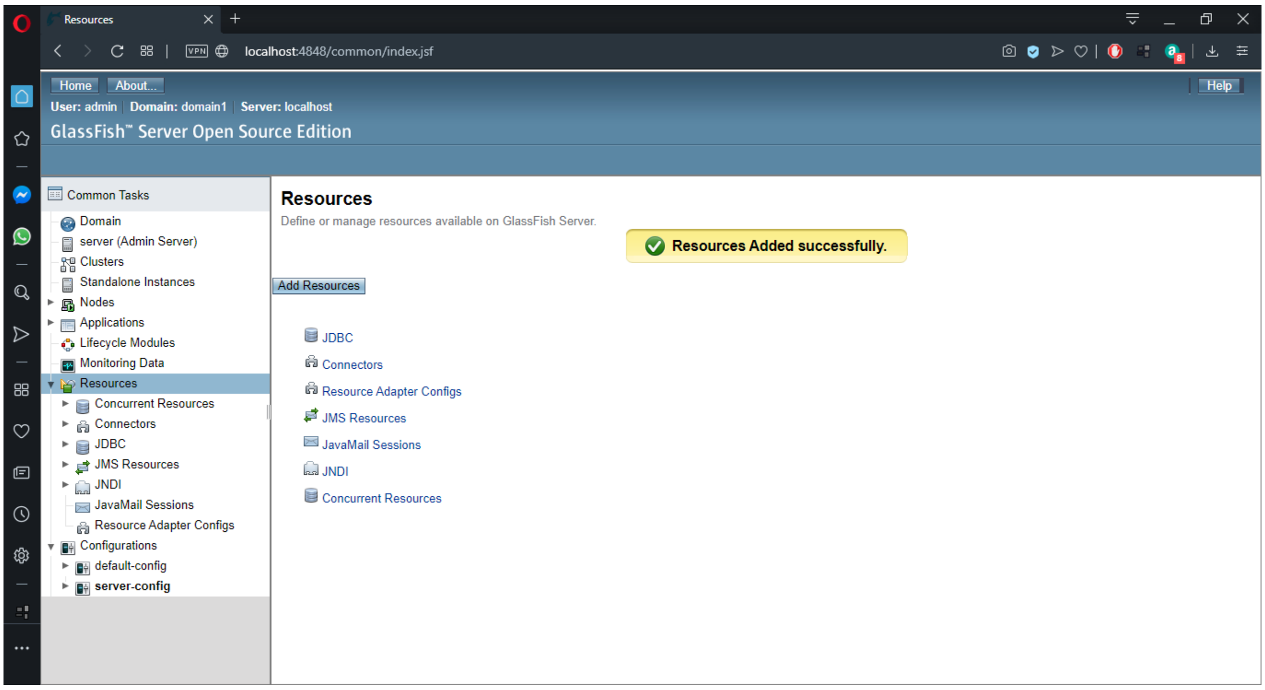
Add Resources specified in a file for all the selected targets.

Location: XML File to Be Uploaded to the Server — Choose File: jdbc-config.xml

Local XML File That Is Accessible from GlassFish Server

Target: * server

Choose a target from the drop-down list.



User: admin | Domain: domain1 | Server: localhost

GlassFish™ Server Open Source Edition

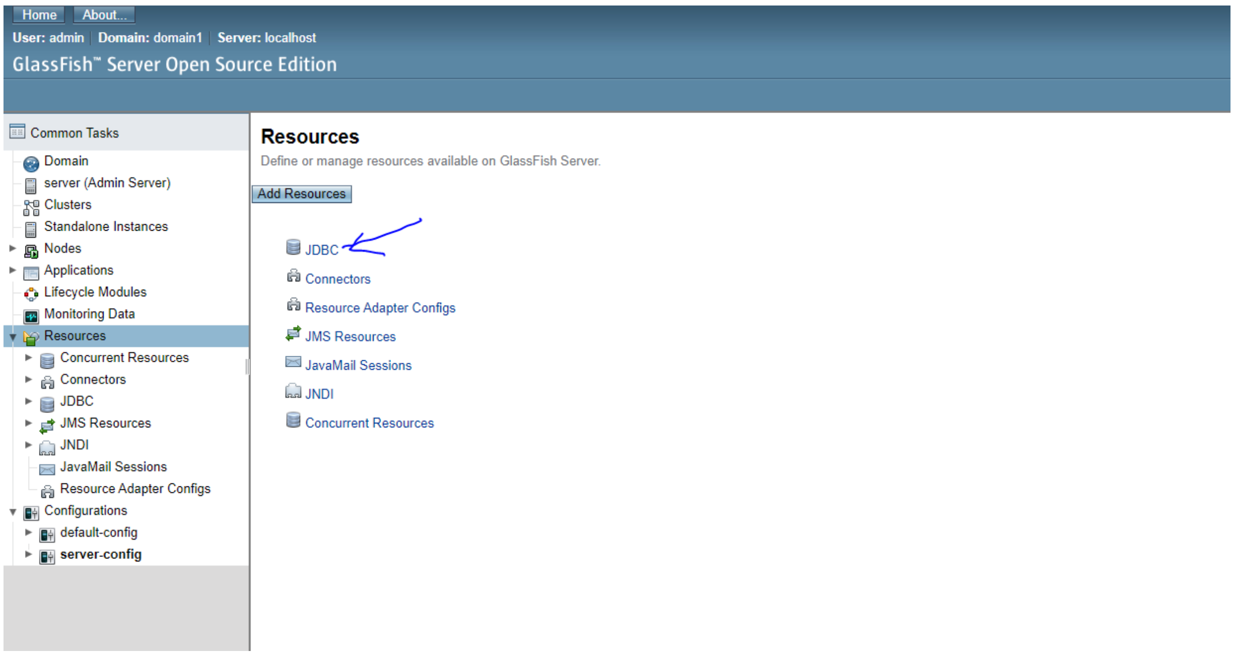
Resources

Define or manage resources available on GlassFish Server.

Resources Added successfully.

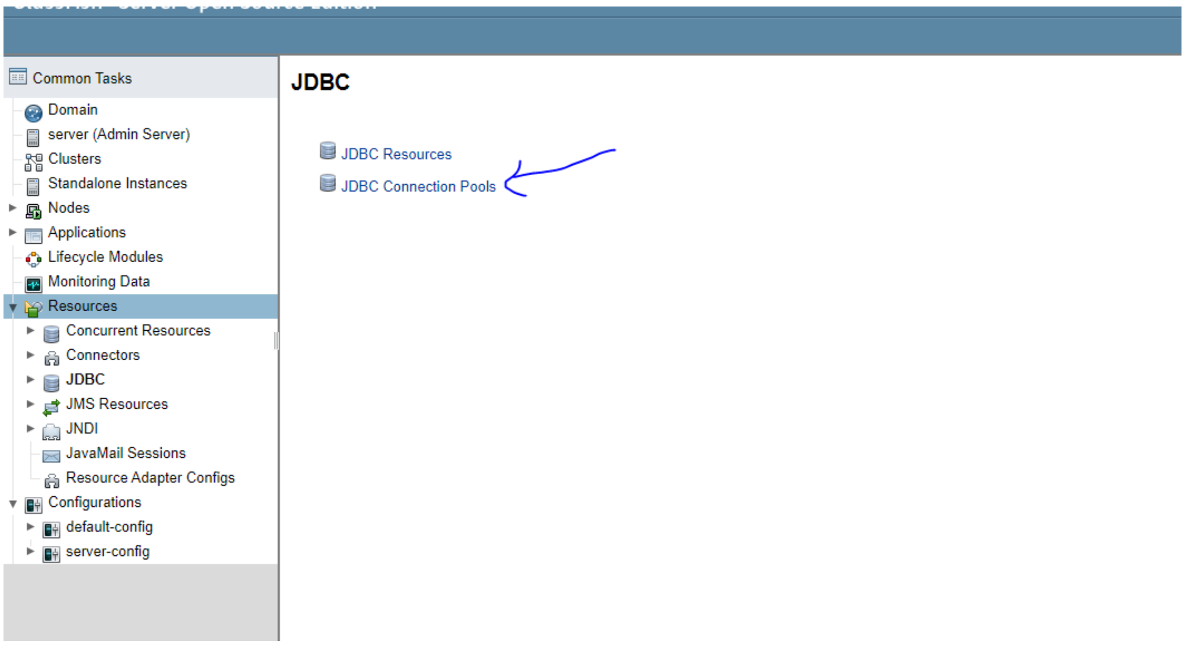
18) **Data source** should be created correctly to verify you must test to **ping it** from your **server** to your **SGBD MySQL**

