



TEMENOS™

# TAFJ-AS WeblogicInstall v10.3/12.1.X R14/R15

10/3/2015

Temenos



Information in this document is subject to change without notice.

No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of TEMENOS Holdings NV.

**Amendment History:**

<b>Revisio n</b>	<b>Date Amended</b>	<b>Name</b>	<b>Description</b>
11	1 <sup>st</sup> April 2011	TAFJ team	Initial version
12	7 <sup>st</sup> February 2012	H. Aubert	R12GA review
13	15 <sup>th</sup> January 2013	JN. Charpin	R13GA review
14	9/11/2013	R. Vincent	Add Appendix
15	2/3/2014	R. Vincent	R14GA review
16	21 <sup>th</sup> February 2014	JN. Charpin	Foreign JMS server configuration
17	27 <sup>th</sup> March 2014	JN. Charpin	Servlet review
18	1 <sup>st</sup> May 1, 2014	JN. Charpin	12.1.1 patch for MDB
19	26 <sup>th</sup> June, 2014	R. Vincent	Add section "Setting up Weblogic Http Channels"
20	29 <sup>th</sup> August, 2014	JN. Charpin	12.1.3 support
21	29 <sup>th</sup> September, 2014	R. Vincent	Added notes for 12.1.3 support
22	5 <sup>th</sup> February 2015	JN.Charpin	Memory - JVM settings for UAT / Production env.
23	23 <sup>th</sup> February 2015	JN.Charpin	Classpath setup - cluster
24	9 <sup>th</sup> March 2015	H. Aubert	R15 AMR review
25	13 <sup>th</sup> March 2015	G.Gowrimani	MSSQL datasource addition
26	7 <sup>th</sup> April 2015	JN Charpin	JDBC driver review



## Copyright

Copyright (c) 2014 TEMENOS HOLDINGS NV  
All rights reserved.

This document contains proprietary information that is protected by copyright. No part of this document may be reproduced, transmitted, or made available directly or indirectly to a third party without the express written agreement of TEMENOS UK Limited. Receipt of this material directly from TEMENOS UK Limited constitutes its express permission to copy. Permission to use or copy this document expressly excludes modifying it for any purpose, or using it to create a derivative therefrom.

## Errata and Comments

If you have any comments regarding this manual or wish to report any errors in the documentation, please document them and send them to the address below:

Technology Department

Temenos Headquarters SA  
2 Rue de l'Ecole-de-Chimie,  
CH - 1205 Geneva,  
Switzerland

Tel SB: +41 (0) 22 708 1150  
Fax: +41 (0) 22 708 1160

Please include your name, company, address, and telephone and fax numbers, and email address if applicable. [TAFJdev@temenos.com](mailto:TAFJdev@temenos.com)

# Table of Contents

Copyright.....	3
Errata and Comments.....	3
T24 Java deployment in Weblogic v10.3/12.1.x. standalone.....	6
Infrastructure.....	6
Weblogic v10.3/12.1.x standalone installation.....	7
Application Server installation.....	7
Prerequisite.....	7
12.1.1 Specific configuration.....	7
12.1.2 / 12.1.3 Specific configuration.....	8
Domain installation.....	9
Weblogic 12.1.1 – Patch.....	15
Verification and startup.....	16
Setup Weblogic property file.....	17
Environment configuration.....	17
Setup weblogic script.....	17
UAT / Production Memory setting.....	19
Weblogic script configuration (single server) for T24 java deployment.....	21
Setup properties.....	21
Generate password for datasource.....	23
BROWSER Application.....	23
One step configuration.....	24
Execute One step configuration.....	24
Multiple steps configuration.....	25
Creating JMS Connection Factories.....	25
JMS resources configuration.....	28
Create JMS queues/Topic for T24:.....	28
Configuring a remote JMS provider.....	29
JDBC resources configuration.....	33
(Special Note) Using the JDBC Locking Mechanism.....	33
Known issues – Driver mismatch (Applies to 12.1.3 and perhaps before).....	36
Setup TAFJ_HOME in Weblogic.....	37
TAFJ Application deployment.....	39



---

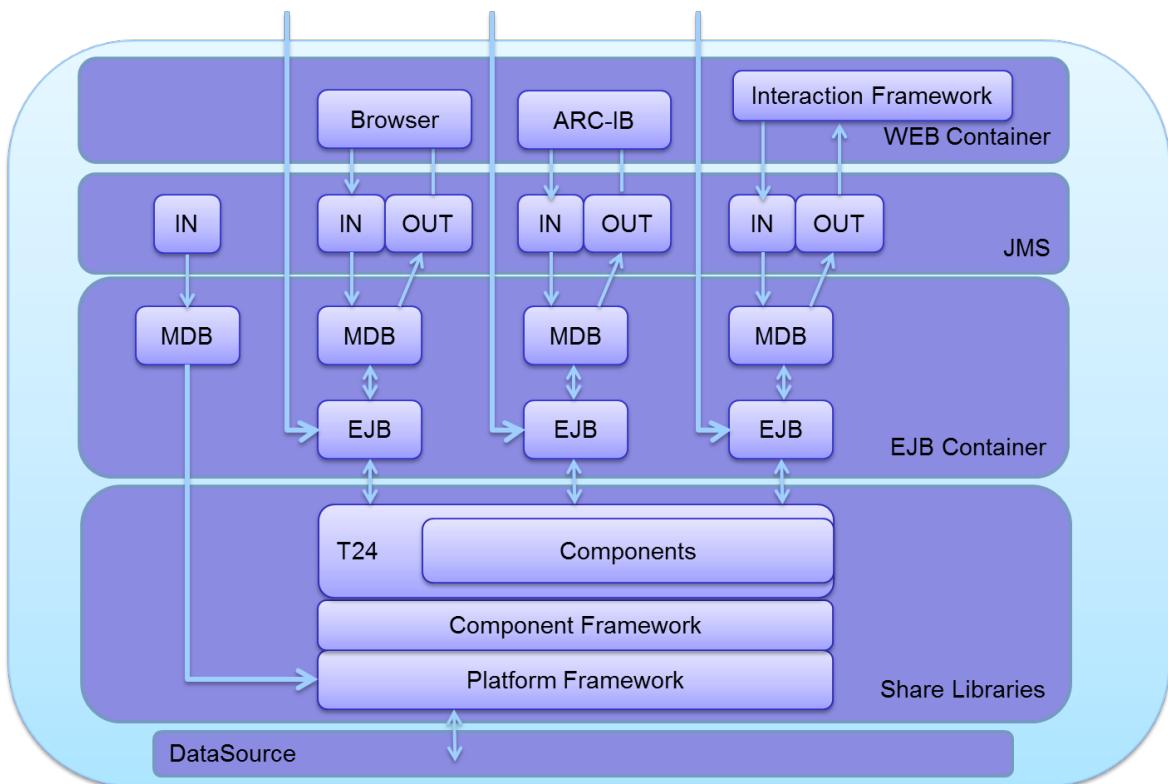
Deploy TAFJJEE_EAR.ear file.....	39
TAFJJEE Application.....	40
tDiag Servlet.....	41
tShow Servlet.....	42
Execute Servlet.....	43
Other TAFJEE functionalities.....	43
Browser deployment.....	44
Deploying BrowserWeb.war.....	44
Launch a COB (cluster mode too).....	45
Weblogic script configuration (cluster) for T24 java deployment.....	46
Setting up Distributed Queues.....	46
Script Mode:.....	46
Console Mode:.....	46
Setting up a Grind Link Datasource.....	48
Setting Up each node so that TAFJEE.ear can be deployed to the cluster.....	50
Load Balancing.....	52
Setting Up t24ExecQueue for multi-node.....	53
Creating a new Connection Factory for t24ExecQueue called t24ConnectionFactory....	53
Setting up TSA.SERVICE for multi-node COB.....	56
Appendix.....	60
Analyzing MBeans with jConsole.....	60
Setting up Weblogic Http Channels.....	60
Setting up Weblogic with MQ Series.....	61

---



## T24 Java deployment in Weblogic v10.3/12.1.x. standalone

### Infrastructure



This step by step process document will install this infrastructure but without TOCF, ARC-IB, NEO and Monitor.



## Weblogic v10.3/12.1.x standalone installation

### Application Server installation.

For detailed information please refers to Oracle weblogic official documentation. The following is a good line:

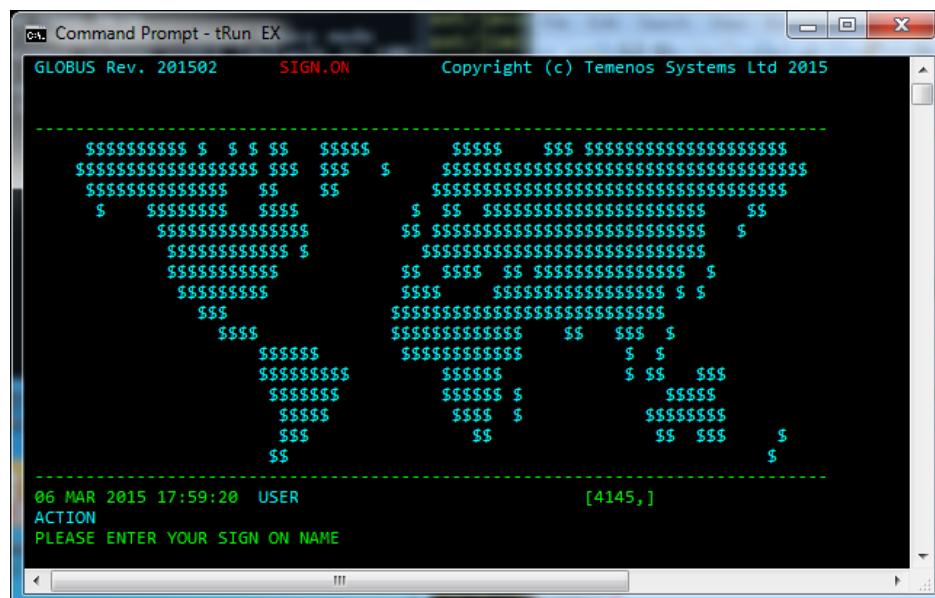
<http://www.oracle.com/technetwork/middleware/weblogic/documentation/index.html>

### Prerequisite

TAFJ has to be installed in a folder that we call in the document **TAFJ\_HOME**.

T24 precompiled jar files have to be in a folder that we call in the document **T24\_HOME**.

Before configure The application Server with TAFJ/T24, check your standalone installation is working.



### 12.1.1 Specific configuration

Please note that once you have installed weblogic server, you will need to apply a patch when running Weblogic version **12.1.1**, refer to the section below "Weblogic 12.1.1 patch".

### **12.1.2 / 12.1.3 Specific configuration**

Since weblogic server 12.1.2, there is no JDK embedded with the installation. Please refer to the README.txt in the install home folder and to the oracle certification matrix.

**These versions of WLS require JDK 1.7 as a minimum.**

i.e.

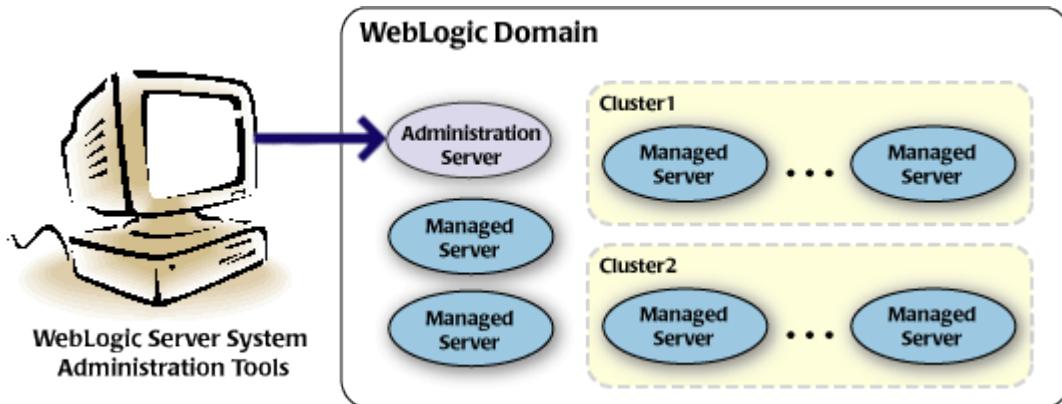
<http://www.oracle.com/technetwork/middleware/ias/downloads/fusion-certification-100350.html>

Oracle WebLogic Server			FMW 12.1.2.0.0				
Linux x86	Red Hat Enterprise Linux 5	Update	6+	32	32	Oracle JDK	1.7.0_15+
Microsoft Windows (32-bit)	7	Service Pack	1+	32	32	Oracle JDK	1.7.0_15+

Oracle WebLogic Server			FMW 12.1.3.0.0				
Linux x86-64	Red Hat Enterprise Linux 5	Update Level	6+	64	64	Oracle JDK	1.7.0_51+
Microsoft Windows x64 (64-bit)	7	Service Pack	1	64	64	Oracle JDK	1.7.0_51+

## Domain installation

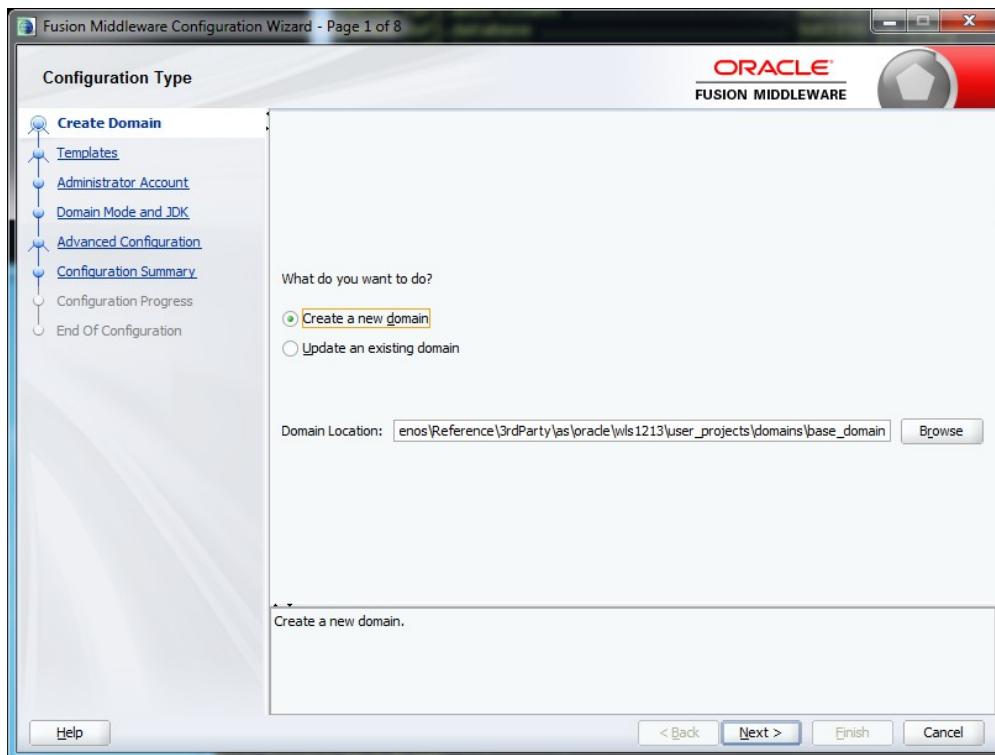
A domain is the basic administration unit of WebLogic Server. It consists of one or more WebLogic Server instances, and logically related resources and services that are managed, collectively, as one unit.



