

Oracle® Fusion Middleware

Installation Guide for ADF Mobile Transaction Replay Service

11g Release 1 (11.1.1.5.0)

E15492-02

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The ADF Mobile transaction replay service replays transactions that occur on the mobile device while it is disconnected. The ADF Mobile transaction replay service component is a critical component of ADF Mobile client and requires a separate installation.

The following sections provide information on installation, configuration, and uninstallation of ADF Mobile transaction replay service component:

- [Installing ADF Mobile Transaction Replay Service](#)
- [Configuring ADF Mobile Transaction Replay Service in Enterprise Manager](#)
- [Configuring ADF Mobile Transaction Replay Service in JDeveloper](#)
- [Uninstalling ADF Mobile Transaction Replay Service](#)

1 Installing ADF Mobile Transaction Replay Service

This release of ADF Mobile transaction replay service is tested and supported on specific versions of Windows and Linux.

1.1 System Requirements

Before you run the installer program, ensure that the prerequisites listed in [Table 1](#) are met.

Table 1 System Requirements

Component	Requirement
Operating System	<ul style="list-style-type: none">■ Windows XP or above■ Linux
JDK	Version 1.6 or above. Ensure that PATH is set to bin directory. Windows example: PATH = C:\JDK\bin Linux example: PATH = ...:/usr/java/jdk/bin
Database	Oracle Database 10.0.2.2 or above, installed with privilege to create new schema.
JDeveloper	Oracle JDeveloper 11.1.1.x.x or above.

Table 1 (Cont.) System Requirements

Component	Requirement
Application Server	WebLogic Server 10.0.3 or above, installed with a JRF extension domain.
Enterprise Manager	Enterprise Manager Fusion Middleware Control. Create a domain with Enterprise Manager and install JRF extension. For more information about Fusion Middleware Control, see the <i>Oracle Application Server Administrator's Guide</i> .

1.2 Downloading the ADF Mobile Client Extension

The ADF Mobile transaction replay service is a part of the ADF Mobile Client JDeveloper Extension.

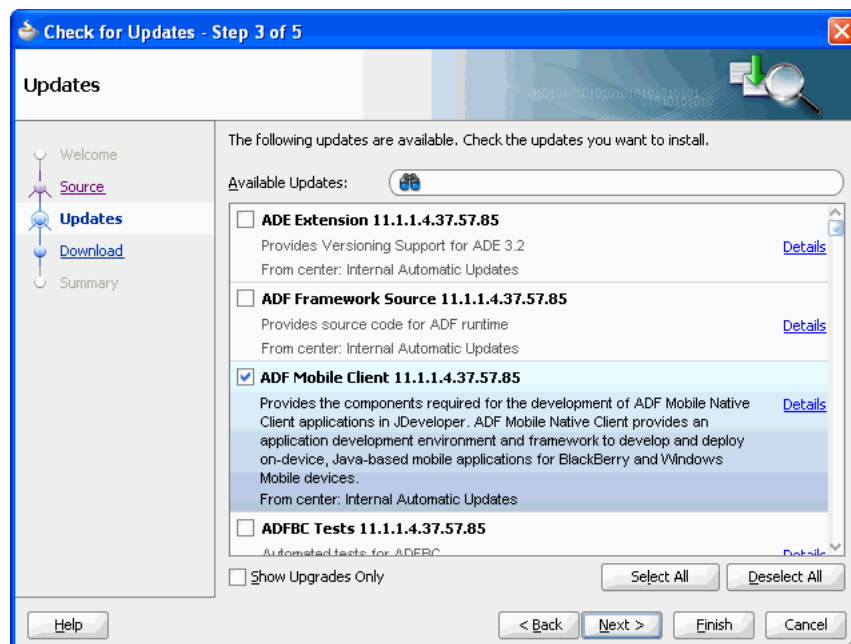
To download the ADF Mobile Client Extension:

1. Open JDeveloper.
2. From the **Help** menu, choose **Check for Updates**.
3. In the Welcome page of the Check for Updates wizard, click **Next** to continue.
4. In the Source page of the wizard, JDeveloper populates the list area with update centers available.

Click **Next** to continue.

5. In the Updates page of the wizard, JDeveloper populates the list area with available updates. After the list is populated, select the **ADF Mobile Client** checkbox, as shown in [Figure 1](#). Note that the version number of ADF Mobile Native Client might not be same as shown in [Figure 1](#).

Figure 1 JDeveloper Check for Updates Wizard



Click **Next** to continue.

6. In the Download page of the wizard, JDeveloper downloads the selected extension.

When the download is complete, click **Next** to continue.

7. The Summary page of the wizard, summarizes the downloaded extension.

Click **Finish** to close the wizard.