To ping go to JDBC then **JDBC Connection Pools**



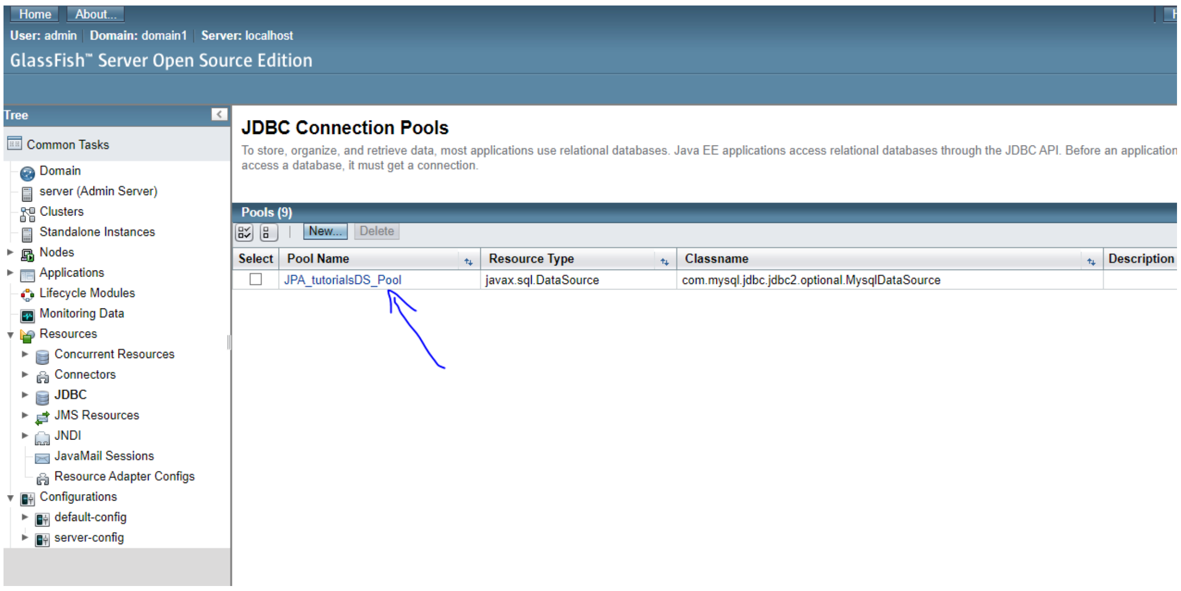
Resources

Define or manage resources available on GlassFish Server.



JDBC

19) Enter JPA_tutorialsDS_Pool



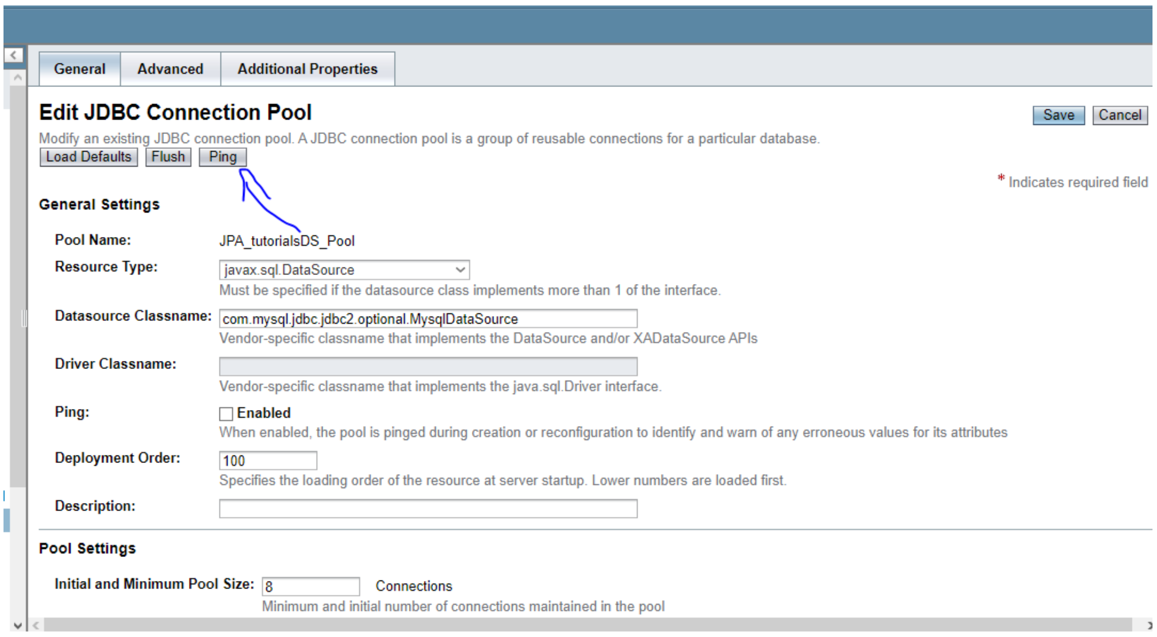
JDBC Connection Pools

To store, organize, and retrieve data, most applications use relational databases. Java EE applications access relational databases through the JDBC API. Before an application access a database, it must get a connection.

Pools (9)

Select	Pool Name	Resource Type	Classname	Description
☐	JPA_tutorialsDS_Pool	javax.sql.DataSource	com.mysql.jdbc.jdbc2.optional.MysqlDataSource	

20) Click ping



Edit JDBC Connection Pool

Modify an existing JDBC connection pool. A JDBC connection pool is a group of reusable connections for a particular database.

* Indicates required field

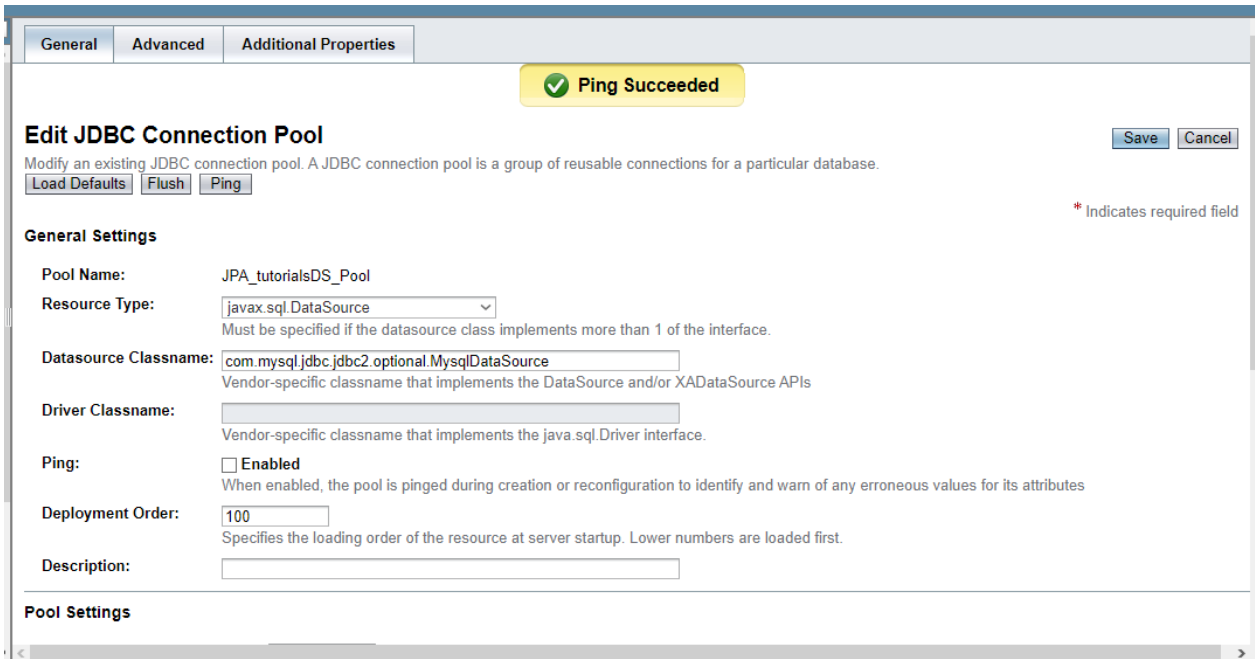
General Settings

Pool Name:	JPA_tutorialsDS_Pool
Resource Type:	javax.sql.DataSource Must be specified if the datasource class implements more than 1 of the interface.
Datasource Classname:	com.mysql.jdbc.jdbc2.optional.MysqlDataSource Vendor-specific classname that implements the DataSource and/or XADataSource APIs
Driver Classname:	 Vendor-specific classname that implements the java.sql.Driver interface.
Ping:	☐ Enabled When enabled, the pool is pinged during creation or reconfiguration to identify and warn of any erroneous values for its attributes
Deployment Order:	100 Specifies the loading order of the resource at server startup. Lower numbers are loaded first.
Description:	

Pool Settings

Initial and Minimum Pool Size: 8 Connections
Minimum and initial number of connections maintained in the pool

21) Should be succeed



Edit JDBC Connection Pool

Modify an existing JDBC connection pool. A JDBC connection pool is a group of reusable connections for a particular database.