As shown in figure, the basic domain infrastructure consists of one Administration Server and optional managed servers and clusters.

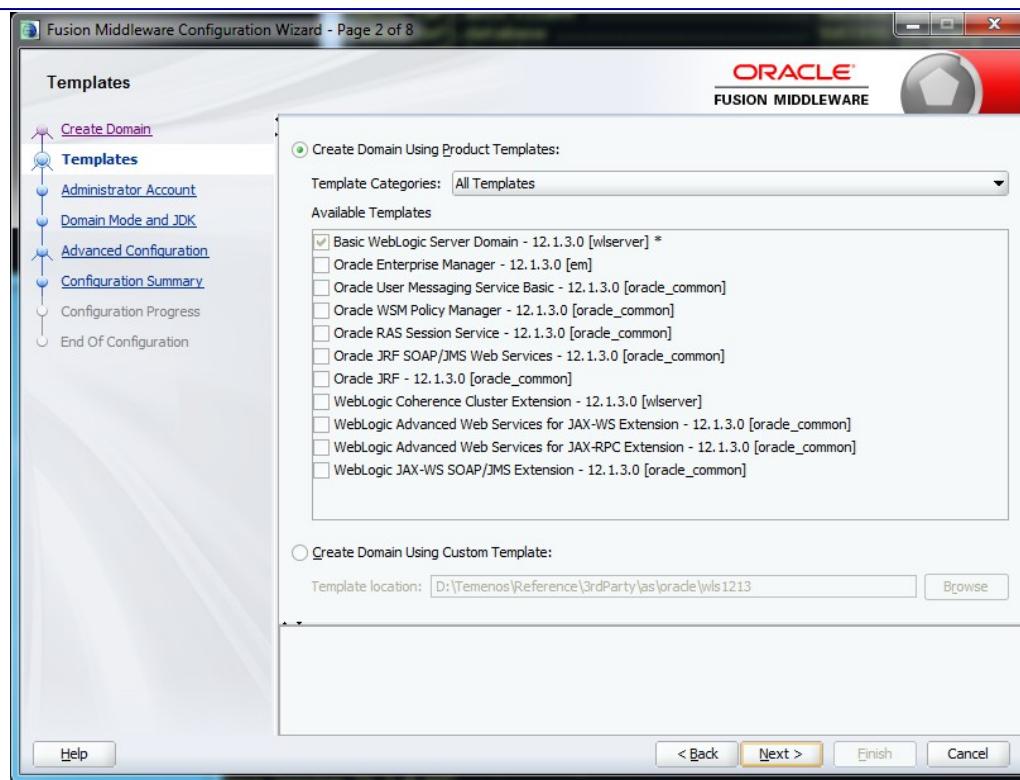
Launch the Configuration Wizard:

Click on “Create a new Weblogic domain”

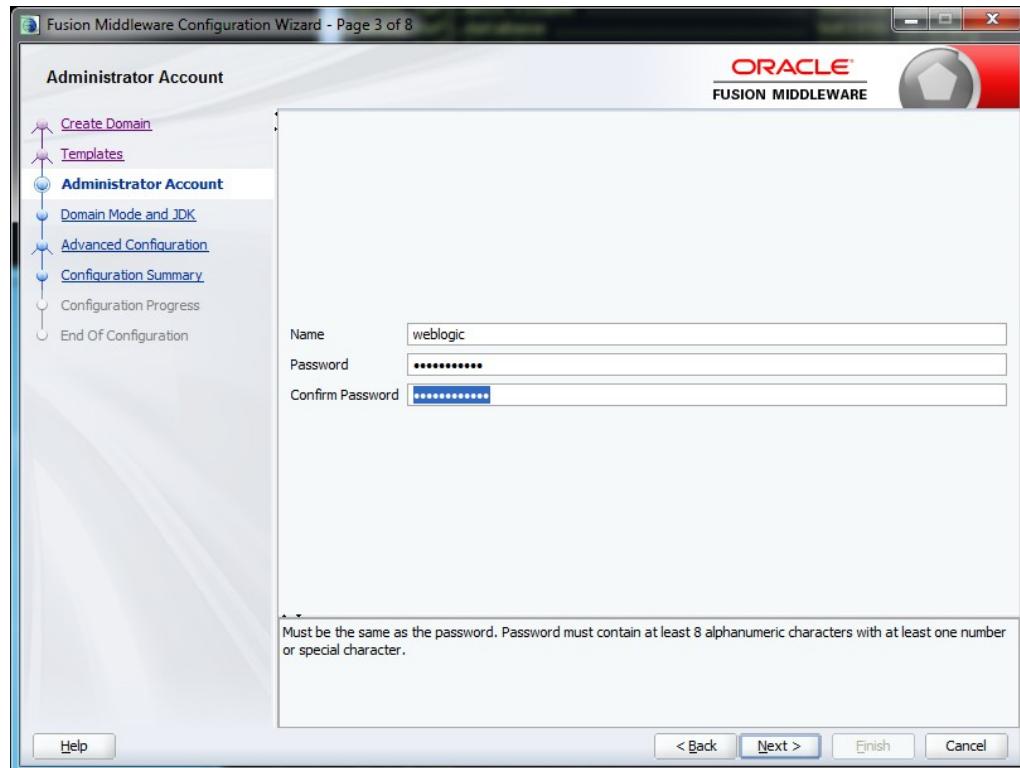


The domain name will be based on your location. Default : base\_domain

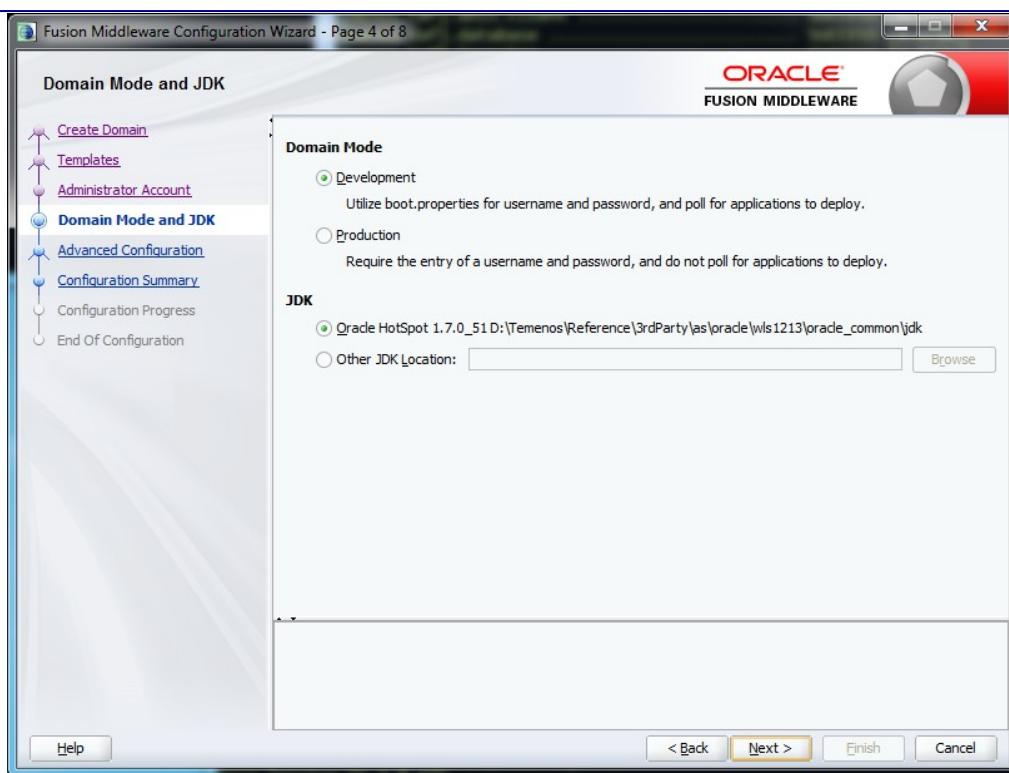
Click on next



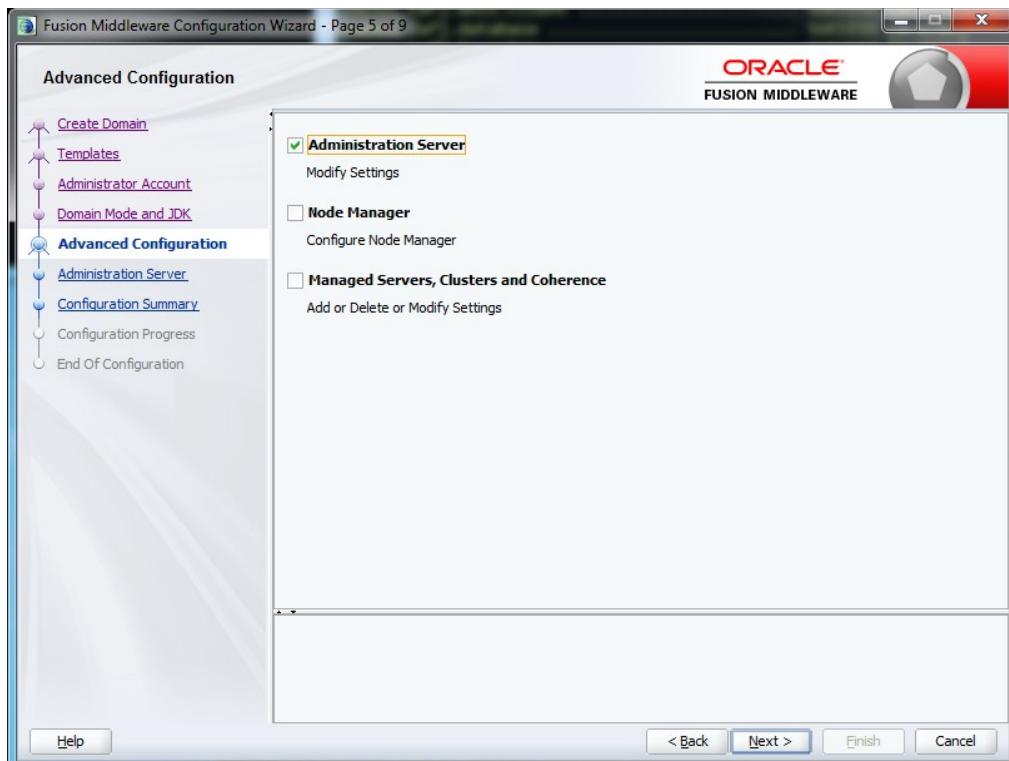
Click on next



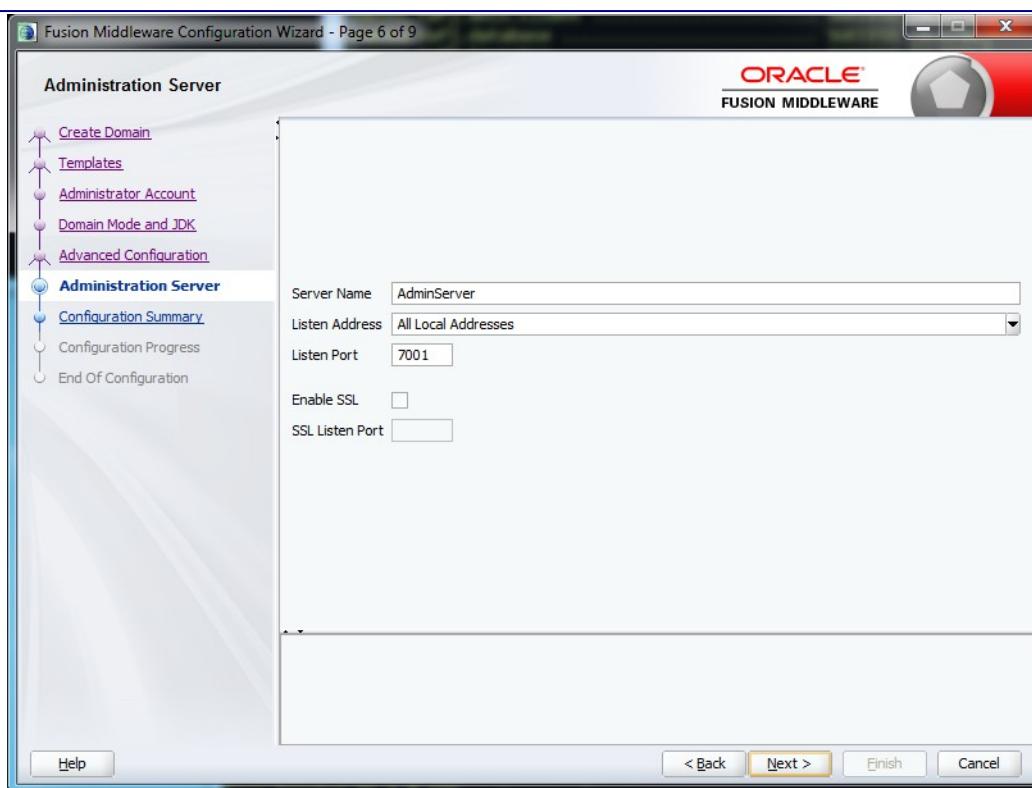
Put a password and confirm it and click next.