8. Restart JDeveloper.

After JDeveloper restarts, the following ADF Mobile transaction replay service files are added to <MW_HOME>/jdeveloper/trs, where MW_HOME is the Middleware Home directory.

- trs_template.jar
- \lib\trs_ejb.jar
- \security\README.txt
- \security\test.jks
- \security\test_cwallet.sso
- \db_scripts*
- other files and directories

1.3 Launching the Installer

To install the ADF Mobile transaction replay service component, you must use the WebLogic Configuration Wizard to extend your application's WebLogic domain. To extend the domain, use the ADF Mobile transaction replay service component's template file `trs_template.jar` available in the <MW_HOME>/jdeveloper/trs directory. If you are using Enterprise Manager to manage ADF Mobile transaction replay service, the template must be installed on a base domain that is created from Enterprise Manager Fusion Middleware Control.

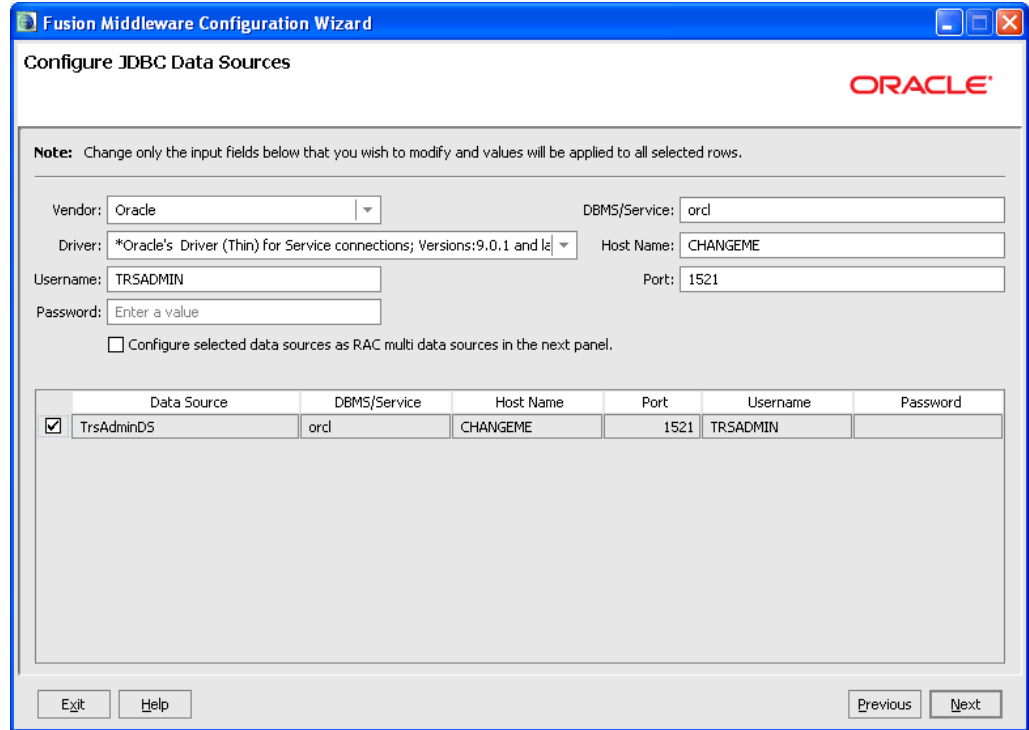
Before you proceed, ensure that you have administrative access to the database server used by the ADF Fusion web application. The installer creates and populates the database server with ADF Mobile transaction replay service schema.

To install the ADF Mobile Transaction Replay Service Component:

1. Open the Fusion Middleware Configuration Wizard. From the Windows **Start** Menu, choose **All Programs > Oracle Fusion Middleware 11.1.1.x.x > WebLogic Server 11gR1 > Tools > Configuration Wizard**.
2. In the Welcome page, choose **Extend an existing WebLogic domain**.
Click **Next** to continue.
3. In the Select a WebLogic Domain Directory page, browse and select the domain directory of your Fusion web application.
Click **Next** to continue.
4. In the Select Extension Source page, select **Extend my domain using extension template**. In Template Location, click **Browse** and select the `trs_template.jar` file <MW_HOME>/jdeveloper/trs directory.
Click **Next** to continue.

- In the Configure JDBC Data Sources page, verify that TrsAdminDS is the data source, as shown in Figure 2. Select the checkbox corresponding to TrsAdminDS row, and change the **Host Name**, **Username**, and **Password** to the location you want to deploy the TRS schema to. The data source could be, but is not required to be, the same database that the base Fusion web application is configured with.

