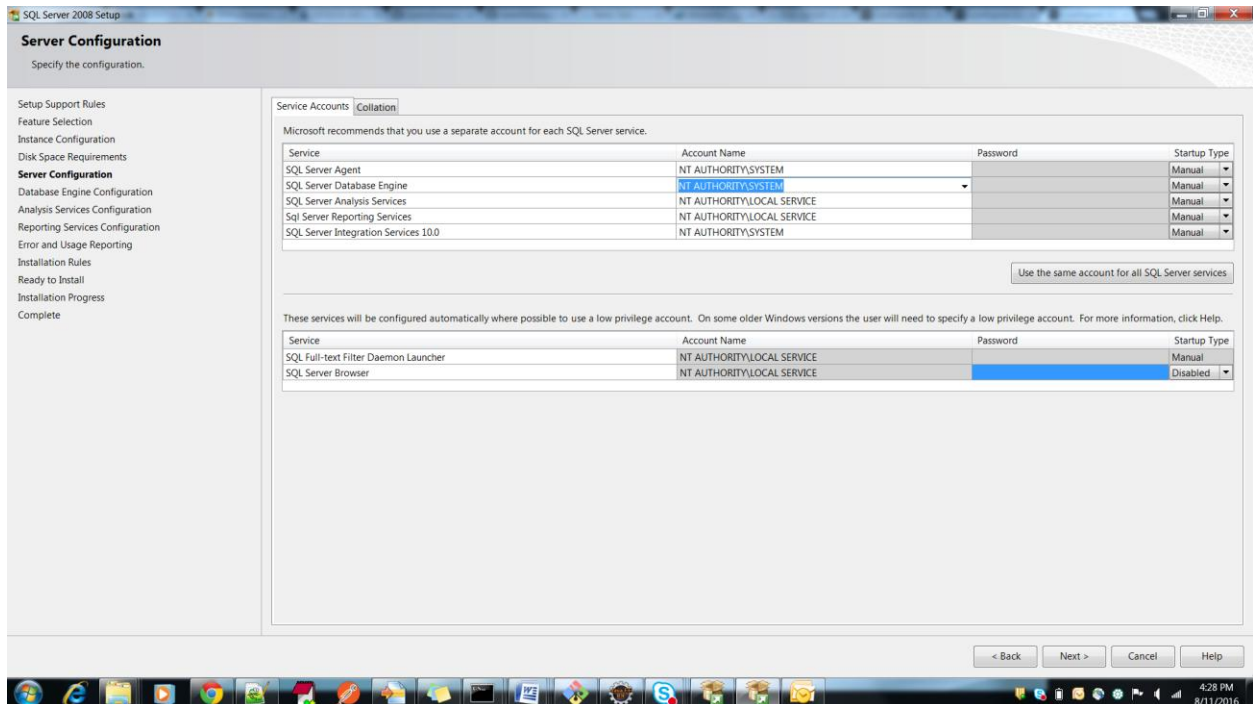As a first step to integrate OASP4J with MS SQL Server 2008, MS SQL Server 2008 has to be installed. Following are the snapshots of the configuration chosen during various stages of installation .
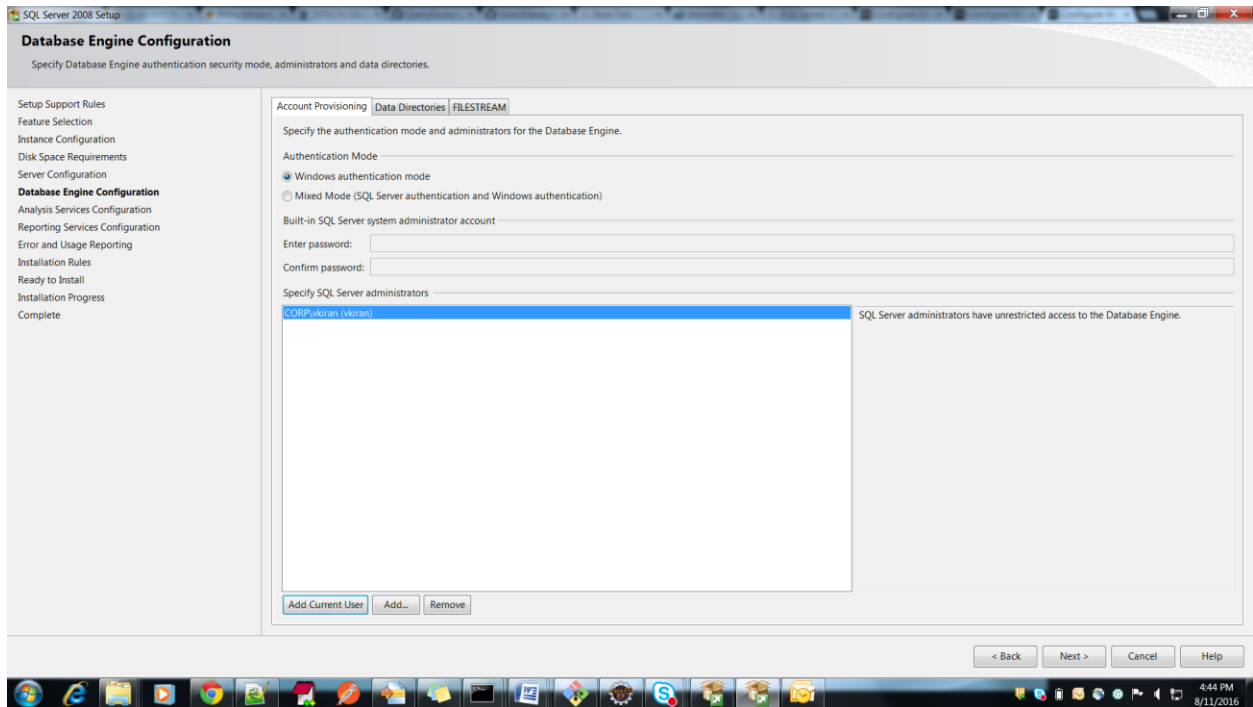
Note : One can ignore the following section if they are well versed with installation procedure of MS SQL Server.
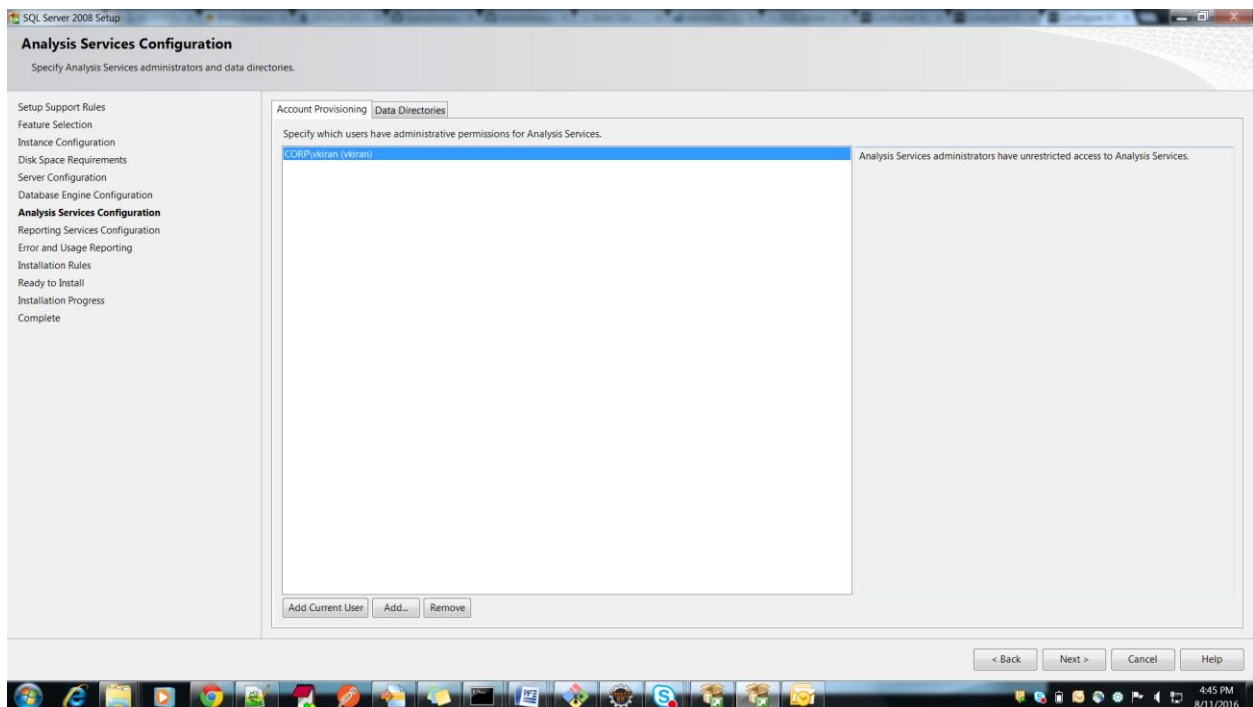
MSSQL Server 2008 Installation and Configuration :