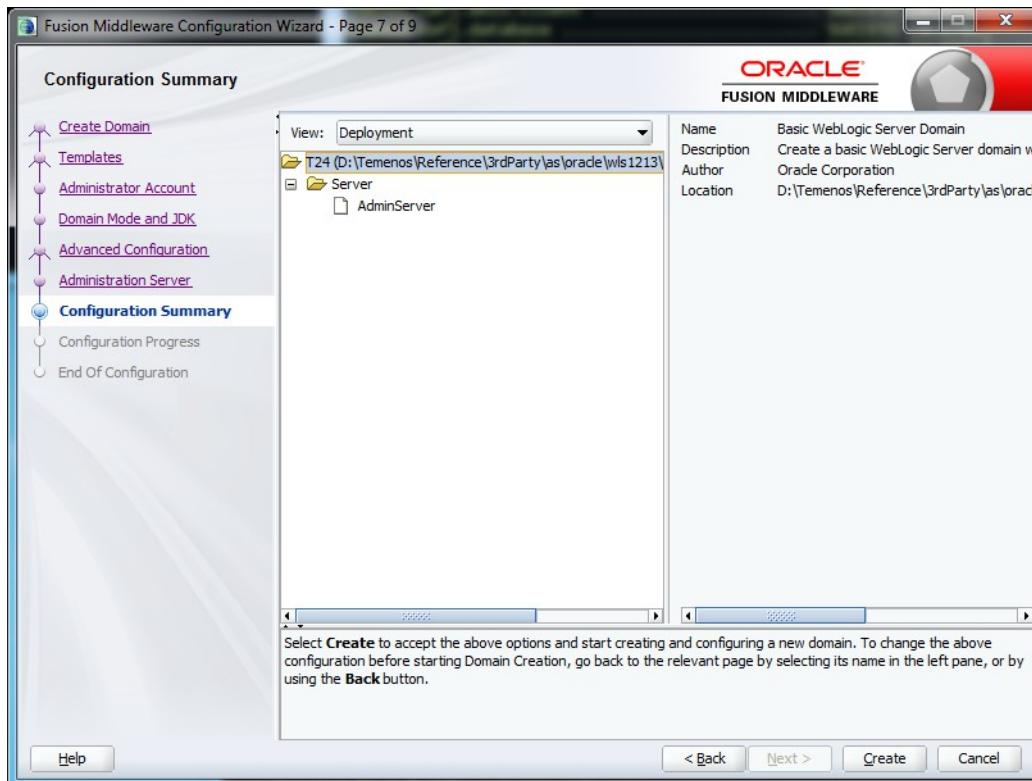
Click next



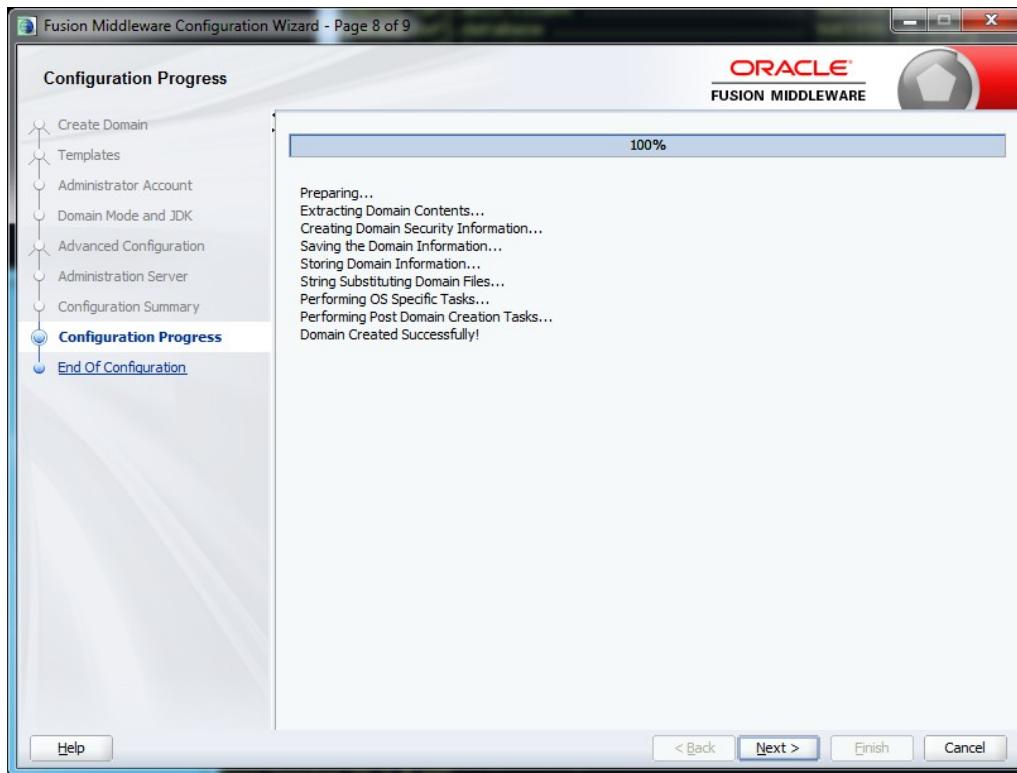
Select **Administration Server** click next.



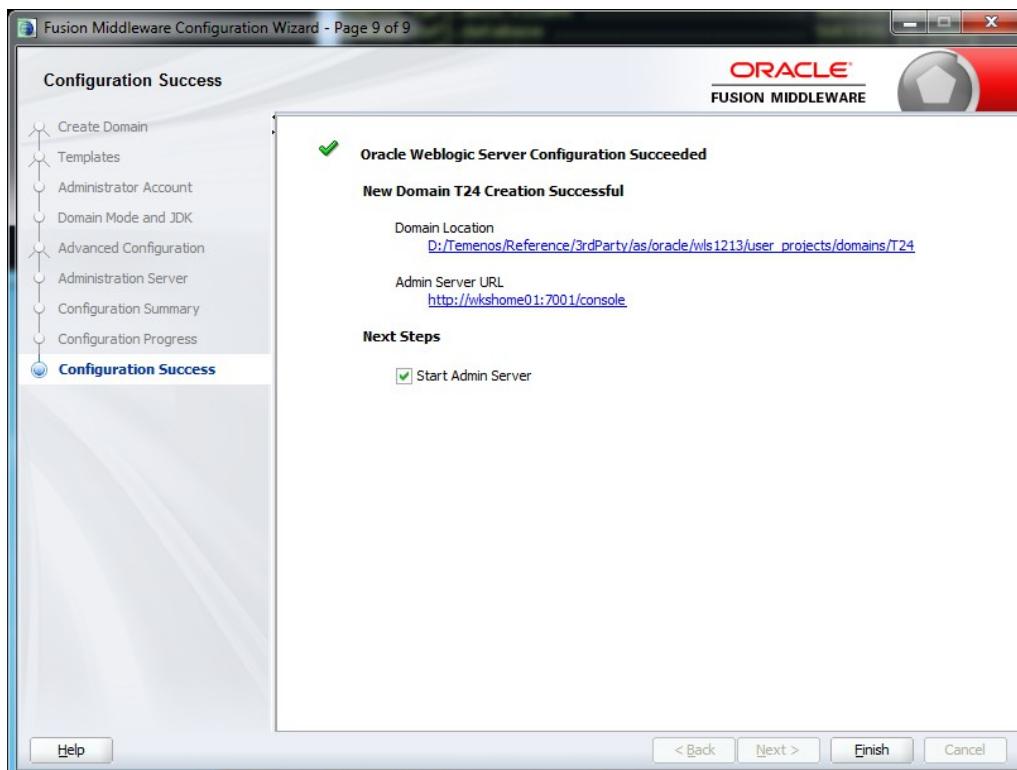
Click next.



Click Create.



Click Next



Select "start Admin Server" and click finish.

A command window open and launch startWeblogic.cmd for you:

TAFJ-AS WeblogicInstall v10.3/12.1.x



**TEMENOS™**

## Weblogic 12.1.1 – Patch

To be able to successfully deploy TAFJJEE\_EAR on **weblogic 12.1.1** you will need to apply the following patch on your weblogic installation.

**TAFJ\_HOME/appserver/weblogic/12c-patch/p15926456\_12110\_Generic.zip**

You have to follow oracle instructions :

- copy content of this zip file with the exception of README file to your SmartUpdate cache directory MW\_HOME/utils/bsu/cache\_dir
- apply patch using Smart Update utility as described below.

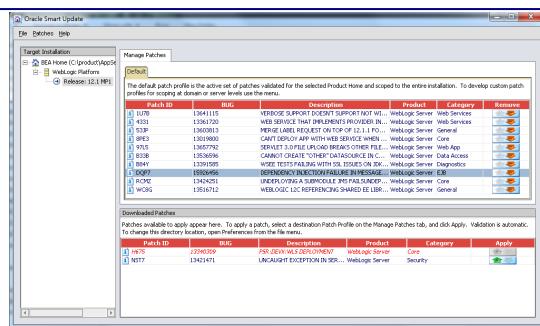
**How to Start Smart Update (taken from oracle documentation)**

To start Smart Update on this platform	Perform the following steps
Windows	<p>From the Start Menu, choose: <b>Start &gt; Programs &gt; Oracle WebLogic &gt; Smart Update</b></p> <p>Or, from an MS-DOS command prompt window:</p> <ol style="list-style-type: none"> <li>1. Go to the MW_HOME \utils\bsu directory, where BEA_HOME is the host directory for the</li> <li>2. At the prompt, enter the following command:</li> </ol> <p style="padding-left: 40px;">bsu.cmd The Smart Update login window is displayed.</p>
UNIX	<p><b>Note:</b> If you want to run Smart Update on a UNIX system, the console attached to the system on which you are upgrading the software must support a Java-based GUI.</p> <ol style="list-style-type: none"> <li>1. Log in to the UNIX system.</li> <li>2. Go to the MW_HOME/utils/bsu directory, where BEA_HOME is the host directory for the product installation that you want to update.</li> <li>3. At the prompt, enter the following command:</li> </ol> <p style="padding-left: 40px;">bsu.sh The Smart Update login window is displayed.</p>

Once the Smart Update window is displayed you will notice patch **DQP7 DEPENDENCY INJECTION FAILURE IN MESSAGE DRIVEN BEAN** in the bottom window section “Downloaded Patches”.

Simply apply this patch by clicking on the green arrow “Apply”.

After a few seconds you will see your patch applied. You are ready to deploy TAFJ.



## Verification and startup

Log on to the Administration console using address

**http://localhost:7001/console**

And enter user name “weblogic” or with the Administrative security username and password.



[Click Login](#)



The screenshot shows the Oracle WebLogic Server Administration Console 12c interface. The left sidebar includes sections for Change Center, Domain Structure (T24), How do I..., and System Status (Health of Running Servers). The main content area displays the Home Page with sections for Information and Resources, Domain Configurations, Services, Interoperability, Diagnostics, and Charts and Graphics. A search bar and navigation menu are at the top.



## Setup Weblogic property file

### Environment configuration

Weblogic embedded ANTLR library which is in conflict with the TAFJ ANTLR.

By not updating the Weblogic classpath weblogic antlr lib will crash the application server  
(CharScanner; panic: ClassNotFoundException: com.temenos.tafj.jql.jQLToken).