Figure 2 Configure JDBC Sources page of Fusion Middleware Configuration Wizard



Click **Next** to continue.

- In the Test JDBC Data Sources page, click **Test Connection** to verify the JDBC options you specified in the Configure JDBC Data Sources screen. After the connection is successful, a `Test Successful!` message appears in the Connection Result Log area.

Click **Next** to continue.

- In the Run Database Scripts page, click **Run Scripts** to populate the schema with tables and records. After the scripts run successfully, a `Database Load Successful!` message appears in the Results area. If you want to create a log file, select the **Log File** checkbox and specify the log file's location.

Click **Next** to continue.

- In the Select Optional Configuration page, if required, select desired options.

Click **Next** to continue.

- In the Configuration Summary screen, verify your settings that you have configured in the previous pages.

Click **Extend** to extend the domain.

- In the Creating Domain page, click **Done** to close the wizard.

11. Start Oracle WebLogic Server.

2 Configuring ADF Mobile Transaction Replay Service in Enterprise Manager

You can configure the ADF Mobile transaction replay service component from Enterprise Manager Fusion Middleware Control. Note that Enterprise Manager is not required for configuring ADF Mobile transaction replay service, but it provides a user interface for administrative tasks such as adjusting log levels, change MBean variables and configure credential stores. For more information about Fusion Middleware Control, see the "Getting Started Using Oracle Enterprise Manager Fusion Middleware Control" section in the *Oracle Fusion Middleware Administrator's Guide*.

To configure the Dispatcher of ADF Mobile Transaction Replay Service Component:

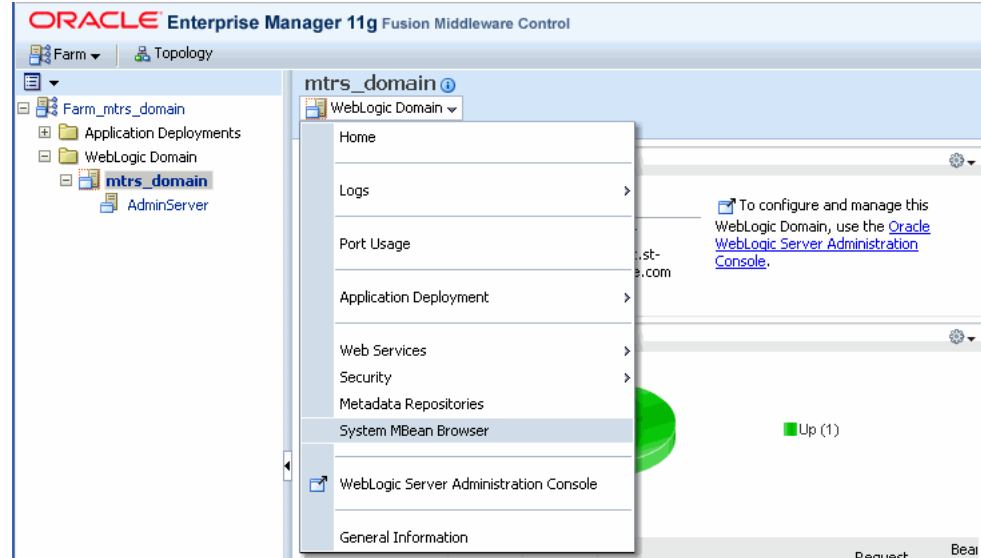
1. Open Enterprise Manager.

Navigate to the following URL and log in using the administrator username and password:

`http://<server_name:port>/em`

2. In the left panel of Enterprise Manager console, choose **Farm_your_domain > WebLogic Domain > your_domain**.
3. On the right panel, click **WebLogic Domain**, and choose **System MBean Browser** from the dropdown list, as shown in [Figure 3](#).