* Indicates required field

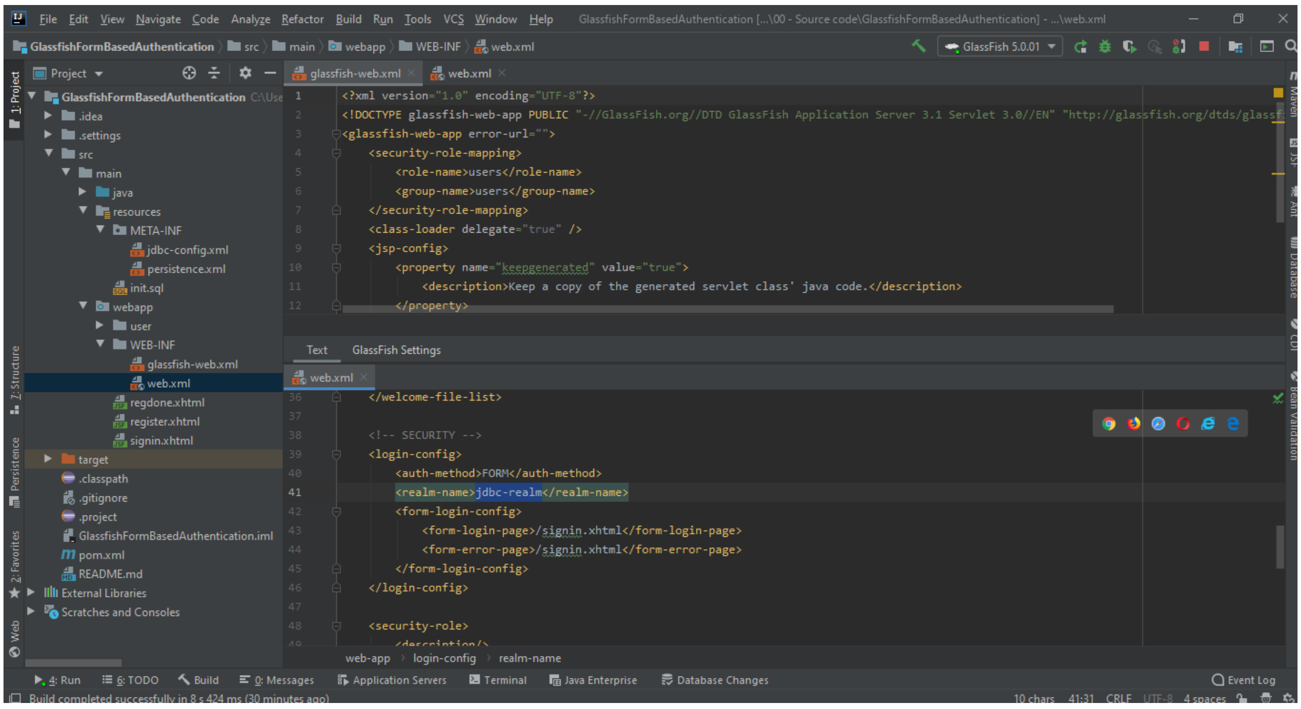
General Settings

Pool Name:	JPA_tutorialsDS_Pool
Resource Type:	javax.sql.DataSource Must be specified if the datasource class implements more than 1 of the interface.
Datasource Classname:	com.mysql.jdbc.jdbc2.optional.MysqlDataSource Vendor-specific classname that implements the DataSource and/or XADataSource APIs
Driver Classname:	 Vendor-specific classname that implements the java.sql.Driver interface.
Ping:	☐ Enabled When enabled, the pool is pinged during creation or reconfiguration to identify and warn of any erroneous values for its attributes
Deployment Order:	100 Specifies the loading order of the resource at server startup. Lower numbers are loaded first.
Description:	

Pool Settings

22) Second we'll setup jdbcRealm configuration

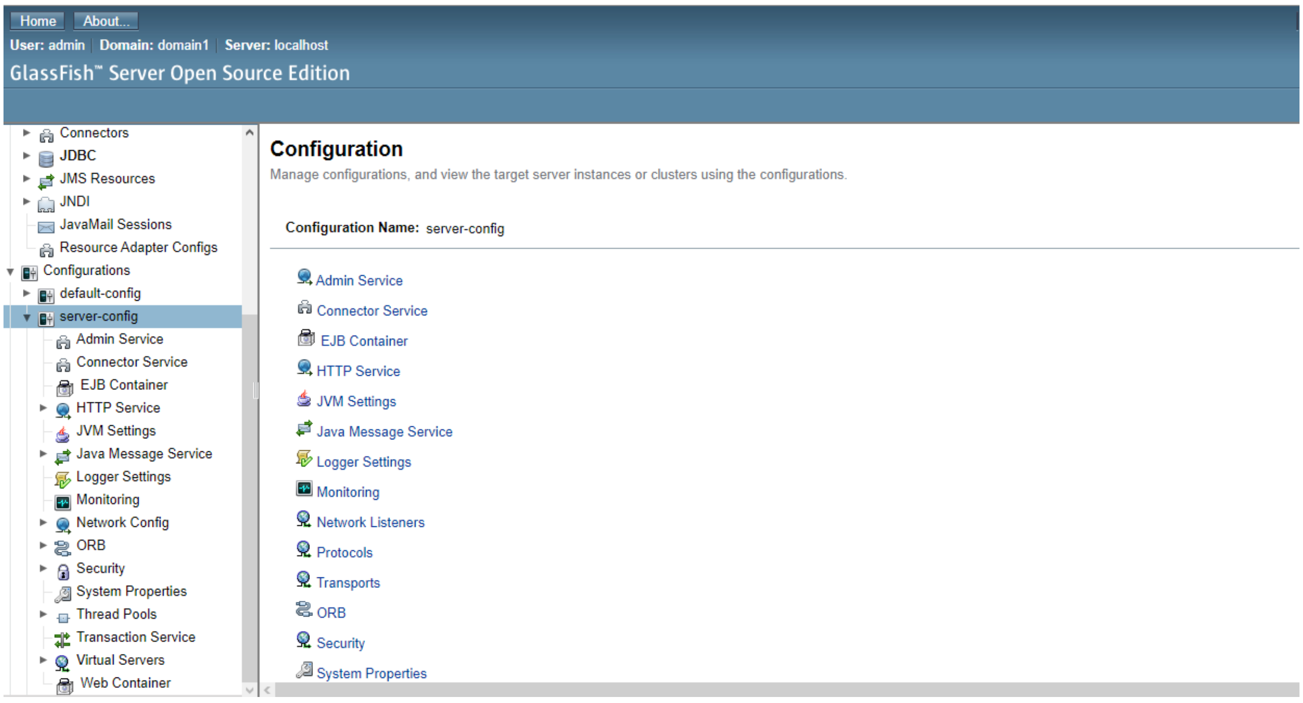
*Such as we had set up the configuration in the code level " **WEB-INF/glassfish-web.xml** " and " **WEB-INF/web.xml** " we must suite this as it is in the server*


GlassfishFormBasedAuthentication [...\00 - Source code\GlassfishFormBasedAuthentication] - ...\web.xml
GlassFish 5.0.01
glassfish-web.xml
web.xml
Text
GlassFish Settings
web-app › login-config › realm-name
Build completed successfully in 8 s 424 ms (30 minutes ago)

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE glassfish-web-app PUBLIC "-//GlassFish.org//DTD GlassFish Application Server 3.1 Servlet 3.0//EN" "http://glassfish.org/dtds/glassf
<glassfish-web-app error-url="">
    <security-role-mapping>
        <role-name>users</role-name>
        <group-name>users</group-name>
    </security-role-mapping>
    <class-loader delegate="true" />
    <jsp-config>
        <property name="keepgenerated" value="true">
            <description>Keep a copy of the generated servlet class' java code.</description>
        </property>
```

```xml
    </welcome-file-list>

    <!-- SECURITY -->
    <login-config>
        <auth-method>FORM</auth-method>
        <realm-name>jdbc-realm</realm-name>
        <form-login-config>
            <form-login-page>/signin.xhtml</form-login-page>
            <form-error-page>/signin.xhtml</form-error-page>
        </form-login-config>
    </login-config>