- During installtion , at '**Server Configuration**' step, please see that the configuration chosen is as mentioned in the screenshot below and click on **Next** button.
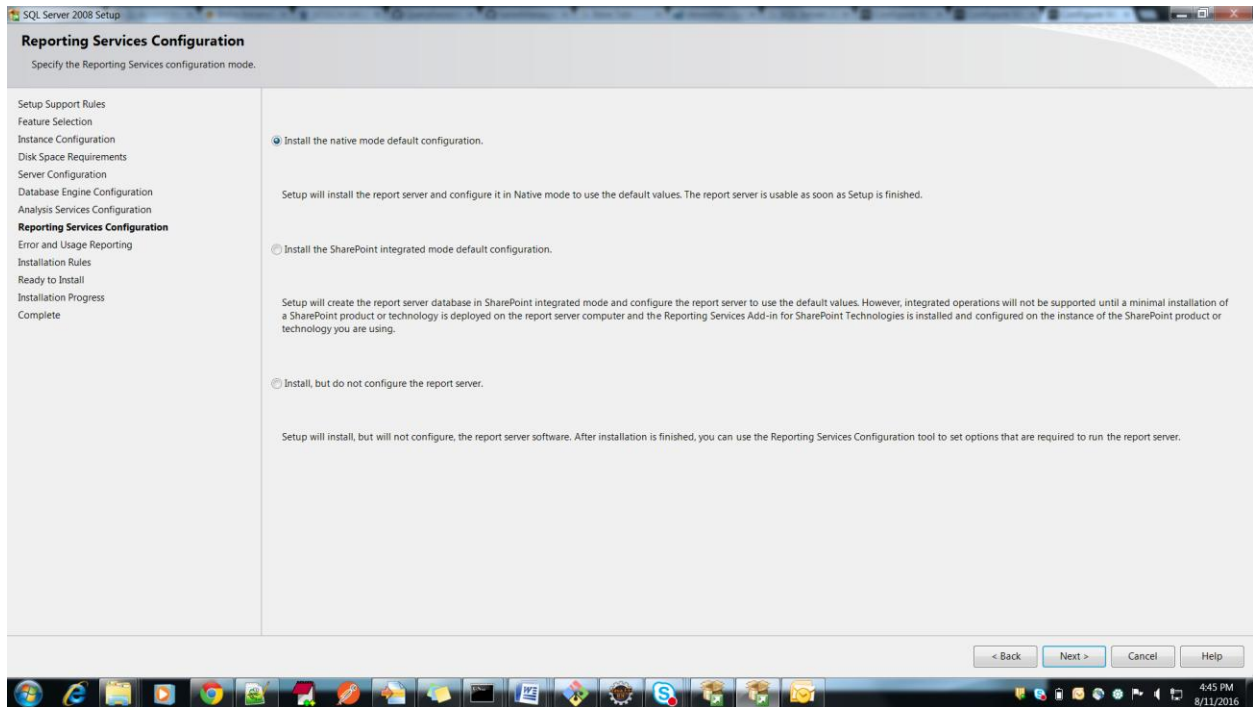