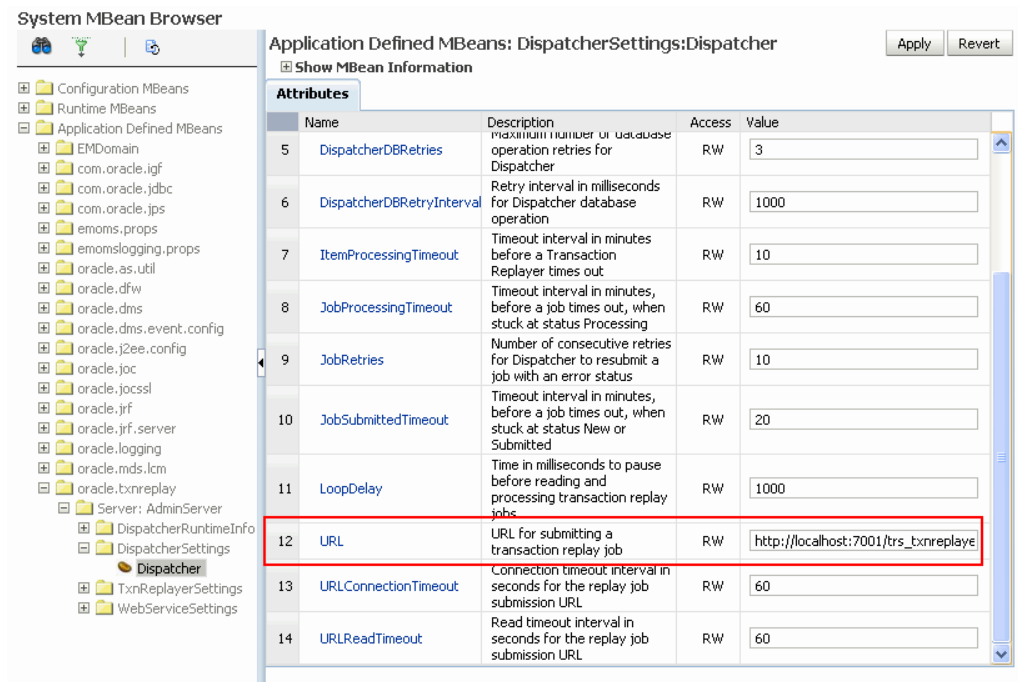
Figure 3 Enterprise Manager Fusion Middleware Control



4. In the left pane of the System MBean Browser page, select **Application Defined MBeans**.
5. Expand **Application Defined MBeans** and choose **oracle.txnreplay > Server:Admin Server > DispatcherSettings**.
6. In the Attributes page of Dispatcher, update the **URL** field to match the server's address and port number.

For example, `http://localhost:7001/trs_txnreplayer/workerservlet`, as shown in [Figure 4](#).

Figure 4 Dispatcher Attributes page



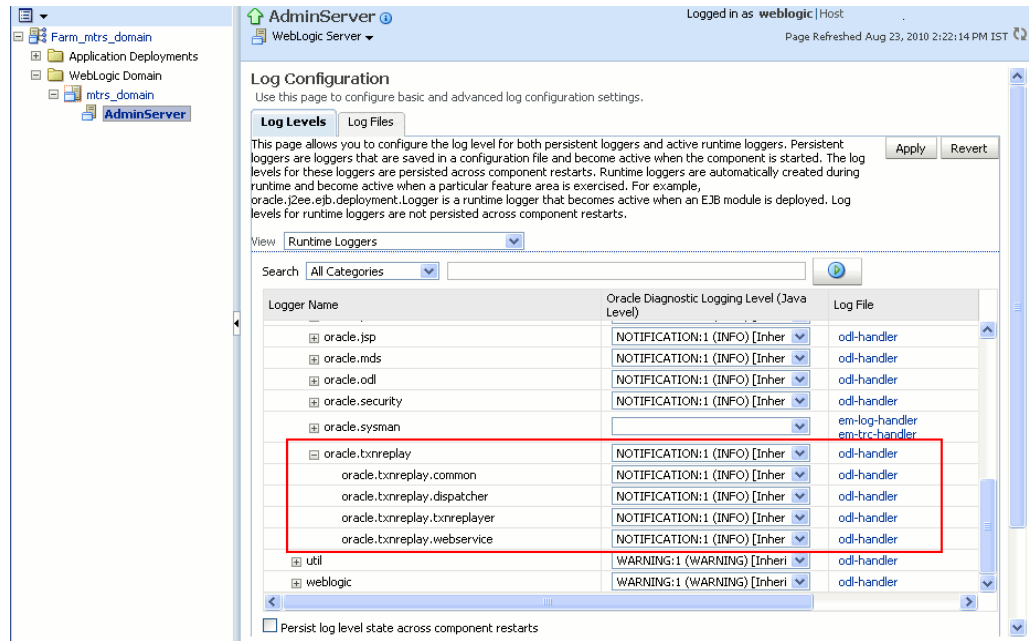
7. If required, configure the logging levels.
 - a. Navigate to the AdminServer page. In the left panel, choose **Farm_your_domain > WebLogic Domain > your_domain > AdminServer**.
 - b. In the right pane, open the **WebLogic Server** dropdown list. From the **Logs** submenu, choose **Log Configuration**.
 - c. In the Log Levels tab of Log Configuration page, adjust the following log levels, as shown in [Figure 5](#):

```

oracle.txnreplay.dispatcher
oracle.txnreplay.txnreplayer
oracle.txnreplay.webservice
oracle.txnreplay.common

```

Figure 5 Adjust Log Levels in Log Configuration page



d. When you are done, click **Apply**.