    <security-role>
```

23) In the server go to configuration -> server-config then open the drop down menu



User: admin | Domain: domain1 | Server: localhost

GlassFish™ Server Open Source Edition

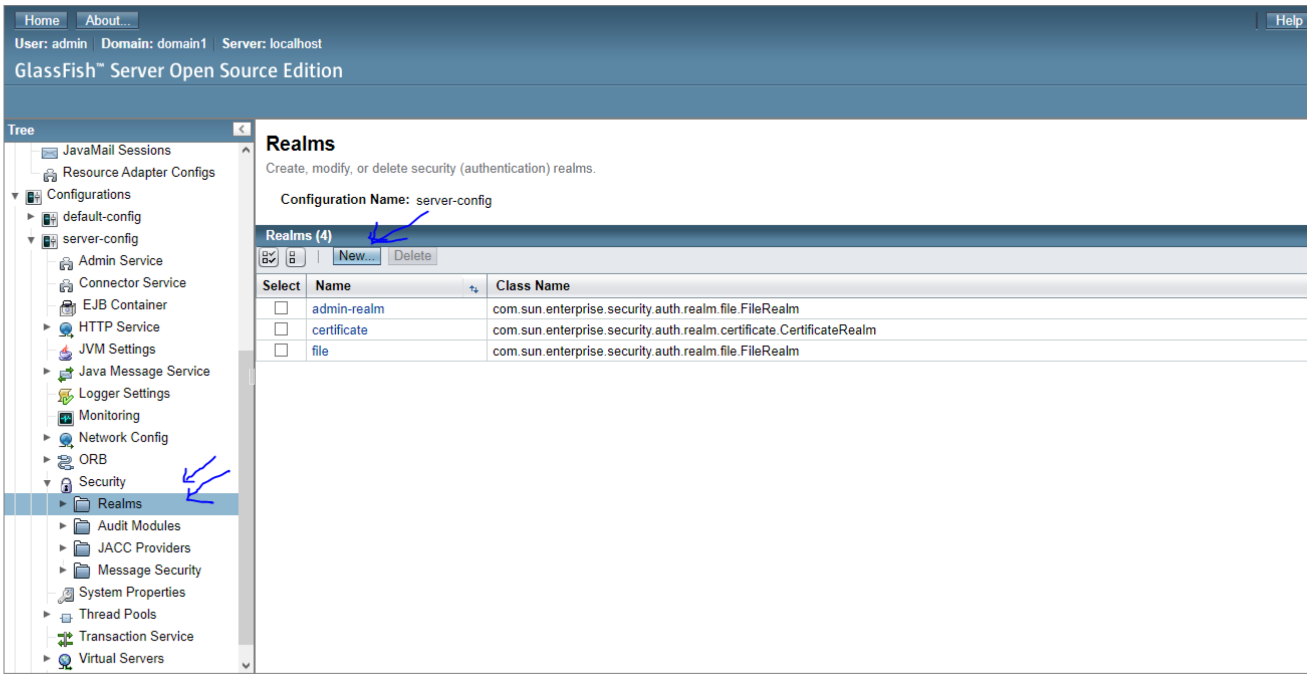
Configuration

Manage configurations, and view the target server instances or clusters using the configurations.

Configuration Name: server-config

- Admin Service
- Connector Service
- EJB Container
- HTTP Service
- JVM Settings
- Java Message Service
- Logger Settings
- Monitoring
- Network Listeners
- Protocols
- Transports
- ORB
- Security
- System Properties

24) From **security** choose **Realms** then click **New...** to add new realm security


Realms

Create, modify, or delete security (authentication) realms.

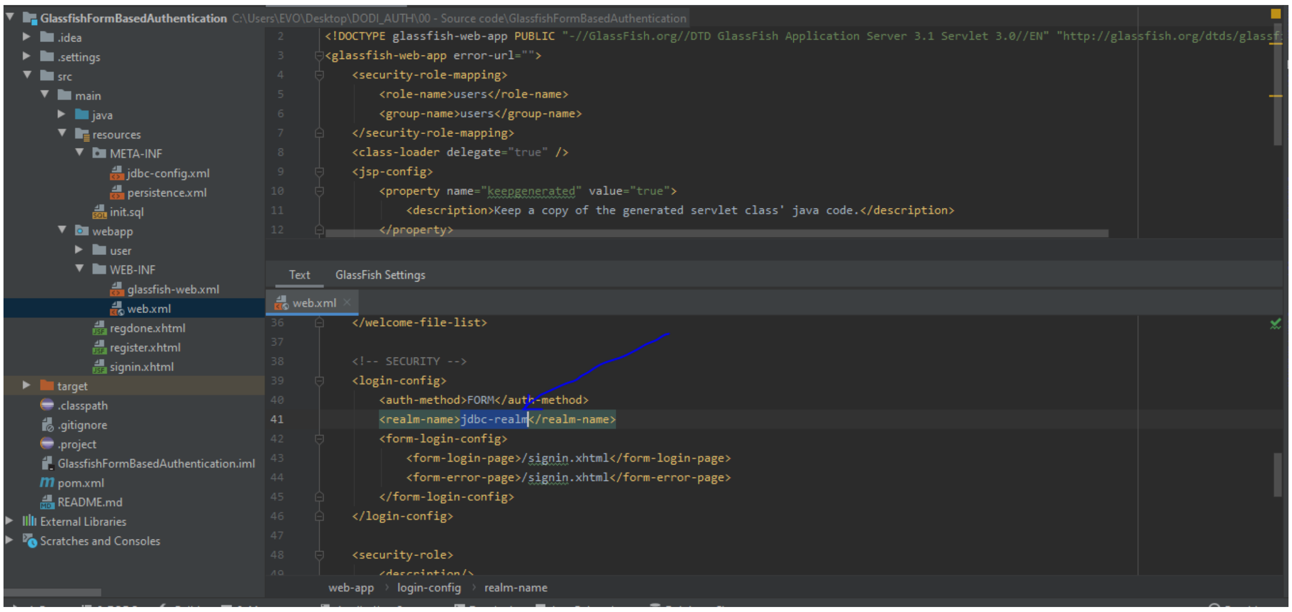
Configuration Name: server-config

Realms (4)

Select	Name	Class Name
☐	admin-realm	com.sun.enterprise.security.auth.realm.file.FileRealm
☐	certificate	com.sun.enterprise.security.auth.realm.certificate.CertificateRealm
☐	file	com.sun.enterprise.security.auth.realm.file.FileRealm

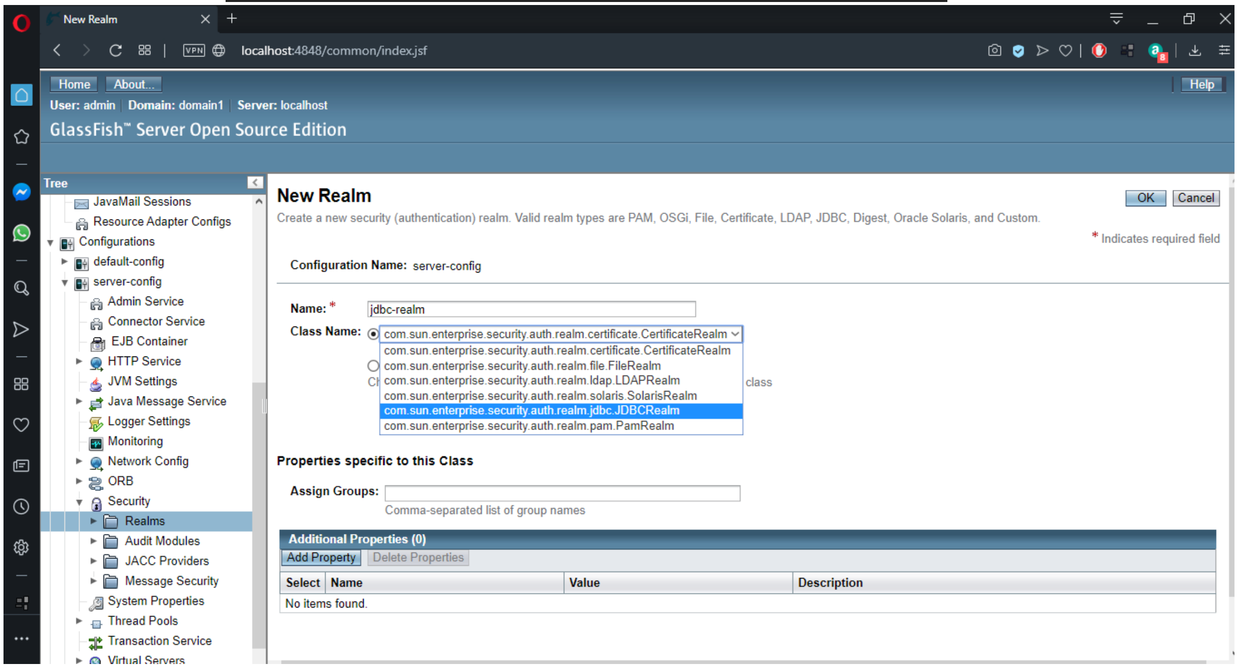
25) As we had named it in the code level, write it in the server level's configurations

- *Web.xml => authorization setting for the security constraint*
- *Glassfish-web.xml => Specifying the group name for the roles*
- *Database => group name specified in your groups table*


```
<!DOCTYPE glassfish-web-app PUBLIC "-//GlassFish.org//DTD GlassFish Application Server 3.1 Servlet 3.0//EN" "http://glassfish.org/dtds/glassf
<glassfish-web-app error-url="">
    <security-role-mapping>
        <role-name>users</role-name>
        <group-name>users</group-name>
    </security-role-mapping>
    <class-loader delegate="true" />
    <jsp-config>
        <property name="keepgenerated" value="true">
            <description>Keep a copy of the generated servlet class' java code.</description>
        </property>
```

```
    </welcome-file-list>

    <!-- SECURITY -->
    <login-config>
        <auth-method>FORM</auth-method>
        <realm-name>jdbc-realm</realm-name>
        <form-login-config>
            <form-login-page>/signin.xhtml</form-login-page>
            <form-error-page>/signin.xhtml</form-error-page>
        </form-login-config>
    </login-config>