- In the next step, '**Database Engine Configuration**, please choose the configuration as mentioned in the screenshot below and click on **Next** button.
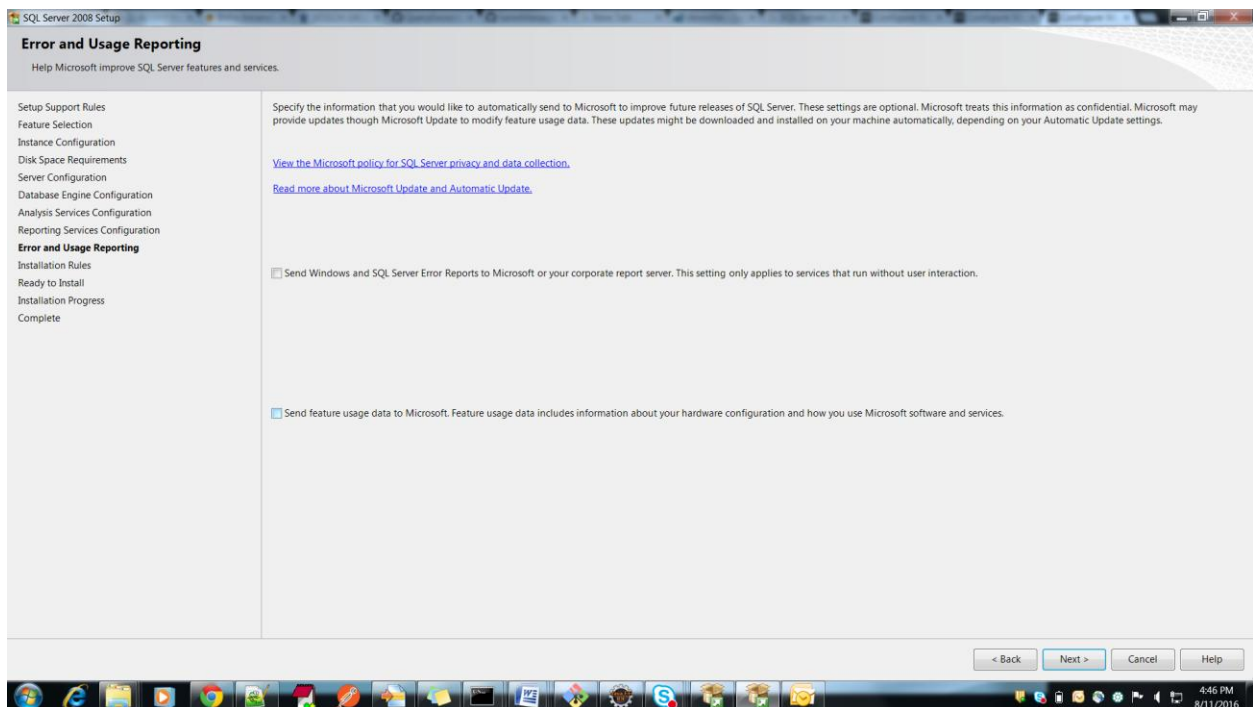
- In the next step, '**Analysis Services Configuration**, please choose user that has Administration permissions and click on **Next** button.