### Setup weblogic script

Adapt weblogic classpath:

In file %WEBLOGIC\_HOME%\user\_projects\domains\TAFJ\bin\setDomainEnv.cmd(or sh)  
add bloc under line:

```
@REM IF USER_MEM_ARGS the environment variable is set, use it to override ALL
MEM_ARGS values
```

Add :

```
@REM TAFJ Memory settings
set USER_MEM_ARGS=-Xms256m -Xmx1024m -XX:MaxPermSize=256m

@REM ADD EXTENSIONS TO CLASSPATHS
@REM TAFJ Classpath
set TAFJ_HOME=[TAFJ_HOME]
set T24_HOME=[T24_HOME]
@REM TAFJ antlr lib
set EXT_PRE_CLASSPATH=%TAFJ_HOME%\lib\antlr.jar

@REM TAFJ T24 CLASSPATH
set TAFJ_T24_CLASSPATH=%TAFJ_HOME%\lib\log4j.jar;%TAFJ_HOME%
%lib\T24CollectorClient.jar;%TAFJ_HOME%\lib\TAFJCommon.jar;%TAFJ_HOME%
%lib\TAFJCompiler.jar;%TAFJ_HOME%\lib\TAFJCore.jar;%TAFJ_HOME%
%lib\TAFJClient.jar;%TAFJ_HOME%\lib\TAFJLocking.jar;%TAFJ_HOME%
%lib\TAFJTelnetD.jar;%TAFJ_HOME%\lib\TAFJVersion.jar;%TAFJ_HOME%
%ext\TAFJBasic.jar;%TAFJ_HOME%\ext\tComponentFramework.jar

@REM JDBC Driver not allread in the CLASSPATH
@REM i.e Oracle 11g: set TAFJ_T24_CLASSPATH=%TAFJ_T24_CLASSPATH%;%TAFJ_HOME%
%dbdrivers\oracle-11g\xmlparserv2.jar;%TAFJ_HOME%\dbdrivers\oracle-11g\xdb.jar;
@REM i.e Oracle 12c: set TAFJ_T24_CLASSPATH=%TAFJ_T24_CLASSPATH%;%TAFJ_HOME%
%dbdrivers\oracle-12c\xmlparserv2.jar;%TAFJ_HOME%\dbdrivers\oracle-12c\xdb6.jar;
@REM i.e H2 : set TAFJ_T24_CLASSPATH=%TAFJ_T24_CLASSPATH%;%TAFJ_HOME%
%dbdrivers\h2-1.3.168\h2-1.3.168.jar
set TAFJ_T24_CLASSPATH=%TAFJ_T24_CLASSPATH%;%TAFJ_HOME%\dbdrivers\h2-1.3.168\h2-
1.3.168.jar

@REM T24 CLASSPATH
set TAFJ_T24_CLASSPATH=%TAFJ_T24_CLASSPATH%;%T24_HOME%\t24lib\*
set EXT_POST_CLASSPATH=%TAFJ_T24_CLASSPATH%
```

**Please note that you can use wildcard \* when you want to load all jars contained in a folder.**



i.e. to avoid listing the 900 T24 jars files if you have them all you could do

```
set TAFJ_T24_CLASSPATH=%TAFJ_T24_CLASSPATH%;%T24_HOME%*
```

Validate that red word match deployment environment.

If you are on a UNIX, Linux or zOS platform the separator file is “/” instead of “\” and “;” by “:”.

**Please note that the jars xmlparserv2.jar and xdb.jar / xdb6.jar must match the ojdbc6.jar version provided with weblogic.**

Check ojdbc6.jar version from the server/lib or oracle\_common/modules. It will be different depending on your application server version.

#### *Note for version 12.1.3 and above*

None of the oracle jars need to be added to the classpath as they are part of weblogic distribution.

Weblogic version and jars matching.

WLS 10.3.6 – 12.1.1 – 12.1.2	ojdbc6.jar 11.2.0.3	xdb.jar
WLS 12.1.2 – 12.1.3	ojdbc6.jar 12.1.0.X.0	xdb6.jar

Oracle source - SQL XML support.

[http://docs.oracle.com/middleware/1212/wls/JDBCA/ds\\_12cdriver.htm#JDBCA272](http://docs.oracle.com/middleware/1212/wls/JDBCA/ds_12cdriver.htm#JDBCA272)

[http://docs.oracle.com/middleware/1213/wls/JDBCA/ds\\_12cdriver.htm#JDBCA272](http://docs.oracle.com/middleware/1213/wls/JDBCA/ds_12cdriver.htm#JDBCA272)

This feature is not enabled in WebLogic by default and must be installed by adding xmlparserv2\_sans\_jaxp\_services.jar and xdb6.jar to the application server classpath.

WebLogic is distributed with JDBC drivers and the additional JDBC SQL XML drivers MUST match the database version for the installed JDBC drivers, which MUST be equal to or greater than your installed Oracle Database version.

The jar files can be found on the Oracle web page, or in the product directory of your database (check \${ORACLE\_HOME}/jdbc/lib, \${ORACLE\_HOME}/rdbms/jlib and \${ORACLE\_HOME}/xdk/lib).  
NOTE: WebLogic 12.1.3 does not require any modifications for JDBC SQL XML support.

## UAT / Production Memory setting

```
set USER_MEM_ARGS=-Xms256m -Xmx1024m -XX:MaxPermSize=256m
```

**Please note that above memory setting is the minimal one to be able to deploy the application and run some agents to validate the configuration.**

**For a UAT and production environment you must refine this setting depending on your expected number of sessions and tSA.**

A session / tSA memory impact vary depending on the job done, it will be at least 20MB and could be up to 60MB.

When planning to run for example 80 interactive sessions and 40 tSA on a server, you could dimension the **max memory for sessions** by applying:

120 sessions \* average 50MB = 6G max heap size.

You will have **-Xmx6G**

A good practice could be to set initial heap size to same value **-Xms6G**

If you are interested to monitor that more precisely, you could use a monitoring tool like Visual VM.

Take a heapdump when running the expected jobs, isolate the jSession objects and compute the retained size.

This is for one session.

Class Name	Instances [%]	Instances	Size	Retained ▾
com.temenos.tafj.common.jSession	—	1 (0%)	691 (0%)	21,026,378 (19.2%)

This for 16 sessions.

Instances: 16   Instance size: 691   Total size: 11,056   Retained size: 376,874,718	376,874,718 (74%)
--	-------------------

You could also simply use TAFJ technical monitor to follow the memory evolution graph over the time and refine your setup.

### *Memory errors*

**Java.lang.OutOfMemoryError: Java heap space**

Increase **-Xmx** max heap size parameter



Java.lang.OutOfMemoryError: **PermGen space**

Increase -XX:MaxPermSize max perm gen parameter

#### *JVM parameters*

Snapshot of the heap to analyse the content when getting a OOM error.

-XX:+HeapDumpOnOutOfMemoryError

-XX:HeapDumpPath=/some/path/

Garbage collection logs, detailed information about Garbage Collection, could be applied as there is a low overhead, display the amount of memory released

-XX:+PrintGC or -verbose:gc

Print messages at garbage collection, simple logging mode, i.e.

[GC 370562K->208870K(964096K), 0.0138438 secs]

[Full GC 174246K->81336K(853504K), 0.7733941 secs]

-XX:+PrintGCDetails

Same as above but print more details at garbage collection, differs depending on GC algorithm.

-Xloggc:<file> equivalent to -XX:+PrintGC -XX:+PrintGCTimeStamps

Log GC verbose output to specified file with time and date information



## Weblogic script configuration (single server) for T24 java deployment

### Setup properties

Use this way to automate the setup of weblogic. Otherwise, you will have to do it manually.

Update tafj.properties for weblogic scriptsUpdate the

**TAFJ\_HOME\appserver\weblogic\tafj.properties** file with your value, for example:

```
#####
# Node details
#
weblo_user=[user]
weblo_password=[password]
weblo_hostname=[hostname]
weblo_port=[port]
#####
# Path details
#
tafjHome=[TAFJ root folder]
t24Home="[T24 lib folder]"
#####
# database details
#
dbDriver=[oracle11g,oracle-12c,db2_v10.1,h2-1.x.x]
dbHostName=[hostname]
dbPort=[port]
dbName=[sid]
dbUser=[user]
dbPassword=[password]
#dbR0HostName=[hostname]
#dbR0Port=[port]
#dbR0dbName=[sid]
#dbR0dbUser=[user]
#dbR0Password=[password]
#####
# Browser details
#
# path of your BrowserWar file
browserWebHome=[BrowserWar path]
```



---

This is an example:

```
#####
# Node details
#
weblo_user=weblogic
weblo_password=Temenos@T24
weblo_hostname=localhost
weblo_port=7001
#####
# Path details
#
tafjHome=D:/Temenos/Reference/Temenos/TAFJ
t24Home=D:/Temenos/Reference/Temenos/T24/lib/t24lib
#####
# database details
#
dbDriver=h2-1.3.176
dbHostName=localhost
dbPort="[port]"
dbName=T24
dbUser=mbtafj
dbPassword=[password]
#dbR0HostName="[hostname]"
#dbR0Port="[port]"
#dbR0dbName="[sid]"
#dbR0dbUser="[user]"
#dbR0Password=[password]
#####
# Browser details
#
# path of your BrowserWar file
browserWebHome=D:/Temenos/Reference/Temenos
```



## Generate password for datasource

Launch the following command from %WEBLOGIC\_HOME%\user\_projects\domains%\domain\_name\bin

Execute

- setDomainEnv.cmd
- java weblogic.security.Encrypt [password]

change in taf.properties the encrypt password

i.e

```
...\\wls1213\\user_projects\\domains\\T24>java weblogic.security.Encrypt mbtafj
```

```
{AES}tINJG+Muoi6YYHIkq6oNcss4qQPbvukK6Ra8U7EjPZo=
```

```
dbHostName=localhost
dbPort="[port]"
dbName=T24
dbUser=mbtafj
dbPassword={AES}tINJG+Muoi6YYHIkq6oNcss4qQPbvukK6Ra8U7EjPZo=
#dbR0HostName="[hostname]"
#dbR0Port="[port]"
#dbR0dbName="[sid]"
#dbR0dbUser="[user]"
```

## BROWSER Application

**BrowserWeb.war** have to be change for Weblogic

Correct the jboss-web.xml with the correct parameter :

```
<resource-description>
    <res-ref-name>jms/jmsConnectionFactory</res-ref-name>
    <jndi-name>jms/ConnectionFactory</jndi-name>
</resource-description>
<resource-description>
    <res-ref-name>queue/t240FSQueue</res-ref-name>
    <jndi-name>jms/t240FSQueue</jndi-name>
</resource-description>
<resource-description>
    <res-ref-name>queue/t240FSReplyQueue</res-ref-name>
    <jndi-name>jms/t240FSReplyQueue</jndi-name>
</resource-description>
<container-descriptor>
    <show-archived-real-path-enabled>true</show-archived-real-path-enabled>
</container-descriptor>
    <jsp-descriptor>
        <encoding>utf-8</encoding>
    </jsp-descriptor>
</weblogic-web-app>
```



## One step configuration

To have a working deployment you need to configure:

- Environment variables and shared libraries (TAFJ and T24 libraries)
- JMS resources (Communication channels between applications )
- JDBC data sources (Database connectivity)
- Applications deployment (TAFJ ear file, BrowserWeb ...)

The script of the complete configuration is located at %TAFJ\_HOME%\appserver\weblogic\T24Setup.py

**Edit the file and comment and uncomment what you need:**

```
print "Setup Environment"
execfile('environmentConfiguration.py')

print "JMS Environment"
execfile('jmsConfiguration.py')
execfile('queuesConfiguration.py')
#or
#execfile('jmsConfiguration-Distribued.py')
#execfile('jmsConfiguration.py')

print "Setup Database"
execfile('ORACLEConfiguration.py')
#or
#execfile('DB2Configuration.py')
#or
#execfile('H2Configuration.py')

print "Setup TAFJ EE (MDB & EJB)"
execfile('TAFJEEApplicationDeployment.py')

print "Setup Browser"
execfile('BROWSERWEBApplicationDeployment.py')
```

## Execute One step configuration

Launch the following command from %TAFJ\_HOME%\appserver\weblogic dir on the command line for one step installation.

```
%WEBLOGIC_HOME%\wlserver\common\bin\wlst -loadProperties
tafj.properties T24Setup.py
```

```
0x Command Prompt
Setup Browser
Connecting to t3://localhost:7001 with userid weblogic ...
Successfully connected to Admin Server "AdminServer" that belongs to domain "T24".

Warning: An insecure protocol was used to connect to the
server. To ensure on-the-wire security, the SSL port or
Admin port should be used instead.

Starting an edit session ...
Started edit session, please be sure to save and activate your
changes once you are done.
Deploying application from D:\Temenos\Reference\Temenos\BrowserWeb.war to targets AdminServer (upload=false) ...
<Mar 10, 2015 11:49:00 AM CET> <Info> <J2EE Deployment SPI> <BEA-260121> <Initiating deploy operation for application, Browse
rWeb [archive: D:\Temenos\Reference\Temenos\BrowserWeb.war], to AdminServer .>
You have an edit session in progress, hence WLST will not
block for your deployment to complete.
Started the Deployment of Application. Please refer to the returned WLSTProgress object or variable LAST to track the status.

Saving all your changes ...
Saved all your changes successfully.
Activating all your changes, this may take a while ...
The edit lock associated with this edit session is released
once the activation is completed.
Activation completed
<Mar 10, 2015 11:49:02 AM CET> <Warning> <JNDI> <BEA-050001> <WLContext.close() was called in a different thread than the one
in which it was created.>

D:\Temenos\Reference\Temenos\TAFJ\appserver\weblogic>
```

## Multiple steps configuration

### Creating JMS Connection Factories

A JMS connection factory is used to create connections to JMS destinations. The JMS connection factory is created by the associated JMS provider.

Launch the following command from %TAFJ\_HOME%\appserver\weblogic dir on the command line for one step installation.

```
%WEBLOGIC_HOME%\wlserver\common\bin\wlst -loadProperties
tafj.properties jmsConfiguration.py
```

This script will create JMS server and connection factory.

Validate creation:

Select TAFJ\services\Messages\JMS Server you have to see JMSserver-1



The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar displays the Domain Structure for 'R12' under the 'Services' > 'Messaging' section, specifically the 'JMS Servers' node. The main content area is titled 'Summary of JMS Servers' and contains a table listing one JMS server: 'JMSServer-1' with a target of 'AdminServer'. Navigation links at the top include Home, Log Out, Preferences, Record, Help, and a search bar.