    <security-role>
        <description/>
```

26) Also choose com.sun.enterprise.security.auth.realm.jdbc.JDBCRealm ealm type


New Realm

localhost:4848/common/index.jsf

Home About... Help

User: admin Domain: domain1 Server: localhost

GlassFish™ Server Open Source Edition

Tree
- JavaMail Sessions
- Resource Adapter Configs
- Configurations
  - default-config
  - server-config
    - Admin Service
    - Connector Service
    - EJB Container
    - HTTP Service
    - JVM Settings
    - Java Message Service
    - Logger Settings
    - Monitoring
    - Network Config
    - ORB
    - Security
      - Realms
      - Audit Modules
      - JACC Providers
      - Message Security
    - System Properties
    - Thread Pools
    - Transaction Service
    - Virtual Servers

New Realm

Create a new security (authentication) realm. Valid realm types are PAM, OSGi, File, Certificate, LDAP, JDBC, Digest, Oracle Solaris, and Custom.

OK Cancel

* Indicates required field

Configuration Name: server-config

Name: * jdbc-realm

Class Name: com.sun.enterprise.security.auth.realm.certificate.CertificateRealm
- com.sun.enterprise.security.auth.realm.certificate.CertificateRealm
- com.sun.enterprise.security.auth.realm.file.FileRealm
- com.sun.enterprise.security.auth.realm.ldap.LDAPRealm
- com.sun.enterprise.security.auth.realm.solaris.SolarisRealm
- com.sun.enterprise.security.auth.realm.jdbc.JDBCRealm
- com.sun.enterprise.security.auth.realm.pam.PamRealm

Properties specific to this Class

Assign Groups:

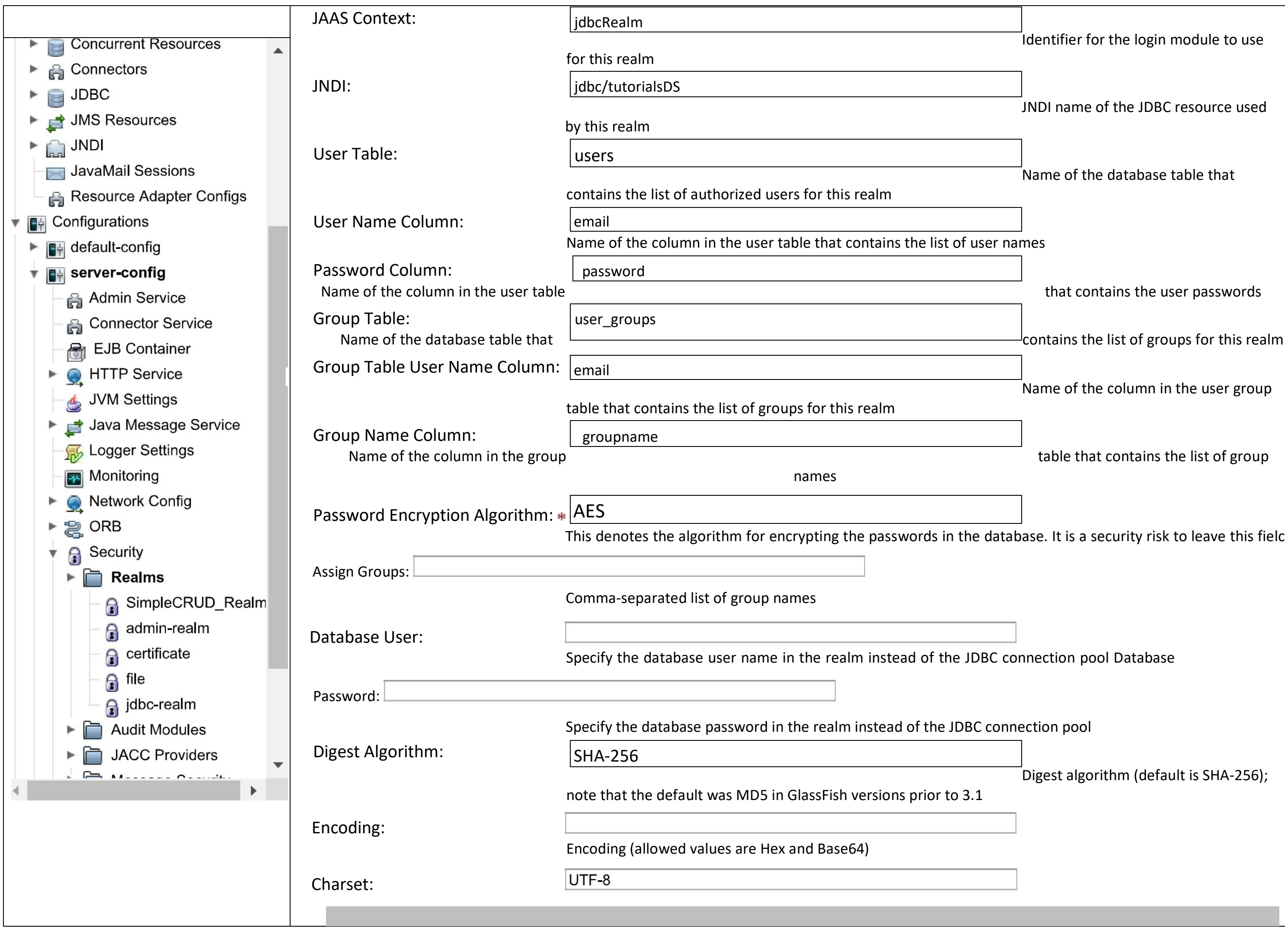
Comma-separated list of group names

Additional Properties (0)

Add Property Delete Properties

Select	Name	Value	Description
No items found.			

27) Then complete the form as the following


- Concurrent Resources
- Connectors
- JDBC
- JMS Resources
- JNDI
- JavaMail Sessions
- Resource Adapter Configs
- Configurations
  - default-config
  - **server-config**
    - Admin Service
    - Connector Service
    - EJB Container
    - HTTP Service
    - JVM Settings
    - Java Message Service
    - Logger Settings
    - Monitoring
    - Network Config
    - ORB
    - Security
      - **Realms**
        - SimpleCRUD_Realm
        - admin-realm
        - certificate
        - file
        - jdbc-realm
      - Audit Modules
      - JACC Providers

JAAS Context: jdbcRealm
Identifier for the login module to use for this realm

JNDI: jdbc/tutorialsDS
JNDI name of the JDBC resource used by this realm

User Table: users
Name of the database table that contains the list of authorized users for this realm

User Name Column: email
Name of the column in the user table that contains the list of user names

Password Column: password
Name of the column in the user table that contains the user passwords

Group Table: user_groups
Name of the database table that contains the list of groups for this realm

Group Table User Name Column: email
Name of the column in the user group table that contains the list of groups for this realm

Group Name Column: groupname
Name of the column in the group table that contains the list of group names

Password Encryption Algorithm: * AES
This denotes the algorithm for encrypting the passwords in the database. It is a security risk to leave this fielc

Assign Groups:
Comma-separated list of group names

Database User:
Specify the database user name in the realm instead of the JDBC connection pool Database

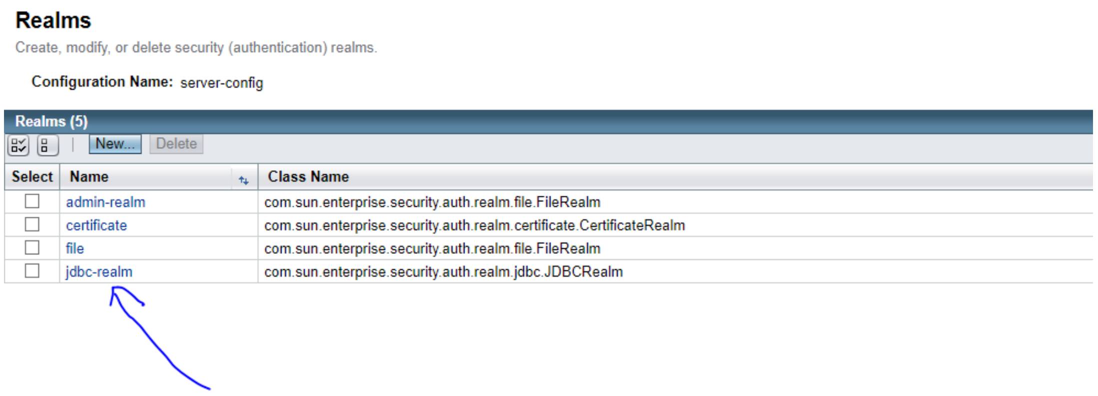
Password:
Specify the database password in the realm instead of the JDBC connection pool

Digest Algorithm: SHA-256
Digest algorithm (default is SHA-256); note that the default was MD5 in GlassFish versions prior to 3.1

Encoding:
Encoding (allowed values are Hex and Base64)

Charset: UTF-8

28) Finally, it added



Realms

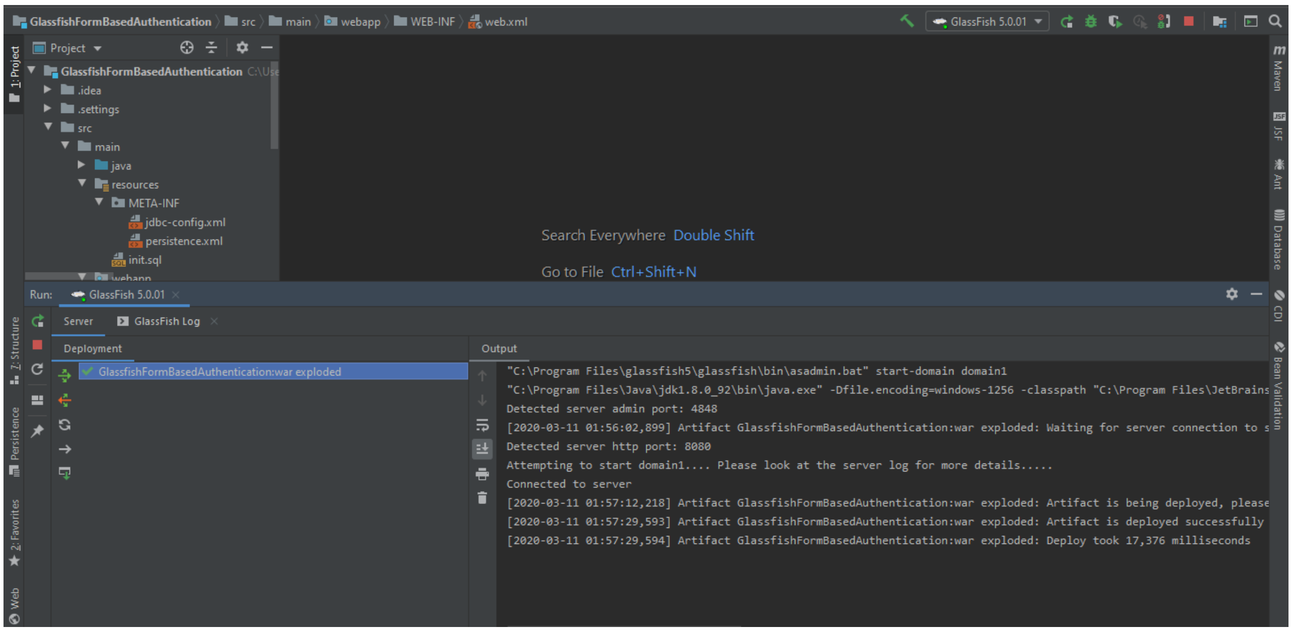
Create, modify, or delete security (authentication) realms.

Configuration Name: server-config

Realms (5)

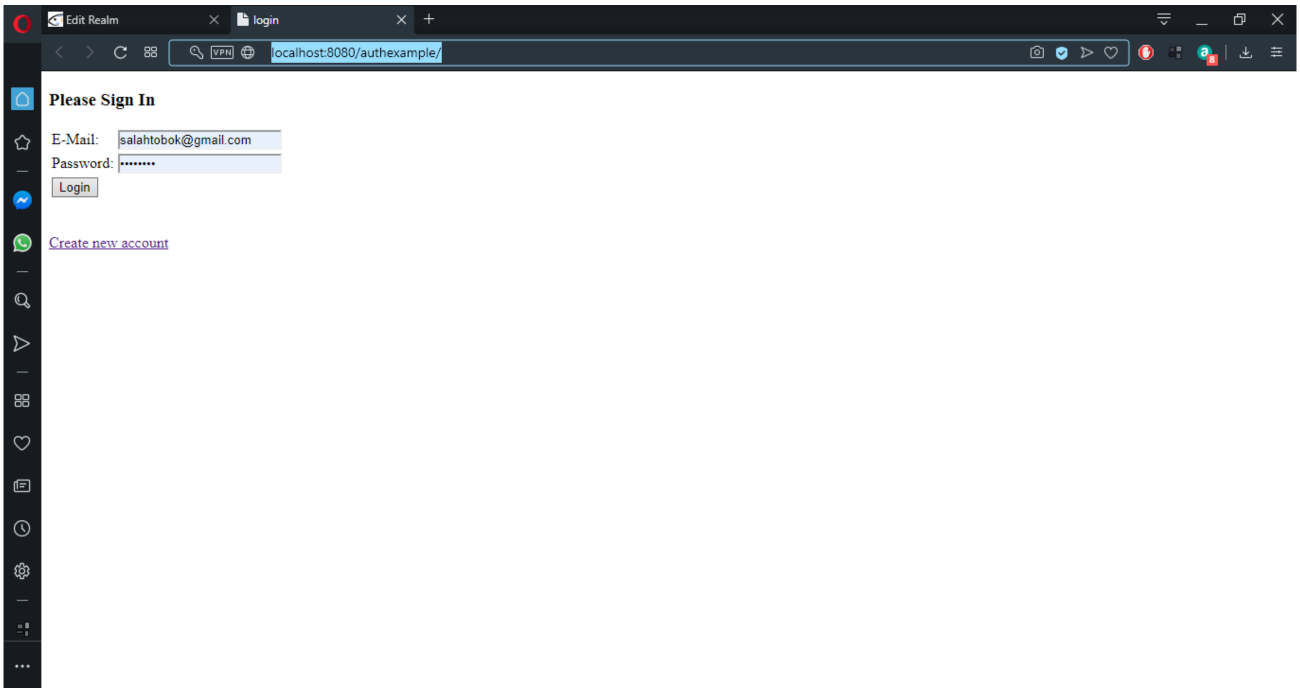
Select	Name	Class Name
☐	admin-realm	com.sun.enterprise.security.auth.realm.file.FileRealm
☐	certificate	com.sun.enterprise.security.auth.realm.certificate.CertificateRealm
☐	file	com.sun.enterprise.security.auth.realm.file.FileRealm
☐	jdbc-realm	com.sun.enterprise.security.auth.realm.jdbc.JDBCRealm

29) Now rerun the application, everything should run correctly