In the next step, '**Reporting Services Configuration**, please choose configuration as mentioned in the screen below and click on '**Next**' button.

In the next step, '**Error and Usage Reporting**, please choose configuration as mentioned in the screen below and click on '**Next**' button.

After the step, '**Error and Usage Reporting**', one can select the default configuration in the steps that follow and complete the installation.

DBIntegration – Disabling MSSQL Server 2008 and enabling h2 Database

- Comment column annotation for 'user' attribute in oasp4j-jpa-envers/src/main/java/io/oasp/module/jpa/dataaccess/api/AdvancedRevisionEntity.java. Below is the commented code for reference

```
/** @see #getUser() */
/** Comment the following line completely (Column Annotation) in case of database
other than MS SQL Server 2008 */
/* @Column(name = "[user]") */
private String user;
```

- Comment the dependency for MSSQLServer 2008 jdbc driver in oasp4j-sample-core/pom.xml. Commented code below

```xml
<!--
    <dependency>
        <groupId>com.microsoft.sqlserver</groupId>
        <artifactId>sqljdbc</artifactId>
        <version>4.0</version>
    </dependency>
-->
```

- Uncomment the query to retrieve ids from Bill table for **payed=true** in oasp4j-sample-core/src/main/resources/META-INF/orm.xml and comment the one that exists for MS SQL Server. Uncommented code below.

```xml
<named-native-query name="get.all.ids.of.payed.bills">
    <query><![CDATA[SELECT id FROM Bill WHERE payed =
    true]]></query>
</named-native-query>
```

- Rename file V0001__R001_Create_schema_MSSQL.sql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0001__R001_Create_schema_MSSQL.sql.mssql

- Rename file V0002__R001_Master_data_MSSQL.sql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0002__R001_Master_data_MSSQL.sql.mssql

- Rename file V0003__R001_Add_blob_table_and_data_MSSQL.sql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0003__R001_Add_blob_table_and_data_MSSQL.sql.mssql

- Rename file V0004__R001_Add_batch_tables_MSSQL.sql.sql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0004__R001_Add_batch_tables_MSSQL.sql.mssql

- Uncomment the spring active profile **h2mem** and comment the spring active profile **mssql** in oasp4j-sample-core/src/main/resources/application.properties