Name	Persistent Store	Target
JMSServer-1		AdminServer

Select TAFJ\services\Messages\JMS Modules you have to see SystemModule-1

The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar displays the Domain Structure for 'R12' under the 'Services' > 'Messaging' section, specifically the 'JMS Modules' node. The main content area is titled 'JMS Modules' and contains a table listing one module: 'SystemModule-1'. Navigation links at the top include Home, Log Out, Preferences, Record, Help, and a search bar.

Name
SystemModule-1

Click on SystemModule-1 you have to see ConnectionFactory-1



**ORACLE WebLogic Server® Administration Console**

**Change Center**

**View changes and restarts**

Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.

**Domain Structure**

- R12
  - + Environment
  - Deployments
  - Services
    - Messaging
      - JMS Servers
      - Store-and-Forward Agents
      - JMS Modules
      - Path Services
      - Bridges
        - JMS Bridge Destinations
    - JDBC
      - Persistent Stores
      - Environ. JNDI Providers

**How do I...**

  - Configure JMS system modules
  - Configure subdeployments in JMS system modules

**Settings for SystemModule-1**

**Configuration** Subdeployments Targets Security Notes

This page displays general information about a JMS system module and its resources. It also allows you to configure new resources and access existing ones.

**Name:** SystemModule-1 The name of this JMS system module. [More Info...](#)

**Descriptor File Name:** jms/tafj/tafj-jms.xml The name of the JMS module descriptor file. [More Info...](#)

This page summarizes the JMS resources that have been created for this JMS system module, including queue and topic destinations, connection quota, distributed destinations, foreign servers, and store-and-forward parameters.

**Customize this table**

**Summary of Resources**

<a href="#">New</a>	<a href="#">Delete</a>	<b>Name</b>	<b>Type</b>	<b>JNDI Name</b>
<input type="checkbox"/>		ConnectionFactory-1	Connection Factory	jms/ConnectionFactory

To avoid weblogic issue **BEA 169822 Error: Unable to use a wrapped JMS session in the transaction because two-phase commit is not available.**

Please apply the following change to the connection factory :

Click on ConnectionFactory-1, then on the Transactions tab and finally tick the box **XA Connection Factory enabled**.

**ORACLE WebLogic Server® Administration Console**

**Change Center**

**View changes and restarts**

Pending changes exist. They must be activated to take effect. You may activate them now. Otherwise, they will be automatically activated when you next modify, add or delete items in this domain.

[Activate Changes](#) [Undo All Changes](#)

**Domain Structure**

- Migratable Targets
- Machines
- Work Managers
- Startup & Shutdown Classes
- Deployments
- Services
  - Messaging
    - JMS Servers
    - Store-and-Forward Agents
    - JMS Modules

**Settings for ConnectionFactory-1**

**Configuration** Subdeployment Notes

**Transactions** General Default Delivery Client Flow Control Load Balance Security

**Save**

Use this page to define the transaction configuration for this JMS connection factory. You can define a transaction timeout, which creates sessions that are JTA user-transaction aware.

**Transaction Timeout:**

**XA Connection Factory Enabled**



## JMS resources configuration

### Create JMS queues/Topic for T24:

Launch the following command from %TAFJ\_HOME%\appserver\weblogic dir on the command line for one step installation.

```
%WEBLOGIC_HOME%\wlserver\common\bin\wlst -loadProperties
tafj.properties queuesConfiguration.py
```

This script will create JMS Queue.

Validate creation:

Select TAFJ\services\Messages\JMS Modules you have to see SystemModule-1 and click on SystemModule-1

Name	Type	JNDI Name	Subdeployment	Targets
ConnectionFactory-1	Connection Factory	jms/ConnectionFactory	Default Targetting	AdminServer
t24ARCIBQueue	Queue	jms/t24ARCIBQueue	t24JMServer1	JMServer-1
t24ARCIBReplyQueue	Queue	jms/t24ARCIBReplyQueue	t24JMServer1	JMServer-1
t24CALLATQueue	Queue	jms/t24CALLATQueue	t24JMServer1	JMServer-1
t24CALLATReplyQueue	Queue	jms/t24CALLATReplyQueue	t24JMServer1	JMServer-1
t24EEXECQueue	Queue	jms/t24EEXECQueue	t24JMServer1	JMServer-1
t24OFSQueue	Queue	jms/t24OFSQueue	t24JMServer1	JMServer-1
t24OFSReplyQueue	Queue	jms/t24OFSReplyQueue	t24JMServer1	JMServer-1
t24SEATQueue	Queue	jms/t24SEATQueue	t24JMServer1	JMServer-1
t24SEATReplyQueue	Queue	jms/t24SEATReplyQueue	t24JMServer1	JMServer-1

## Configuring a remote JMS provider

You may have to use a third party JMS provider or to deploy Browser and TAFJ in different weblogic server instance. Thus Browser will need to reach T24 queues on remote weblogic instance.

Please refer to the following documentation to do it

[http://docs.oracle.com/cd/E24329\\_01/apirefs.1211/e24401/taskhelp/jms\\_modules/foreign\\_servers/ConfigureForeignServers.html](http://docs.oracle.com/cd/E24329_01/apirefs.1211/e24401/taskhelp/jms_modules/foreign_servers/ConfigureForeignServers.html)

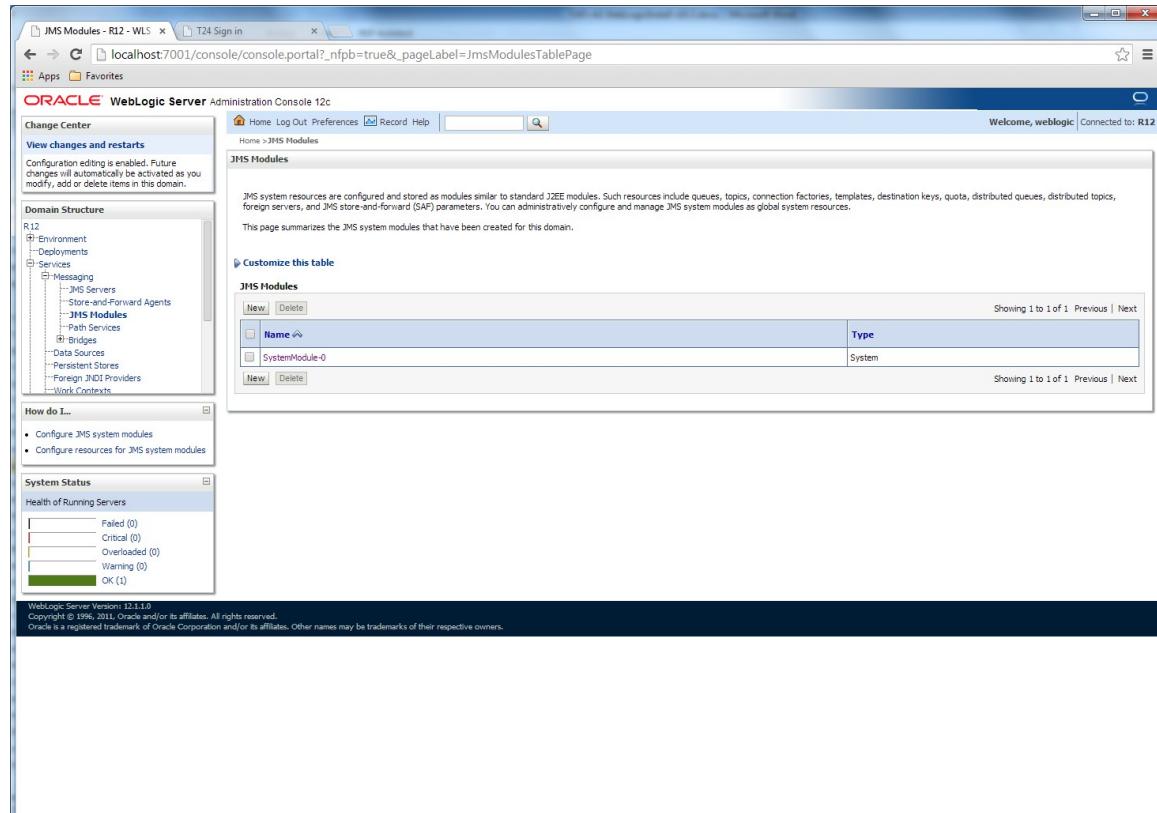
[http://docs.oracle.com/cd/E24329\\_01/apirefs.1211/e24401/taskhelp/jms\\_modules/foreign\\_servers/CreateForeignConnectionFactories.html](http://docs.oracle.com/cd/E24329_01/apirefs.1211/e24401/taskhelp/jms_modules/foreign_servers/CreateForeignConnectionFactories.html)

*Configuration example: Browser and TAFJ are deployed on different server instance.*

We assume you have done the above mentioned step to configure JMS on the server which is hosting TAFJ deployment.

The steps below apply to the server instance where Browser is deployed.

First from the Messaging / JMS Modules section create a new JMS module.



Name	Type
SystemModule-0	System

Then enter the module and create a new resource, type “Foreign Server”.



The screenshot shows the 'Create a New JMS System Module Resource' wizard in the Oracle WebLogic Server Administration Console. The 'Connection Factory' tab is selected. Other tabs include Queue, Topic, Distributed Queue, Distributed Topic, Foreign Server, Quota, Destination Sort Key, JMS Template, S AF Imported Destinations, Remote SAF Context, and SAF Error Handling.

Configure the foreign server JNDI connection URL property to point on the remote weblogic instance.

The screenshot shows the 'Settings for ForeignServer' configuration page in the Oracle WebLogic Server Administration Console. The 'General' tab is selected. Other tabs include Destinations and Connection Factories. The 'JNDI Connection URL' field is set to 't3://10.41.5.53:7001'.

Save the change and click the Connection Factories tab to create a connection factory.



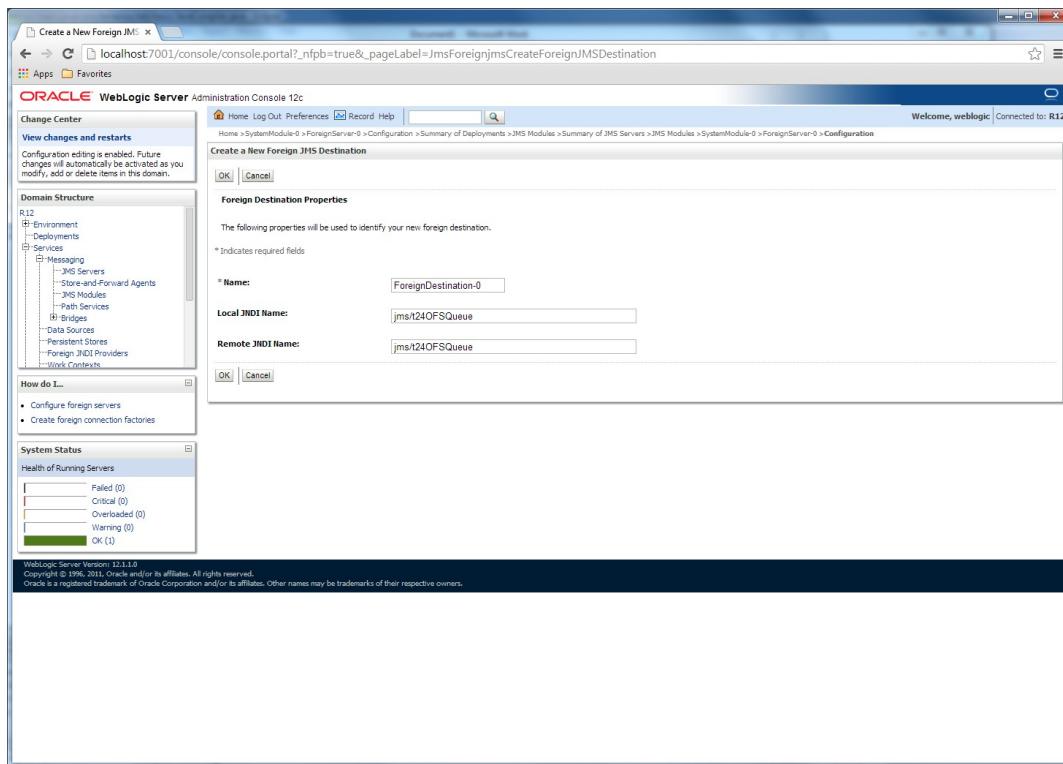
The screenshot shows the 'Connection Factories' section of the WebLogic Administration Console. The left sidebar shows the domain structure under 'R12'. The main content area shows a table titled 'Foreign Connection Factories (Filtered - More Columns Exist)'. The table has three columns: 'Name' (with 'New' and 'Delete' buttons), 'Local JNDI Name' (with 'New' and 'Delete' buttons), and 'Remote JNDI Name' (with 'New' and 'Delete' buttons). Below the table, a message says 'There are no items to display.'

Map the connection factory attributes Local JNDI name and Remote JNDI to your expected values.