2.1 Configure Public Key Encryption for ADF Mobile Transaction Replay Service

The ADF Mobile transaction replay service establishes a mobile user's credential for authentication during replaying a replay item. The credential consists of a username and a password. The ADF Mobile transaction replay service relies on Public Key Encryption to secure passwords sent from a mobile device.

The ADF Mobile transaction replay service is packaged with a test keystore and a test certificate. A keystore is a database of keys. By default, the ADF Mobile transaction replay service uses the test certificate for public key encryption with a warning message Test certificate is used for public key encryption. This test certificate is provided for ease of set up in the application development stage

2.1.1 Configuring Key Password and Keystore Password

The ADF Mobile transaction replay service requires access to the keystore and the private key of the certificate. You must contact your administrator to create a keystore. The administrator can use the `keytool` utility that is distributed with the JDK to create and manage the keys and certificates in the Java keystore. For more information about Java keystore, see Java documentation.

Access to the keystore and the private key must be protected by passwords. You must configure the passwords in the credential store framework.

To configure passwords in the credential store

1. Open Enterprise Manager. Navigate to the following URL and log in using the administrator username and password:

```
http://<server_name:port>/em
```

2. In the left panel of Enterprise Manager console, choose **Farm_ your_domain > WebLogic Domain > your_domain**.
3. On the right panel, click **WebLogic Domain** to open the dropdown list. From the **Security** submenu, choose **Credentials**.
4. In the Credentials page, click **Create Map**. You must create a key map before you create a security key.

Enter a unique name for the key map in the Create Map popup window, and click **OK**.

5. Select the key map, and click **Create Key**.

In the Create Key popup window, enter the values in the fields, as described in [Table 3](#).

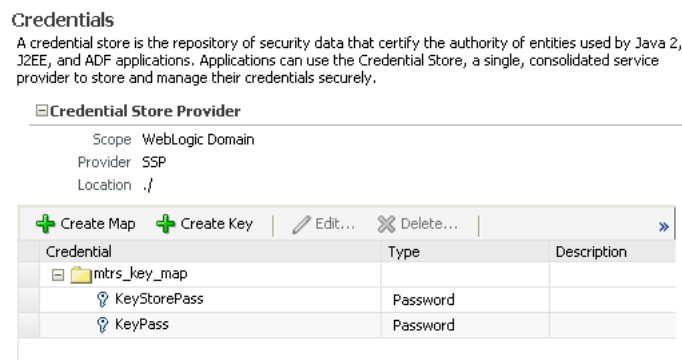
Table 2 Key Attributes

Field	Action
Select Map	Select the key map name you created in Step 4.
Key	Enter <code>KeyStorePass</code> as the key name.
Type	Select <code>Password</code> as the key type.
User Name	Enter the value set in the MBean attribute <code>KeystorePassCSFKey</code> from TxnReplayerSettings as described in Figure 6 . The default value is <code>KeyStorePass</code> .
Password	Enter a password of the keystore.
Description	Enter a description for the key, if desired.

6. Click **OK**.
7. Follow the process described in step 5 and create another key.
 - a. Set the value of field **Key** to `KeyPass`. For the field **User Name**, enter the value set in the MBean attribute `KeyPassCSFKey` from **TxnReplayerSettings** as described in [Figure 6](#). The default value is `KeyPass`.
 - b. In the **Password** field, enter the password for the private key.
 - c. Click **OK**.

The above configuration in Credentials page would look similar to [Figure 6](#).

Figure 6 Credentials page in Enterprise Manager console



2.1.2 Configuring Access to Credential Store Framework

For ADF Mobile transaction replay service to read the passwords from the credential store, you must grant permissions to `txnreplayer` and `webservice` components to read the `trs` credential store map. You configure the grants in the domain policy store.

To configure access to credential store framework:

1. Open the domain policy store file. The file is saved as `system-jazn-data.xml` in the `<DOMAIN_HOME>\config\fmwconfig` directory.

For example, if your Middleware Home directory is `D:\JDevMobile` and your domain name is `mtrs_domain`, then the domain policy store file is available in `D:\JDevMobile\user_projects\domains\mtrs_domain\config\fmwconfig`.