- Uncomment the line that has spring active profile **junit** and comment the line has spring active profiles **junit** and **mssql** separated by comma in the file oasp4j-sample-core/src/test/resources/config/application.properties

- Rename file V9001_1__Delete_data_MSSQL.sql in oasp4j-sample-core/src/test/resources/AllTests/setup/db to V9001_1__Delete_data_MSSQL.sql.mssql

- Rename file V9901_1__Import_data_MSSQL.sql in oasp4j-sample-core/src/test/resources/ BillExportJobTest/setup/db to V9901_1__Import_data_MSSQL.sql.mssql

- Rename file V0001__R001_Create_schema_MSSQL.sql in oasp4j-sample-core/src/test/resources/db/tablemanagement to V0001__R001_Create_schema_MSSQL.sql.mssql

- Rename V0002__R001_Master_data_MSSQL.sql in oasp4j-sample-core/src/test/resources/db/tablemanagement to V0002__R001_Master_data_MSSQL.sql.mssql

DBIntegration – Enabling MSSQL Server 2008 and disabling h2 Database

- UnComment column annotation for 'user' attribute in oasp4j-jpa-envers/src/main/java/io/oasp/module/jpa/dataaccess/api/AdvancedRevisionEntity.java. Below is the uncommented code for reference

```
/** @see #getUser() */
/** UnComment the following line completely (Column Annotation) in case of database other than MS SQL Server 2008 */
@Column(name = "[user]")
private String user;
```

- Uncomment the dependency for MSSQLServer 2008 jdbc driver in oasp4j-sample-core/pom.xml. Dependency for MSSQLServer 2008 below

```
<dependency>
        <groupId>com.microsoft.sqlserver</groupId>
        <artifactId>sqljdbc</artifactId>
        <version>4.0</version>
</dependency>
```

- Uncomment the query to retrieve ids from Bill table for payed=1 in oasp4j-sample-core/src/main/resources/META-INF/orm.xml and comment the one for H2 Database. Uncommented code below.

  ```
  <named-native-query name="get.all.ids.of.payed.bills">
      <query><![CDATA[SELECT id FROM Bill WHERE payed =
      1]]></query>
  </named-native-query>
  ```

- In the file oasp4j-sample-core/src/main/resources/config/application-mssql.properties, please change the value of property 'spring.datasource.url'. Hostname, port and databaseName has to be changed accordingly. Change the values of the properties **'spring.datasource.username'** and '**spring.datasource.password**' as well accordingly.

- Rename file V0001__R001_Create_schema_MSSQL.sql.mssql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0001__R001_Create_schema_MSSQL.sql

- Rename file V0002__R001_Master_data_MSSQL.sql.mssql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0002__R001_Master_data_MSSQL.sql

- Rename file V0003__R001_Add_blob_table_and_data_MSSQL.sql.mssql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0003__R001_Add_blob_table_and_data_MSSQL.sql

- Rename file V0004__R001_Add_batch_tables_MSSQL.sql.mssql in oasp4j-sample-core/src/main/resources/db/migration/mssql to V0004__R001_Add_batch_tables_MSSQL.sql

- Comment the spring active profile **h2mem** and Uncomment the spring active profile **mssql** in oasp4j-sample-core/src/main/resources/application.properties

- Rename file V9001_1__Delete_data.sql in oasp4j-sample-core/src/ test/resources/AllTests/setup/db to V9001_1__Delete_data.sql.h2

- Rename file V9901_1__Import_data.sql in oasp4j-sample-core/src/ test/resources/ BillExportJobTest/setup/db to V9901_1__Import_data.sql.h2

- Rename file V0001__R001_Create_schema.sql in oasp4j-sample-core/src/ test/resources/db/tablemanagement to V0001__R001_Create_schema.sql.h2

- Rename V0002__R001_Master_data.sql in oasp4j-sample-core/src/ test/resources/db/tablemanagement to V0002__R001_Master_data.sql.h2

After following above instructions, make sure JUNITs are successful by running the command '**mvn clean install**' for oasp4j project.

Running sample application with Angular JS Client:

- Follow steps mentioned in https://github.com/oasp/oasp4js/wiki/tutorial-jspacking-angular-client .

Running sample application with Sencha Client:

- Follow steps mentioned in https://github.com/devonfw/devon/wiki/getting-started-deployment-on-tomcat .