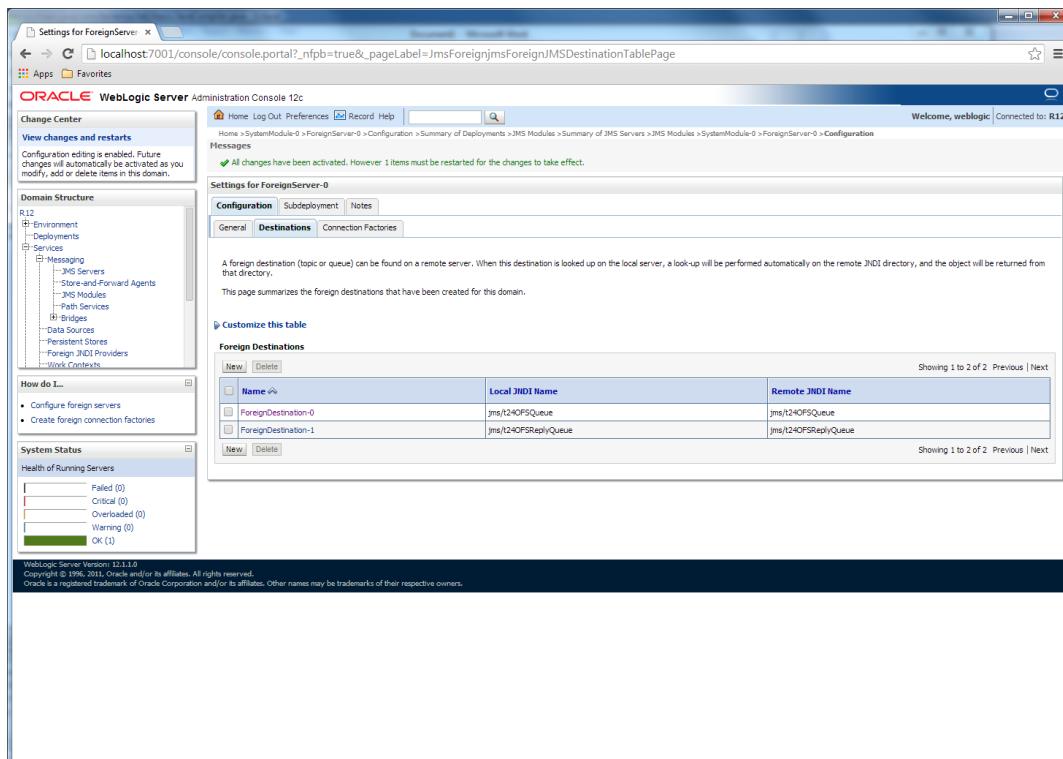
The screenshot shows the 'Create a New Foreign JMS Connection Factory' dialog box. It includes fields for 'Name' (set to 'ForeignConnectionFactory'), 'Local JNDI Name' (set to 'jms/ConnectionFactory'), and 'Remote JNDI Name' (set to 'jms/ConnectionFactory'). The dialog also features 'OK' and 'Cancel' buttons. The background shows the standard WebLogic Admin Console interface with the 'Domain Structure' sidebar and various status indicators.



Save your change and repeat same operations through the Destination tab to create Browser queues, t24OFSQueue and t24OFSReplyQueue with the appropriate local and remote JNDI mapping.



You should have the following destinations created.





---

Deploy browser on this weblogic instance and it will use connection factory and queues from remote weblogic instance.

### JDBC resources configuration

We have to create a connection to the database. The database can have different providers. (Oracle, Db2,...)

**When you setup the datasource you have to use the drivers provided by the database. The %TAFJ\_HOME%\dbdrivers is just a helper. We cannot guaranty the drivers we provide with TAFJ is working for all version of Database.**

#### (Special Note) Using the JDBC Locking Mechanism

If you would like to use the jdbc locking mechanism instead of the default TAFJ one, (by setting temn.tafj.locking.use.tafj.locking= false in your tafj.properties file) and you want another datasource to control this (recommended), you will need to add tafjt24\_dataSourceName=t24LockingDS.

```
cd %WEBLOGIC_HOME%\wlserver_12.1\common\bin
```

#### For MSSQL

```
wlst -loadProperties %TAFJ_HOME%\appserver\weblogic\tafj.properties %TAFJ_HOME%\appserver\weblogic\MSSQLConfiguration.py
```

#### For ORACLE

```
wlst -loadProperties %TAFJ_HOME%\appserver\weblogic\tafj.properties %TAFJ_HOME%\appserver\weblogic\ORACLEConfiguration.py
```



```

Administrator: WebLogic Scripting Tool
ar;C:\APPLIC\1\as\weblogic\WLSEUR\1.3\common\derby\lib\derbytools.jar;
Initializing WebLogic Scripting Tool (WLST) ...
Welcome to WebLogic Server Administration Scripting Shell
Type help() for help on available commands

Connecting to t3://localhost:7001 with userid weblogic ...
Successfully connected to Admin Server 'AdminServer' that belongs to domain 'TAFJ'.

Warning: An insecure protocol was used to connect to the
server. To ensure on-the-wire security, the SSL port or
Admin port should be used instead.

Location changed to edit tree. This is a writable tree with
DomainMBean as the root. To make changes you will need to start
an edit session via startEdit().

For more help, use help(edit)
You already have an edit session in progress and hence WLST will
continue with your edit session.

Starting an edit session ...
Started edit session, please be sure to save and activate your
changes once you are done.
C:\application\as\weblogic\wlserver_10.3\common\bin>wlst -loadProperties D:\down
load\weblo\tafjt24_datasource.properties D:\download\weblo\TAFJDatasource.py

```

Afterwards you need to set the datasource password. Browse the admin console to Services>Datasources

#### Summary of JDBC Data Sources

A JDBC data source is an object bound to the JNDI tree that provides database connectivity through a pool of JDBC connections. Applications can look up a data source or database connection from a data source.

This page summarizes the JDBC data source objects that have been created in this domain.

[Customize this table](#)

#### Data Sources (Filtered - More Columns Exist)

	<a href="#">Name</a>	<a href="#">JNDI Name</a>	<a href="#">Targets</a>
<input type="checkbox"/>	t24DS	jdbc/t24DS	AdminServer
<input type="checkbox"/>	t24LockingDS	jdbc/t24LockingDS	AdminServer

Click on t24DS datasource and select Connection pool :



The screenshot shows the Oracle WebLogic Server Administration Console 12c interface. The left sidebar displays the domain structure under 'tafjdev\_domain'. The main panel is titled 'Settings for t24DS - tafjdev\_domain - WL...'. The navigation bar at the top includes 'Home', 'Log Out', 'Preferences', 'Record', 'Help', and a search bar. The breadcrumb path is: Home > JMS Modules > SystemModule-1 > Summary of Servers > AdminServer > Summary of JMS Data Sources > Summary of JMS Data Source > Summary of JMS Data Sources > t24DS.

The central area is titled 'Settings for t24DS' and contains tabs for 'Configuration', 'Targets', 'Monitoring', 'Control', 'Security', and 'Notes'. The 'Configuration' tab is selected. Sub-tabs include 'General', 'Connection Pool', 'Oracle', 'ONS', 'Transaction', 'Diagnostics', and 'Identity Options'. A 'Save' button is located below the tabs.

The 'Connection Pool' configuration section includes:

- URL:** jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS\_LIST=))
- Driver Class Name:** oracle.jdbc.xa.client.OracleXADataSource
- Properties:** user=tafj
- System Properties:** (empty)
- Password:** (redacted)
- Confirm Password:** (redacted)

A note at the bottom of the page states: 'Put a password and click on save. (You might actually have to have your derby server started or this might fail).'



Datasource validation:

Click on “Monitoring” and tab “Testing”:

The screenshot shows the Temenos application interface. At the top, there is a navigation bar with links: Home, Log Out, Preferences, Record, Help, and a search bar. Below the navigation bar, the URL path is visible: Home > JMS Modules > Summary of Services: JMS > JMS Modules > SystemModule-1 > Summary of Services: JDBC > Summary of JDBC Data Sources > t24DS > Settings for t24DS.

The main content area is titled "Settings for t24DS". Below the title, there is a horizontal navigation bar with tabs: Configuration, Targets, Monitoring, Control, Security, Notes, Statistics, and Testing. The "Testing" tab is currently selected and highlighted in blue.

The main content area contains the following text: "Use this page to test database connections in this JDBC data source." Below this text, there is a section titled "▶ Customize this table" with a link. Underneath is a table titled "Test Data Source (Filtered - More Columns Exist)". The table has two columns: "Server" and "State". There is one row with data: AdminServer (State: Running). At the bottom of the table, there is a button labeled "Test Data Source".

Select AdminServer and click test button:

The screenshot shows the Temenos application interface. At the top, there is a navigation bar with links: Home, Log Out, Preferences, Record, Help, and a search bar. Below the navigation bar, the URL path is visible: Home > JMS Modules > Summary of Services: JMS > JMS Modules > SystemModule-1 > Summary of Services: JDBC > Summary of JDBC Data Sources > t24DS > Messages.

The main content area contains a message: "✓ Test of t24DS on server AdminServer was successful." Below this message, there is a section titled "Settings for t24DS" with a horizontal navigation bar. The "Monitoring" tab is currently selected and highlighted in blue. Below the navigation bar, there are two tabs: Statistics and Testing. The "Testing" tab is also present but not selected.

Use this page to test database connections in this JDBC data source.

Green line all is ok.

Repeat this step for all your data sources.



## Known issues – Driver mismatch (Applies to 12.1.3 and perhaps before)

### *Class cast exception*

Depending on your driver version (ojdbc6 / xdb(6) )you might encounter the below error when manipulating XML record.

java.lang.ClassCastException:

weblogic.jdbc.wrapper.WrapperSQLXML\_oracle\_xdb\_XMLType cannot be cast to oracle.sql.OPAQUE

To overcome it, you will need to untick the following property at T24DS level - connection pool – advanced properties.

**Wrap Data Types**

### *Class not found exception*

java.lang.NoClassDefFoundError: oracle.xdb.XMLType

or

java.lang.NoClassDefFoundError: oracle/jdbc/internal/XMLTypeIntf

This is because of a driver mismatch between ojdbc6.jar embedded in weblogic and the xdb(6).jar added to the classpath.

Check the ojdbc6.jar version and use the appropriate xdb.jar.

WLS 10.3.6 – 12.1.1 – 12.1.2	ojdbc6.jar 11.2.0.3	xdb.jar
WLS 12.1.2 – 12.1.3	ojdbc6.jar 12.1.0.X.0	xdb6.jar



## Setup TAFJ\_HOME in Weblogic

Browse the weblogic admin console, and select servers:

**ORACLE WebLogic Server® Administration Console**

**Change Center**

**View changes and restarts**

Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.

**Domain Structure**

- R12
  - Environment
    - Servers
    - Clusters
    - Virtual Hosts
    - Migratable Targets
    - Machines
    - Work Managers
    - Startup & Shutdown Classes
  - Deployments
  - + Services
  - Security Realms
  - + Interoperability
  - + Diagnostics

**Summary of Servers**

**Configuration** Control

A server is an instance of WebLogic Server that runs in its own process. This page summarizes each server that has been configured in this domain.

Customize this table

**Servers (Filtered - More Columns Exist)**

	Name
<input type="checkbox"/>	AdminServer(admin)

Click on Adminserver and select “Server Start” tab and put:

1. -Dtafj.home=c:\Temenos\TAFJ in arguments
2. Reboot Weblogic



Screenshot of the Oracle WebLogic Server Administration Console showing the "Settings for AdminServer" configuration page.

**Domain Structure:** R12

- Environment
  - Servers
  - Clusters
  - Virtual Hosts
  - Migratable Targets
  - Machines
  - Work Managers
  - Startup & Shutdown Classes
- Deployments
- Services
- Security Realms
- Interoperability
- Diagnostics

**How do I...**

- Configure startup arguments for Managed Servers
- Start Managed Servers from the Administration Console
- Shutdown a server instance

**System Status:** Health of Running Servers

Status	Count
Failed (0)	0
Critical (0)	0
Overloaded (0)	0
Warning (0)	0
OK (1)	1

**Configuration Tab:** Protocols, Logging, Debug, Monitoring, Control, Deployments, Services, Security, Notes, General, Cluster, Services, Keystores, SSL, Federation Services, Deployment, Migration, Tuning, Overload, Health Monitoring, Server Start (selected).

**Server Start Tab:**

**Save:** Node Manager is a WebLogic Server utility that you can use to start, suspend, shut down, and restart servers in normal or unexpected conditions. Use this page to configure the startup settings that Node Manager will use to start this server on a remote machine.