2. Verify the permissions set for `txnreplayer` and `webservice` components. The following code shows `txnreplayer` and `webservice` settings required to access credential store framework:

```
<grant>
  <grantee>
    <codesource>
      <url>
file:${domain.home}/servers/${weblogic.Name}/tmp/_WL_user/txnreplayer/-
      </url>
    </codesource>
  </grantee>
  <permissions>
    <permission>
      <class>
        oracle.security.jps.service.credstore.CredentialAccessPermission
      </class>
      <name>
        context=SYSTEM,mapName=trs,keyName=*
      </name>
      <actions>read</actions>
    </permission>
  </permissions>
</grant>
<grant>
  <grantee>
    <codesource>
      <url>
file:${domain.home}/servers/${weblogic.Name}/tmp/_WL_user/webservice/-
      </url>
    </codesource>
  </grantee>
  <permissions>
    <permission>
      <class>
        oracle.security.jps.service.credstore.CredentialAccessPermission
      </class>
      <name>
        context=SYSTEM,mapName=trs,keyName=*
      </name>
      <actions>read</actions>
    </permission>
  </permissions>
</grant>
```

2.1.3 Configuring Keystore URL, Keystore Type and Certificate Alias

As an administrator, you should configure keystore URL, keystore type and certificate alias to use the proper certificate.

To configure keystore URL, keystore type, and certificate alias:

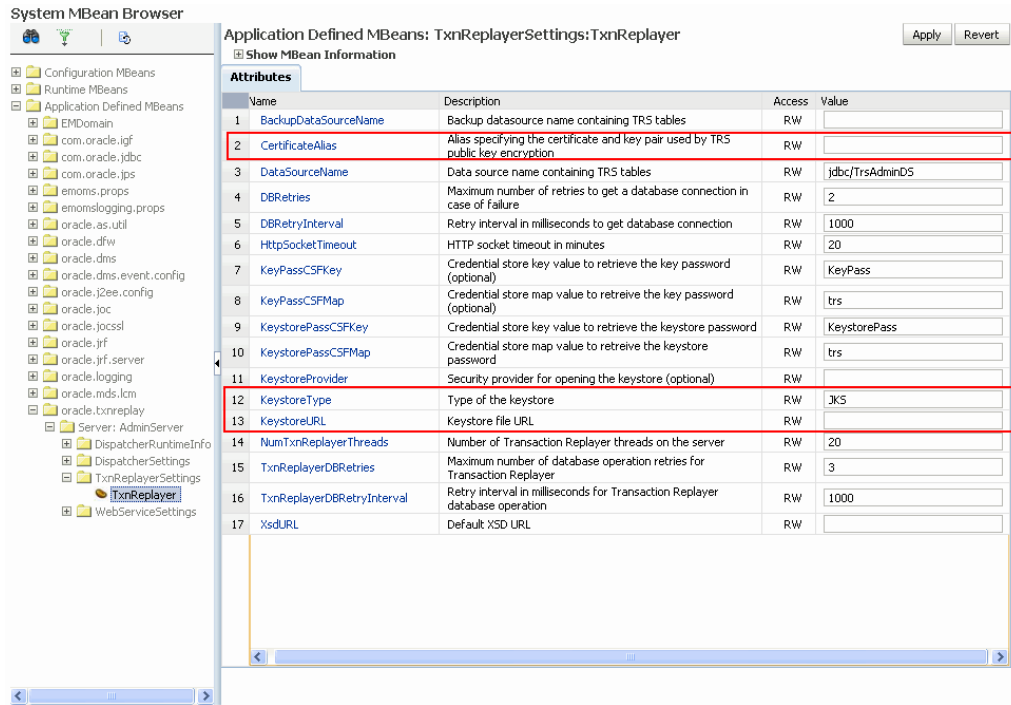
1. Open Enterprise Manager. Navigate to the following URL and log in using the administrator username and password:
`http://<server_name:port>/em`
2. In the left panel of Enterprise Manager console, choose **Farm_ your_domain > WebLogic Domain > your_domain**.
3. On the right panel, click **WebLogic Domain**, and choose **System MBean Browser** from the dropdown list.
4. In the left pane of the System MBean Browser page, select **Application Defined MBeans**.
5. Expand **Application Defined MBeans** and choose **oracle.txnreplay > Server:Admin Server >TxnReplayerSettings**, as shown in [Figure 7](#).

In the Attributes page of TxnReplayer, update the fields listed in [Table 3](#).

Table 3 TxnReplayer Attributes

Field	Value
CertificateAlias	Enter the certificate alias of the key pairs. The certificate alias is a simple name that is defined in the Java keystore file. For example, testTxn is a valid alias name.
KeyStoreType	JKS
KeyStoreURL	Enter the URL of keystore file. You can use the KeyStoreURL field to specify the path of the file, if the keystore file exists on the local host machine. For example, <code>file:///C:/JDevMobile/user_projects/test.jks</code> .