```
"C:\Program Files\glassfish5\glassfish\bin\asadmin.bat" start-domain domain1
"C:\Program Files\Java\jdk1.8.0_92\bin\java.exe" -Dfile.encoding=windows-1256 -classpath "C:\Program Files\JetBrains
Detected server admin port: 4848
[2020-03-11 01:56:02,899] Artifact GlassfishFormBasedAuthentication:war exploded: Waiting for server connection to s
Detected server http port: 8080
Attempting to start domain1.... Please look at the server log for more details.....
Connected to server
[2020-03-11 01:57:12,218] Artifact GlassfishFormBasedAuthentication:war exploded: Artifact is being deployed, please
[2020-03-11 01:57:29,593] Artifact GlassfishFormBasedAuthentication:war exploded: Artifact is deployed successfully
[2020-03-11 01:57:29,594] Artifact GlassfishFormBasedAuthentication:war exploded: Deploy took 17,376 milliseconds
```

Application path: http://localhost:8080/authexample/



Please Sign In

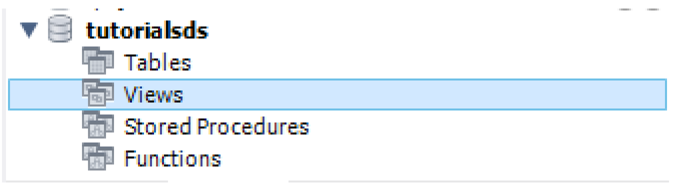
E-Mail:	salahtobok@gmail.com
Password:	••••••••

Login

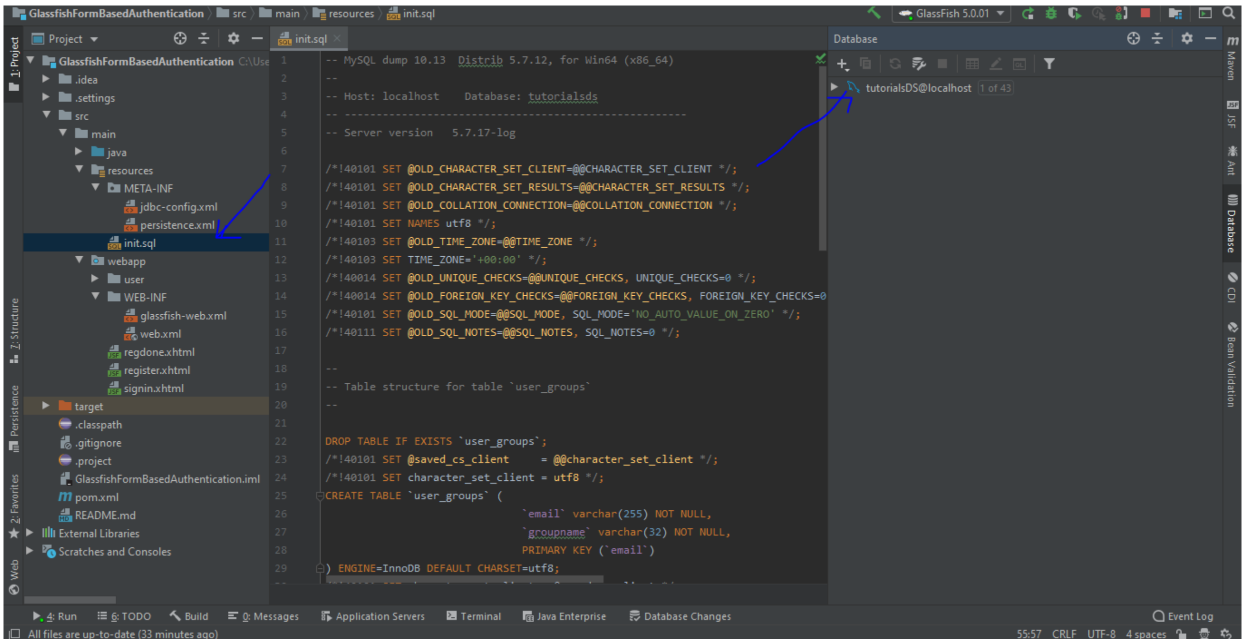
Create new account

30) Before test the application you must run **init.sql** script to create **database tables** and **test records**

Database statue after run the script

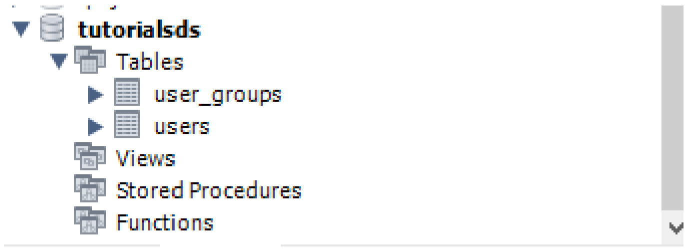


Then after we run it

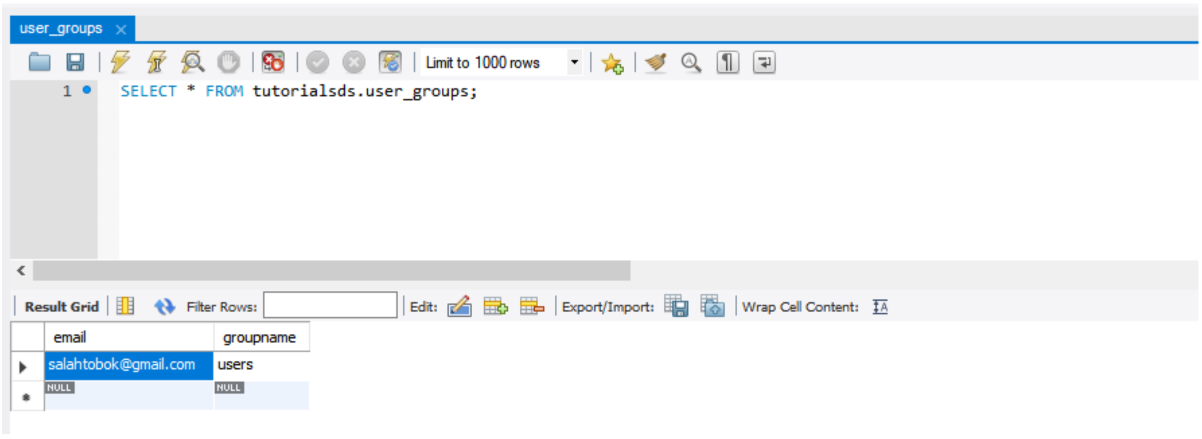