**Java Home:** [Text Input] The Java home directory (path on the machine running Node Manager) to use when starting this server. [More Info...](#)

**Java Vendor:** [Text Input] The Java Vendor value to use when starting this server. For example, BEA, Sun, HP etc. [More Info...](#)

**BEA Home:** [Text Input] The BEA home directory (path on the machine running Node Manager) to use when starting this server. [More Info...](#)

**Root Directory:** [Text Input] The directory that this server uses as its root directory. This directory must be on the computer that hosts the Node Manager. If you do not specify a Root Directory value, the domain directory is used by default. [More Info...](#)

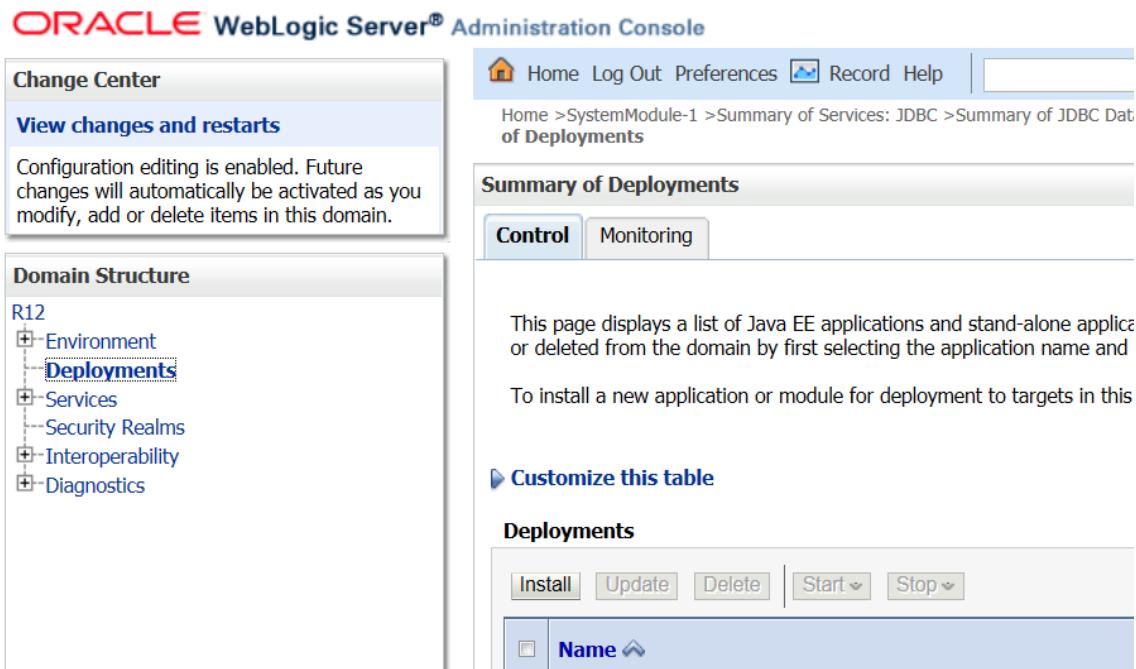
**Class Path:** [Text Input] The classpath (path on the machine running Node Manager) to use when starting this server. [More Info...](#)

**Arguments:** [-Dtafj.home=C:\Temenos\TAFJ]

## TAFJ Application deployment

### Deploy TAFJJEE\_EAR.ear file

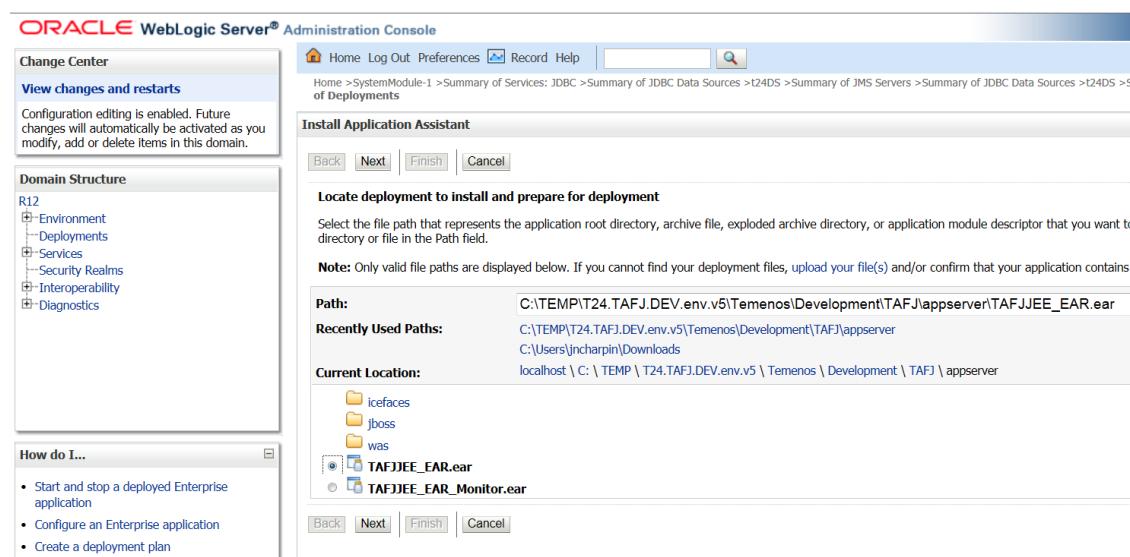
Browse weblogic console, click on Deployments



The screenshot shows the Oracle WebLogic Server Administration Console. The left sidebar has a 'Domain Structure' tree with nodes: R12, Environment, Deployments (which is selected), Services, Security Realms, Interoperability, and Diagnostics. The main content area is titled 'Summary of Deployments' under the 'Control' tab. It displays a table with columns: Name, Status, and Action buttons (Install, Update, Delete, Start, Stop). There is a note: 'This page displays a list of Java EE applications and stand-alone applications deleted from the domain by first selecting the application name and then clicking the Delete button.' Below the table is a link 'Customize this table'.

Click on install

Select the TAFJJEE\_EAR.ear file (Make sure it is the correct one for Oracle 12c)



The screenshot shows the 'Install Application Assistant' page. The left sidebar has the same 'Domain Structure' tree as the previous screenshot. The main content area has a 'Locate deployment to install and prepare for deployment' section. It shows a 'Path:' field containing 'C:\TEMP\T24.TAFJ.DEV.env.v5\Temenos\Development\TAFJ\appserver\TAFJJEE\_EAR.ear'. Below it are 'Recently Used Paths:' and 'Current Location:' fields. Under 'Current Location:', there is a list of files: icefaces, jboss, was, TAFJJEE\_EAR.ear (which is selected with a blue border), and TAFJJEE\_MONITOR.ear. At the bottom are 'Back', 'Next', 'Finish', and 'Cancel' buttons.

Click next until TAFJJEE\_EAR.ear file is installed.



## TAFJJEE Application

TAFJJEE\_EAR.ear file will set MDB (TAFJJEE\_MDB.jar) and EJB (TAFJJEE\_EJB.jar) to read message from JMS Queues, call T24 and publish response in reply queues.

It also contains a war file to deploy helper servlet.

<http://localhost:8080/TAFJEE>

The screenshot shows a web browser window titled "TAFJEE - Home". The address bar displays "localhost:8080/TAFJEE/index.html". The page content includes:

- TEMENOS** logo and tagline "The Banking Software Company".
- Welcome!** message: "Welcome to TAFJ servlets. If you can see this page you have successfully deployed TAFJ Web Application."
- Diagnostic** section:
  - [tDiag](#): Get details about your TAFJ environment
  - [tShow](#): Get routine compilation details
- Execution** section:
  - [Execute servlet](#): Post message to ExecQueue
  - [Entry points](#): Learn how to interact with TAFJEE
  - [DBTools](#): Execute DBTools command
- Troubleshooting** section:
  - [Technical monitor](#): Monitor your TAFJEE application
  - [Log files](#): Change log level and view log files
  - [Como files](#): View como files
- Bottom note: "Webapp version:DEV.201505.0"

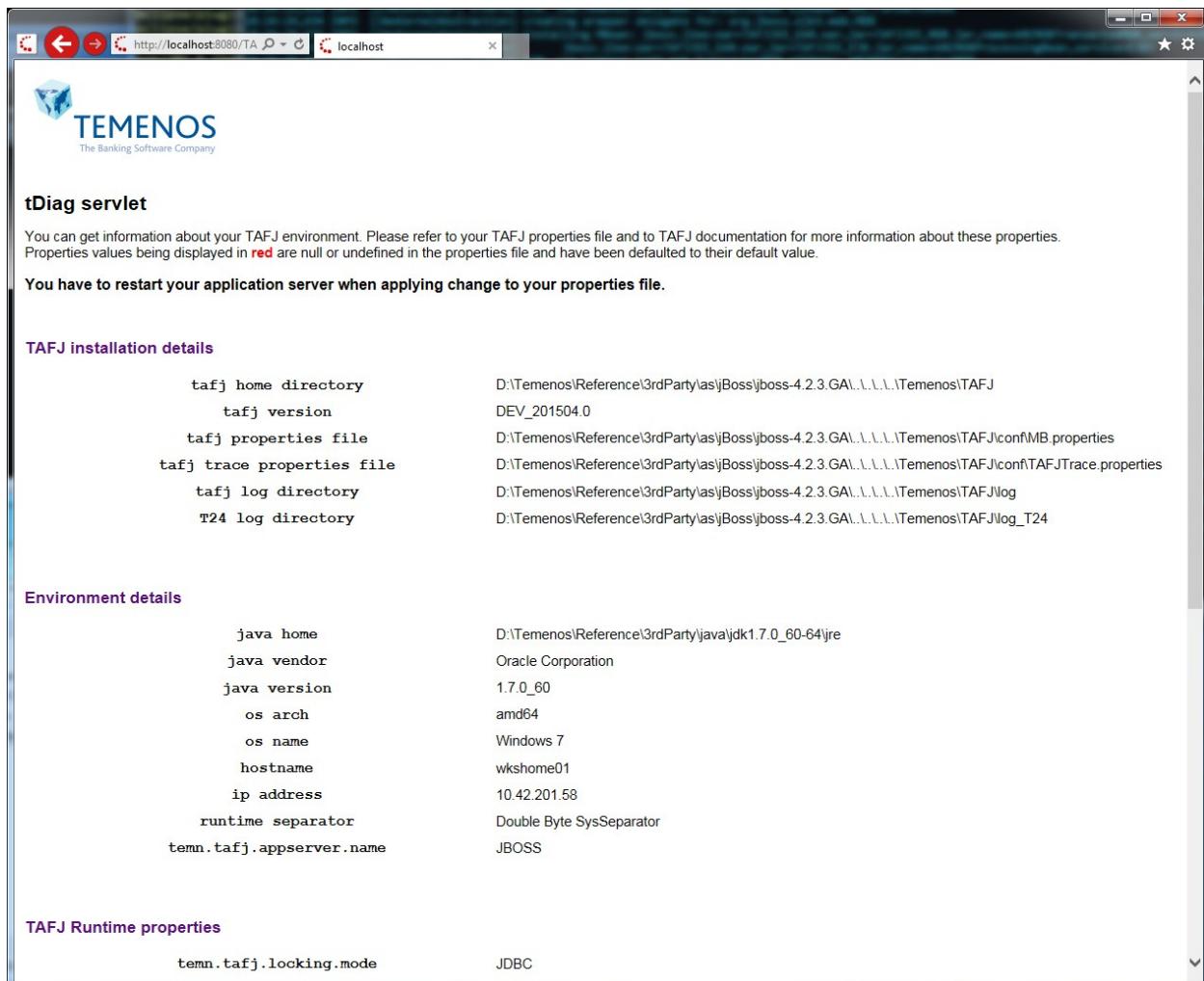
For more information please refer to the **TAFJ-AS TAFJ** documentation.

## tDiag Servlet

TAFJJEE\_WAR\_TAFJ contains a servlet which could be used to get details about TAFJ installation

<http://localhost:8080/TAFJEE/tDiag>

i.e.



The screenshot shows a web browser window with the URL <http://localhost:8080/TAFJEE/tDiag>. The page content is as follows:

**tDiag servlet**  
 You can get information about your TAFJ environment. Please refer to your TAFJ properties file and to TAFJ documentation for more information about these properties.  
 Properties values being displayed in red are null or undefined in the properties file and have been defaulted to their default value.  
 You have to restart your application server when applying change to your properties file.

**TAFJ installation details**

tafj home directory	D:\Temenos\Reference\3rdParty\as\jBoss\jboss-4.2.3.GA\..\..\..\Temenos\TAFJ
tafj version	DEV_201504.0
tafj properties file	D:\Temenos\Reference\3rdParty\as\jBoss\jboss-4.2.3.GA\..\..\..\Temenos\TAFJ\conf\MB.properties
tafj trace properties file	D:\Temenos\Reference\3rdParty\as\jBoss\jboss-4.2.3.GA\..\..\..\Temenos\TAFJ\conf\TAFJTrace.properties
tafj log directory	D:\Temenos\Reference\3rdParty\as\jBoss\jboss-4.2.3.GA\..\..\..\Temenos\TAFJ\log
T24 log directory	D:\Temenos\Reference\3rdParty\as\jBoss\jboss-4.2.3.GA\..\..\..\Temenos\TAFJ\log_T24

**Environment details**

java home	D:\Temenos\Reference\3rdParty\java\jdk1.7.0_60-64\jre
java vendor	Oracle Corporation
java version	1.7.0_60
os arch	amd64
os name	Windows 7
hostname	wkshome01
ip address	10.42.201.58
runtime separator	Double Byte SysSeparator
temn.tafj.appserver.name	JBOSS