Figure 7 TxnReplayer Attributes page



6. Click **Apply**.
7. Again, in the left pane of the System MBean Browser page, select **Application Defined MBeans**.
8. Expand **Application Defined MBeans** and choose **oracle.txnreplay > Server:Admin Server > WebServiceSettings**.
9. In the WebService attributes page, add values for **CertificateAlias**, **KeyStoreType**, and **KeyStoreURL**, as described in step 5.
10. Click **Apply** when you are done.

3 Configuring ADF Mobile Transaction Replay Service in JDeveloper

You use JDeveloper to integrate the ADF Mobile transaction replay service component with the base ADF Fusion web application, and configure the ADF Mobile client application to use TRS.

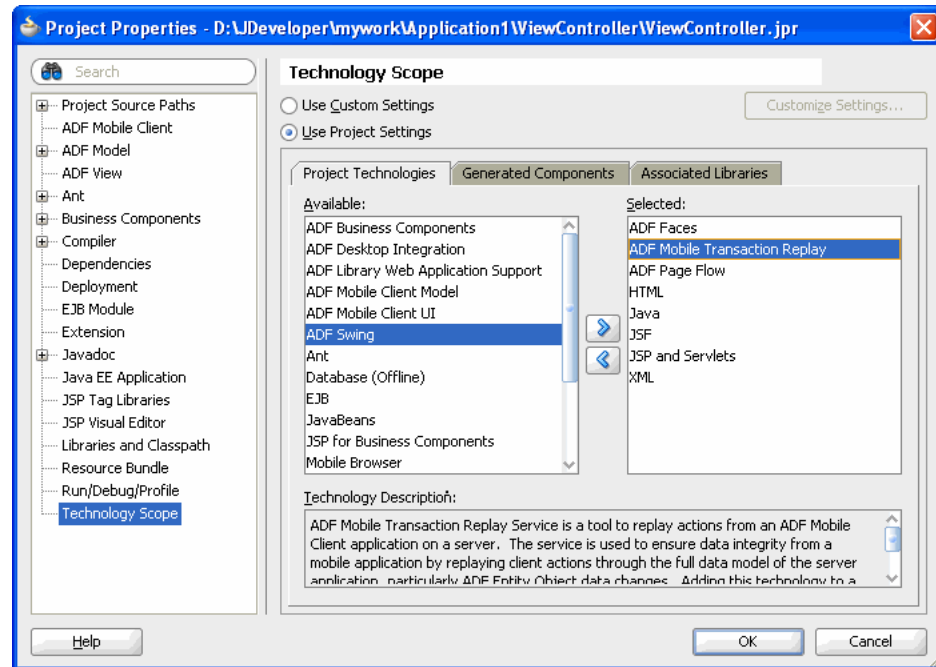
3.1 Integrate ADF Mobile Transaction Replay Service with ADF Fusion Web Application

You can integrate ADF Mobile transaction replay service with your ADF Fusion web application to allow the transaction replay service replay entity object events to the base application.

1. In JDeveloper, select your ViewController project in Application Navigator, right-click and choose **Project Properties**.

2. In the Project Properties dialog, select **Technology Scope** to view the list of available technologies.
3. Select the **ADF Mobile Transaction Replay** project technology from the **Available** list, and add it to the **Selected** list, as shown in [Figure 8](#).

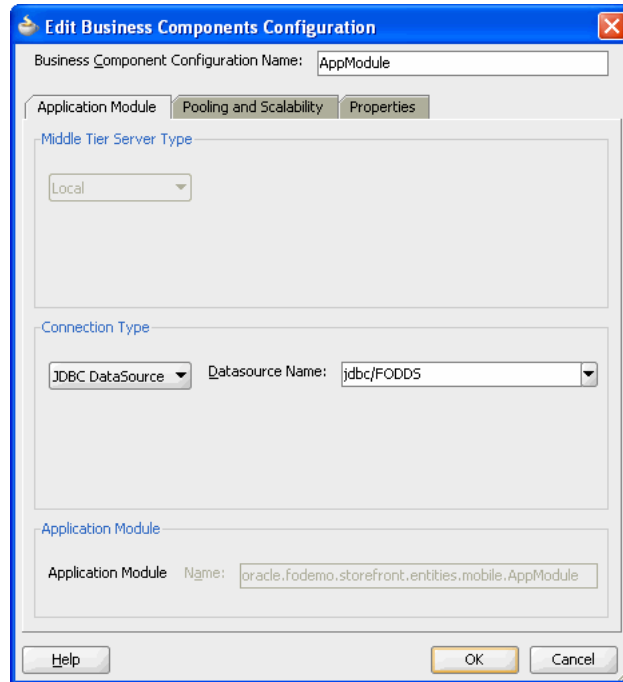
Figure 8 Project Properties dialog



4. Click **OK** to close the Project Properties dialog.
5. In your Fusion web application, find and configure the target application module for the mobile replay.
 - a. Select the target application module in Application Navigator, right-click and choose **Configurations**.
 - b. In the Manage Configurations dialog, click **New** to create a local application module configuration, if one does not already exist.