```sql
-- MySQL dump 10.13  Distrib 5.7.12, for Win64 (x86_64)
--
-- Host: localhost    Database: tutorialsds
-- ------------------------------------------------------
-- Server version	5.7.17-log

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;

--
-- Table structure for table `user_groups`
--

DROP TABLE IF EXISTS `user_groups`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `user_groups` (
                               `email` varchar(255) NOT NULL,
                               `groupname` varchar(32) NOT NULL,
                               PRIMARY KEY (`email`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

31) We have got two table



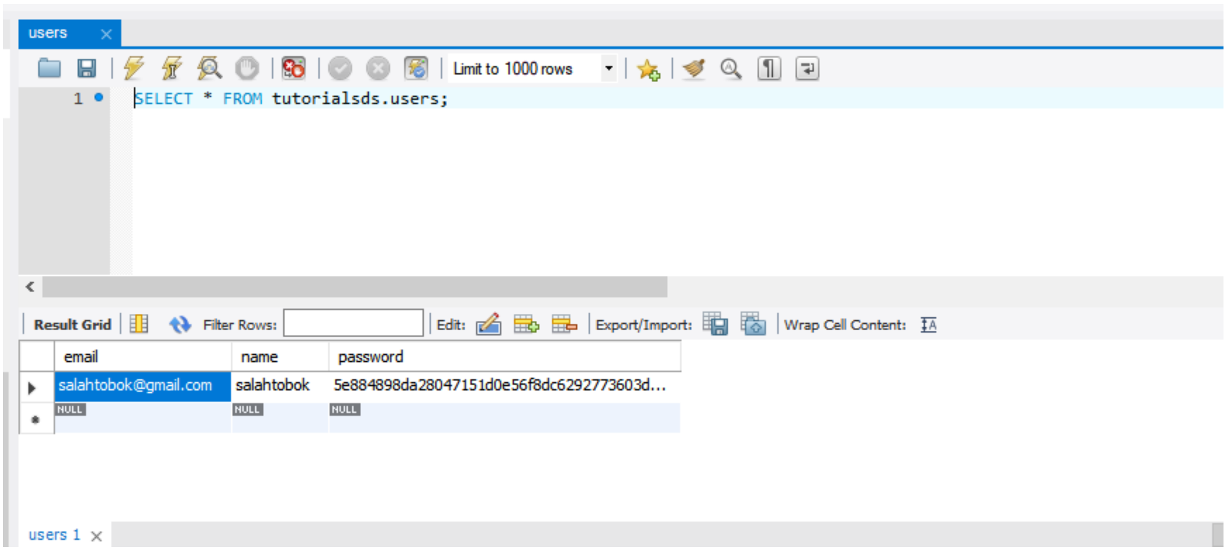
User_groups witch represent the roles



```sql
SELECT * FROM tutorialsds.user_groups;
```

email	groupname
salahtobok@gmail.com	users
NULL	NULL

And users table witch represent the signed up users



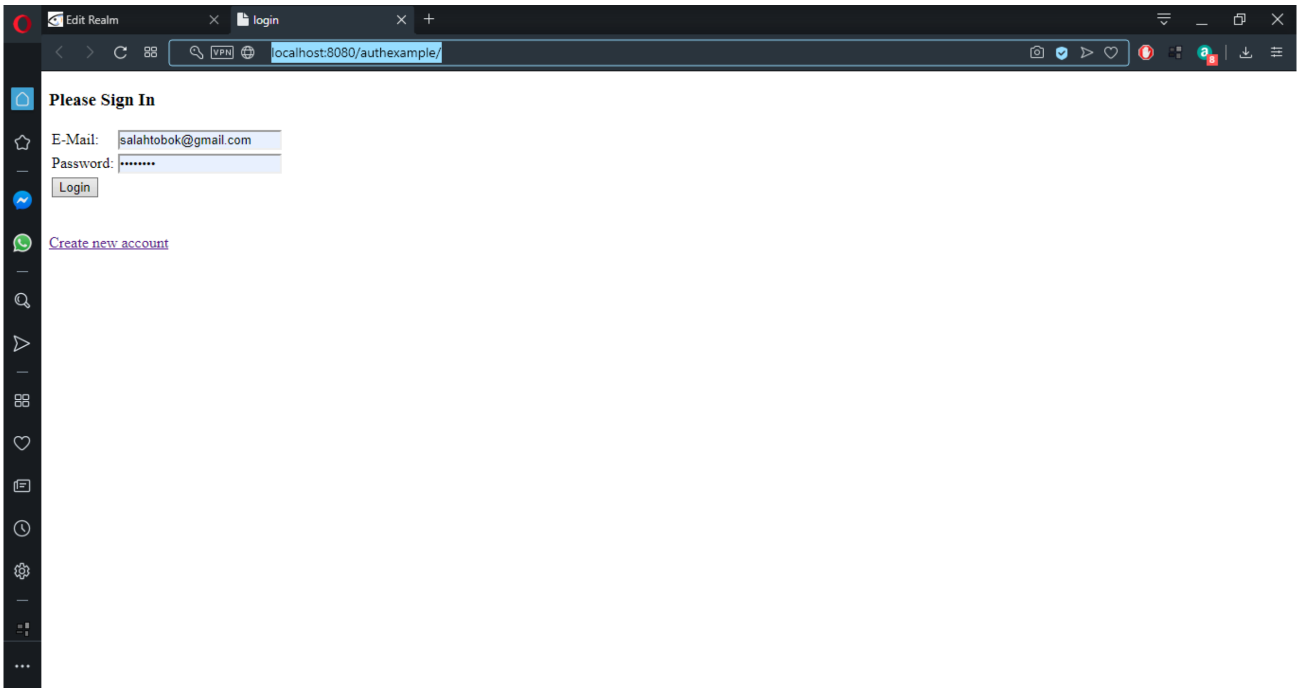
```
SELECT * FROM tutorialsds.users;
```

	email	name	password
▸	salahtobok@gmail.com	salahtobok	5e884898da28047151d0e56f8dc6292773603d...
*	NULL	NULL	NULL

32) Now, Try this test with the following records:

Go to application path: http://localhost:8080/authexample/

SignIn page : http://localhost:8080/authexample/signin.xhtml



Please Sign In

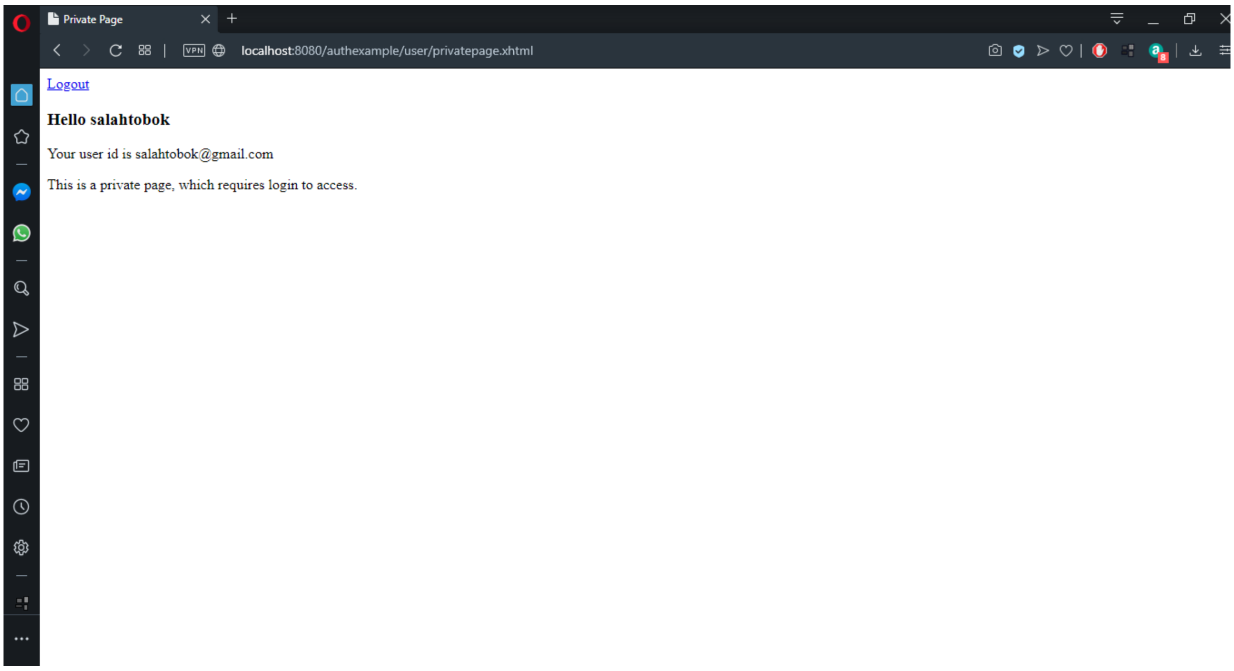
E-Mail: salahtobok@gmail.com
Password: ••••••••

Test record for logging

test :

email : salahtobok@gmail.com

password : password


Private Page

localhost:8080/authexample/user/privatepage.xhtml

Logout

Hello salahtobok

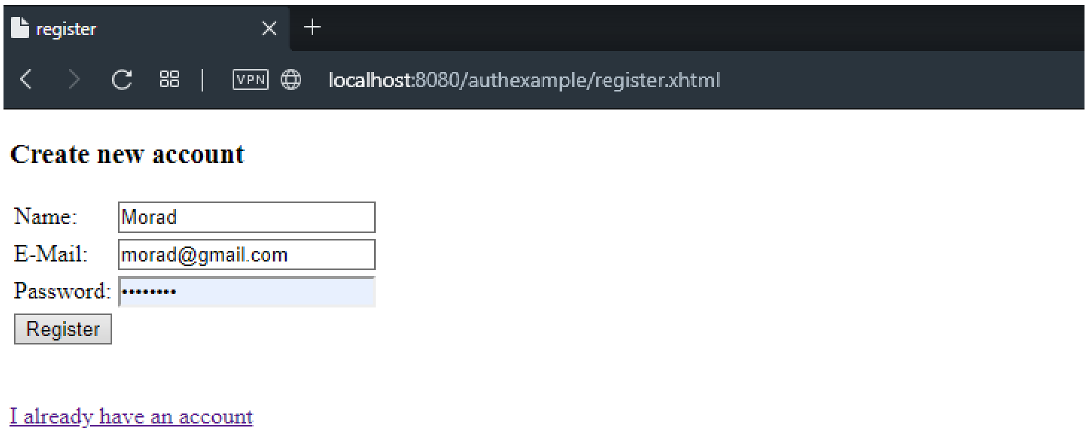
Your user id is salahtobok@gmail.com

This is a private page, which requires login to access.

SignUp page : http://localhost:8080/authexample/register.xhtml

Try with these credentials :

Name : Morad ,E-Mail : morad@gmail.com ,Password : password


register

localhost:8080/authexample/register.xhtml

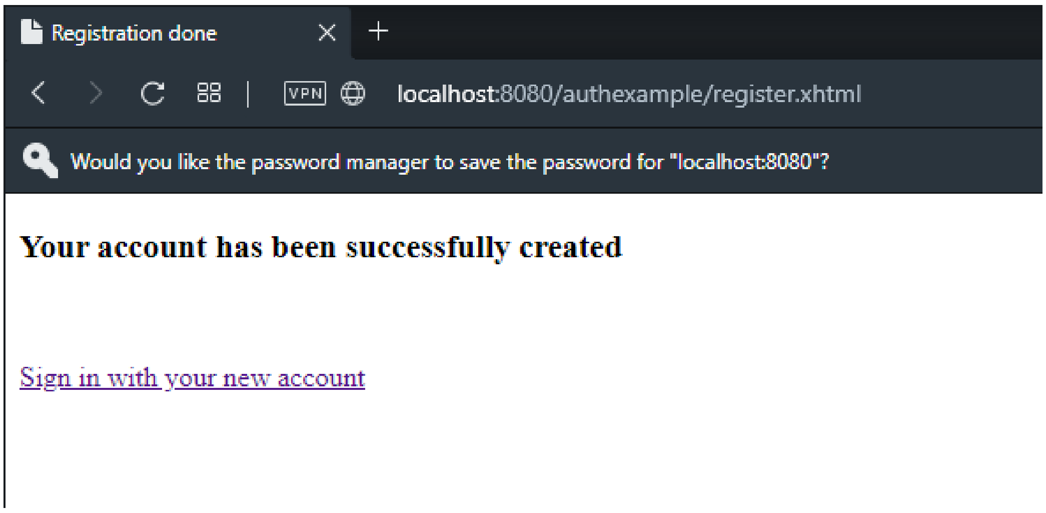
Create new account

Name:	Morad
E-Mail:	morad@gmail.com
Password:	••••••••

Register

I already have an account

Well done .


Registration done

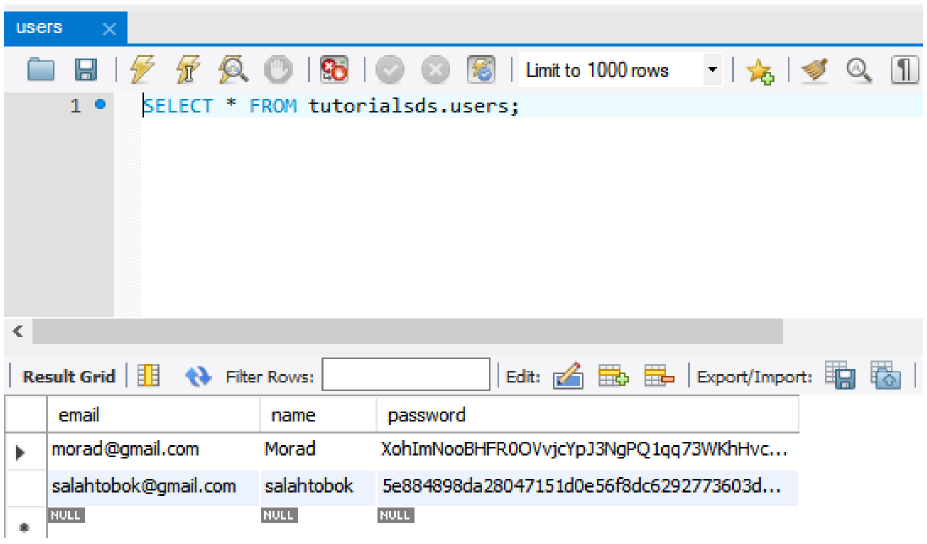
localhost:8080/authexample/register.xhtml

Would you like the password manager to save the password for "localhost:8080"?

Your account has been successfully created

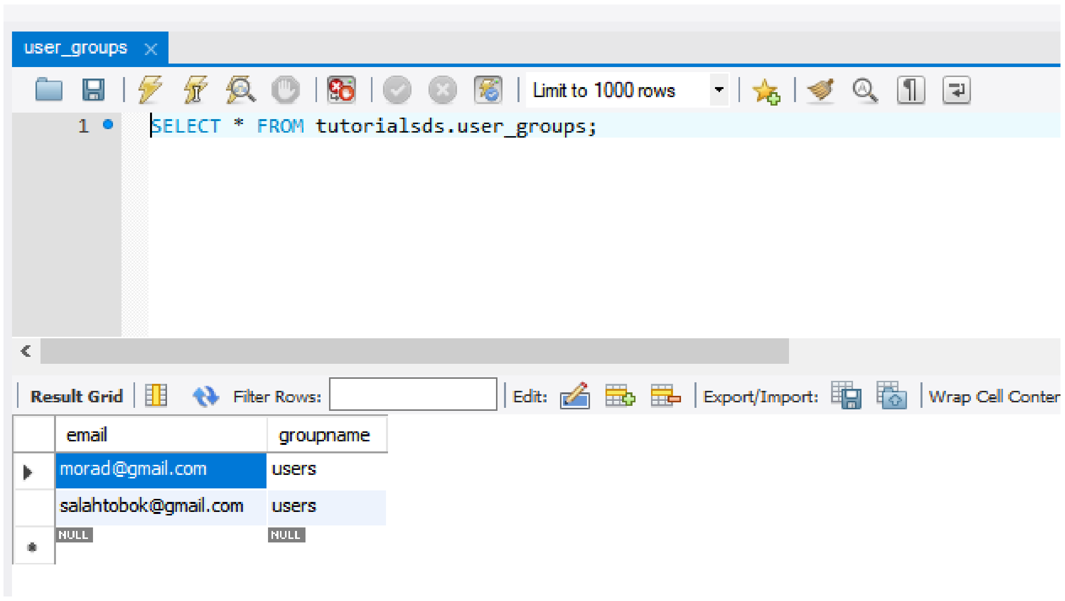
Sign in with your new account

33) Now check your database, you'll see the new records



```
SELECT * FROM tutorialsds.users;
```

email	name	password
morad@gmail.com	Morad	XohImNooBHFR0OVvjcYpJ3NgPQ1qq73WKhHvc...
salahtobok@gmail.com	salahtobok	5e884898da28047151d0e56f8dc6292773603d...
NULL	NULL	NULL



```
SELECT * FROM tutorialsds.user_groups;
```

email	groupname
morad@gmail.com	users
salahtobok@gmail.com	users
NULL	NULL

THANKS FOR READING.
BEST REGARD ,SALAHTOBOK .