In the Edit Business Components Configuration dialog, ensure that the data source name matches the JNDI name after deployment. For example, use `jdbc/FODDS` instead of `java:comp/env/jdbc/FODDS`, as shown in [Figure 9](#).

Figure 9 Edit Business Components Configuration dialog



6. Redeploy the application.

3.2 Creating Transaction Replay Type

You use the Enable TRS for ADF Mobile Client Application wizard to configure the ADF Mobile client application to enable the use of ADF Mobile transaction replay service. Before you proceed, ensure that the ADF Mobile application has entity object definitions from an ADF library file.

1. In JDeveloper, select the Model project of your ADF Mobile application. Right-click and choose **Project Properties**.
2. In the Project Properties dialog, select **ADF Mobile Client**.
3. In the ADF Mobile Client page, click **Configure Transaction Replay Service** link to open the Enable TRS for ADF Mobile Client Application wizard.
4. In the TRS Schema page of the wizard, specify the IDE connection. If not created, click the **Add** icon to create a new database connection.
Click **Next** to continue.
5. In the Replay Type page of the wizard, enter the replay type information, or accept the default values.
 - **Type Name:** Enter a unique name for the replay type.
 - **Application Module Name:** Enter the name of the application module of the base Fusion web application. Ensure that it matches the package name of the Application Module in the base Fusion web application library.
 - **Application Module Configuration Name:** Enter the configuration name of the base Fusion web application module.

- **Type Properties:** Enter additional properties for the replay type using name-value pairs. This will contain the `ReplayServletURL`—the URL to the replay servlet set up by adding the ADF Mobile Transaction Replay technology to the base application.
- **Password Type:** Select the password type from the dropdown list.
- **Credential Store Map Name:** If you choose **Oracle Credential Store Framework** as the password type, enter the name of the map.

Click **Next** to continue.

6. In the Entity Objects page of the wizard, select the entity objects designated for transaction replay service. Note that in most circumstances, you would be using TRS for all entity objects.

Click **Next** to continue.

7. In the Summary page of the wizard, review the information, and click **Finish** to close the wizard.
8. Click **OK** to close the Project Properties dialog.

For more information about enabling transaction replay service, see the "Enabling MTRS for an ADF Application" section in the *Oracle Fusion Middleware Mobile Client Developer's Guide for Oracle Application Development Framework*.

4 Uninstalling ADF Mobile Transaction Replay Service

Uninstall the ADF Mobile transaction replay service to remove its components from the Oracle WebLogic Server.

To uninstall the ADF Mobile Transaction Replay Service Component:

1. Open Oracle WebLogic Server Administration Console.
2. In the Deployments page, select the following checkboxes:
 - **dispatcher**
 - **txnreplayer**
 - **webservice**

[Figure 10](#) shows the Deployments page with the **dispatcher** service. Note that the above services might not be available in the same page of Oracle WebLogic Server Administration Console. In such a case, select each file individually and repeat step 3 for each of the above services.

Figure 10 Uninstall ADF Mobile Transaction Replay Service Components

Summary of Deployments

Control Monitoring

This page displays a list of Java EE applications and stand-alone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Customize this table

Deployments

Install Update Delete Start Stop Showing 1 to 10 of 28 Previous Next

<input type="checkbox"/>	Name	State	Health	Type	Deployment Order
<input type="checkbox"/>	adf.oracle.domain(1.0,11.1.1.2.0)	Active		Library	100
<input type="checkbox"/>	adf.oracle.domain.webapp(1.0,11.1.1.2.0)	Active		Library	100
<input type="checkbox"/>	dispatcher	Active	OK	Enterprise Application	100
<input type="checkbox"/>	DMS Application (11.1.1.1.0)	Active	OK	Web Application	5
<input type="checkbox"/>	em	Active	OK	Enterprise Application	400
<input type="checkbox"/>	emai	Active		Library	100
<input type="checkbox"/>	emas	Active		Library	100
<input type="checkbox"/>	emcore	Active		Library	100
<input type="checkbox"/>	FMW Welcome Page Application (11.1.0.0.0)	Active	OK	Enterprise Application	5
<input type="checkbox"/>	jsf(1.2,1.2.9.0)	Active		Library	100

Install Update Delete Start Stop Showing 1 to 10 of 28 Previous Next

3. Click **Delete** to remove the ADF Mobile transaction replay service files.
4. When you are done, log out from Oracle WebLogic Server Administration Console.

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E15492-02

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