**TAFJ Runtime properties**

temn.tafj.locking.mode	JDBC
------------------------	------

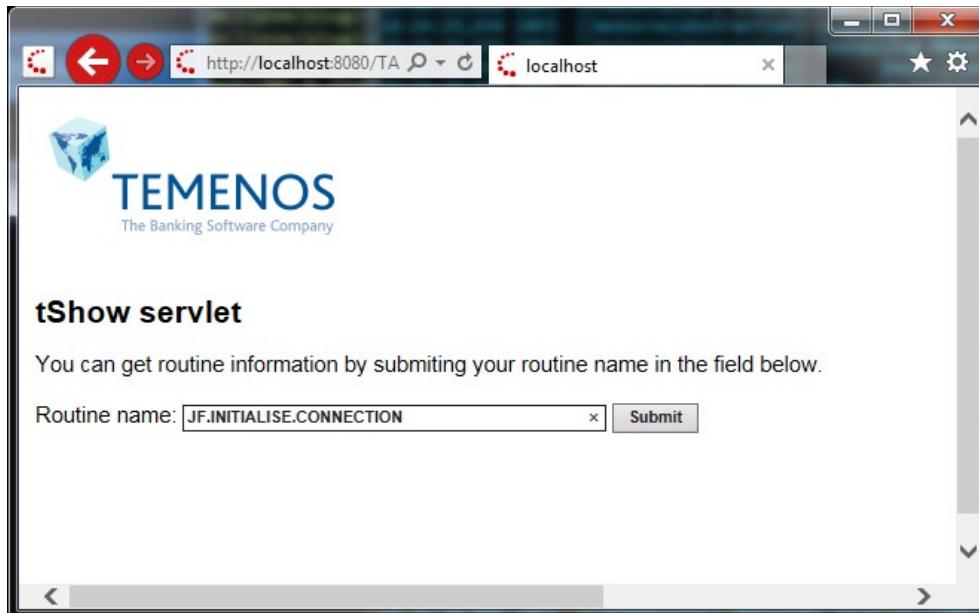
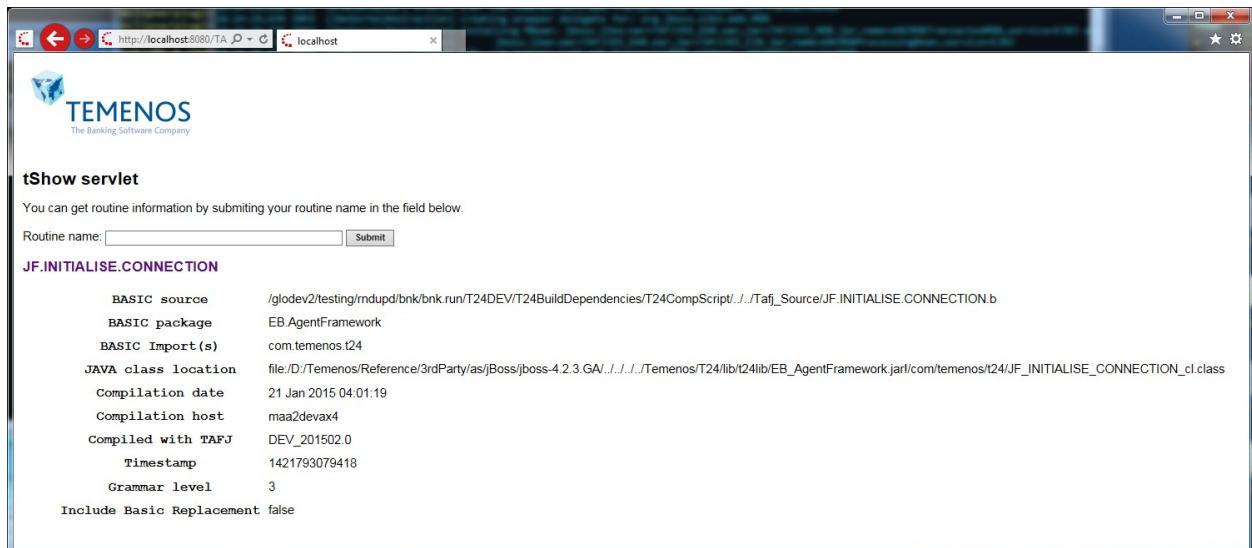
## tShow Servlet

TAFJJEE\_WAR\_TAFJ contains a servlet which could be used to get compilation details about a specific routine

<http://localhost:8080/TAFJEE/tShow>

i.e.

to get details about JF.INITIALISE.CONNECTION

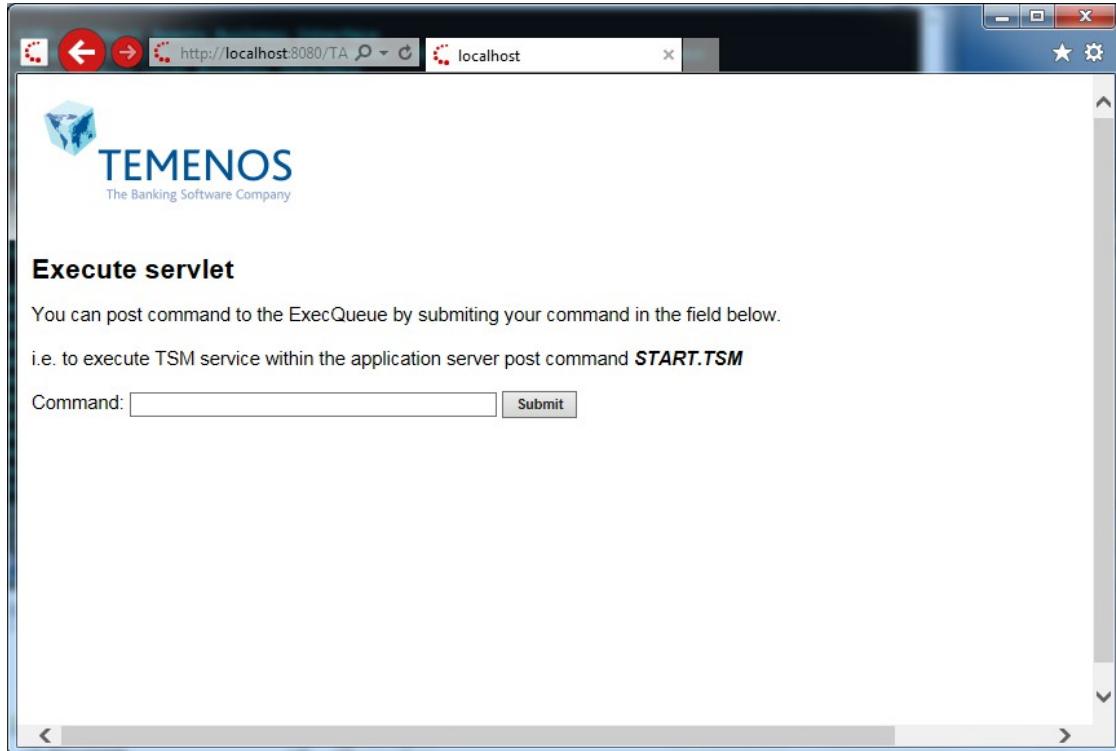



<b>JF.INITIALISE.CONNECTION</b>	
BASIC source	/glodev2/testing/rndupd/bnk/bnk.run/T24DEV/T24BuildDependencies/T24CompScript/../../Tafj_Source/JF.INITIALISE.CONNECTION.b
BASIC package	EB AgentFramework
BASIC Import(s)	com.temenos.t24
JAVA class location	file:/D:/Temenos/Reference/3rdParty/as/jBoss/jboss-4.2.3.GA/J.../Temenos/T24/lib/t24lib/EB_AgentFramework.jar!/com/temenos/t24/JF_INITIALISE_CONNECTION_cl.class
Compilation date	21 Jan 2015 04:01:19
Compilation host	maa2devax4
Compiled with TAFJ	DEV_201502.0
Timestamp	1421793079418
Grammar level	3
Include Basic Replacement	false

## Execute Servlet

TAFJJEE\_WAR\_TAFJ contains a servlet which could be used to post message to the JMS queue t24ExeqQueue.

<http://localhost:8080/TAFJEE/Execute>



i.e.

to post START.TSM submit START.TSM in the form.

Remark:

The following properties need to be set correctly to run TAFJ within an application server context.

temn.tafj.runtime.phantom.as.process = false

## Other TAFJEE functionalities

TAFJEE application offers many other functionalities like monitoring, changing log level, como viewer... please refer to TAFJ AS documentation for detailed information.



## Browser deployment

### Deploying BrowserWeb.war

Click on deployment and install button and select the BrowserWeb.war file.

Click next until BrowserWeb web application file is installed.

The screenshot shows the Oracle WebLogic Server Administration Console. On the left, there's a sidebar titled "Domain Structure" with a tree view. Under "R12", "Environment" is expanded, showing "Deployments" which is also expanded. Other collapsed categories include Services, Security Realms, Interoperability, and Diagnostics. Below the sidebar is a "How do I..." section with links for installing, configuring, and updating enterprise applications. The main area is titled "Summary of Deployments" with tabs for "Control" (which is selected) and "Monitoring". A message says: "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 or deleted from the domain by first selecting the application name and using the controls on this page." It also says: "To install a new application or module for deployment to targets in this domain, click the Install button." Below this is a "Customize this table" section and a "Deployments" table. The table has columns for "Name", "State", "Health", and "Type". It lists two entries: "BrowserWeb" (Web Application, Active, OK) and "TAFJEE\_EAR" (Enterprise Application, Active, OK). There are "Install", "Update", "Delete", "Start", and "Stop" buttons above the table.

Browser the URL : [http://IP\\_Add:7001/BrowserWeb/servlet/BrowserServlet](http://IP_Add:7001/BrowserWeb/servlet/BrowserServlet)

Where IP\_Add is the IP adresse of the Weblogic Server.



## Launch a COB (cluster mode too)

To launch a COB the url would be something similar to the following. If in a cluster mode, you would do this on multiple urls,ie

`http://10.44.245.223:9548/TAFJEE/Execute?command=START.TSM`

<http://10.44.245.224:9548/TAFJEE/Execute?command=START.TSM>

This requires a special setup covered below.



## Weblogic script configuration (cluster) for T24 java deployment

Like single server mode, running a multi-environment can be done using scripts. These scripts do assume a cluster has been set up and named TAFJCluster. This is a prerequisite to run these scripts.

### Setting up Distributed Queues

#### Script Mode:

Run:

```
wlst.sh -loadProperties %TAFJ_HOME%\appserver\weblogic\tafj.properties %TAFJ_HOME%
%appserver\weblogic\TAFJJMS-Distributed.py
```

THEN:

```
wlst.sh -loadProperties %TAFJ_HOME%\appserver\weblogic\tafj.properties %TAFJ_HOME%
%appserver\weblogic\TAFJJMSQUEUE-Distributed.py
```

This will create distributed Round-Robin Queues for use in a cluster for each server in the cluster AND NOT the AdminServer

#### Console Mode:

Create a new Queue and choose Distributed Queue on the following page:

Type in a name and jndi name and click “Next”.



**JMS Distributed Destination Properties**

The following properties will be used to identify your new Distributed Queue. The current module is SystemModule-1

\* Indicates required fields

What would you like to name your new destination?

Name: myTestQ

What JNDI Name would you like to use to look up your new destination?

JNDI Name: jms/myTestQ

Queue members may be either created uniformly from a common configuration, or created and weighted individually to fine tune performance. How would you like to create queue members?

Destination Type: Uniform

Templates provide an efficient means of defining multiple destinations with similar configuration values. Would you like to use a template for this destination?

Template: None

Click “Advanced Targeting” and choose the Subdeployment set up, then click “Finish”

**Create a New JMS System Module Resource**

The following properties will be used to target your new JMS system module resource

Use this page to select a subdeployment to assign this system module resource. A subdeployment is a mechanism by which JMS resources are grouped and targeted to a server instance, cluster, or SAF agent. If necessary, you can create a new subdeployment by clicking the Create a New Subdeployment button. You can also reconfigure subdeployment targets later by using the parent module's subdeployment management page.

Select the subdeployment you want to use. If you select (none), no targeting will occur.

Subdeployments: i24JMSServer1 Create a New Subdeployment

What targets do you want to assign to this subdeployment?

Targets :

- Servers: AdminServer
- Clusters: TAFJCluster
  - All servers in the cluster
  - Part of the cluster
    - ms2
    - ms1
- JMS Servers: JHSServer-1



## Setting up a Grind Link Datasource

To set up a Grind Link Datasource (a datasource that targets an Oracle RAC Cluster), the process is the same as running through a single datasource wizard except you need to click the checkbox “Fan Enabled” and add the host/ports of each node in the RAC.

The URL you should enter will look something like this where TAFJWL is the ORACLE\_SID and the hosts/ports are highlighted below.

```
jdbc:oracle:thin:@(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=TCP)
(HOST=10.44.245.186)(PORT=1521))(ADDRESS=(PROTOCOL=TCP)
(HOST=10.44.245.187 )(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=TAFJWL)))
```



# TAFJ-AS WeblogicInstall v10.3/12.1.x

TEMENOS™

The screenshot shows the Oracle WebLogic Server Administration Console version 12c. The main title bar reads "Messaging in WebLogic Server: Best...". The left sidebar shows the "Domain Structure" with nodes like TAFJ001, Environment, Servers, Clusters, Virtual Hosts, etc. The central panel displays the "Create a New Network Channel" wizard. It asks "How would you like to address your new Network Channel?". The "Listen Address" is set to "10.44.245.223", "Listen Port" is "8081", "External Listen Address" is "10.44.245.223", and "External Listen Port" is "8081". At the bottom, there are "Back", "Next", "Finish", and "Cancel" buttons. The status bar at the bottom indicates "Find: PathService" and navigation buttons.

## Setting Up each node so that TAFJEE.ear can be deployed to the cluster.

When you are running in multi-node mode, each node must understand what its classpath is. If TAFJ is shared, over a network share, then the classpath can be shared using the same directory structure. Otherwise, if TAFJ is installed separately on each node, the directory structures might not match.

There are different ways to achieve this. The most common are presented below. See also **Reference** section.

The recommended one is to follow same mechanism than the one applied for a single server by using script configuration.

### *Using setDomainEnv script – recommended way*

Apply on each node part of the cluster: `node/bin/setDomainEnv` ; the same configuration than presented in section : **Setup Weblogic property file**.

When starting a node the node manager will invoke **startManagedWebLogic.sh** which is invoking **startWeblogic.sh** itself invoking **setDomainEnv.sh** responsible to setup the class path and all other JVM arguments.

For non-Windows installation check the file nodemanager.properties it has to define the **StartScriptEnabled** property and it must be set to true.

### **Reference**

[https://docs.oracle.com/middleware/1212/wls/NODEM/java\\_nodemgr.htm#NODEM178](https://docs.oracle.com/middleware/1212/wls/NODEM/java_nodemgr.htm#NODEM178)

For a non-Windows installation, it might be appropriate to specify the **StartScriptEnabled** and **NativeVersionEnabled** properties.

[http://docs.oracle.com/cd/E24329\\_01/web.1211/e24425/trouble.htm#CLUST535](http://docs.oracle.com/cd/E24329_01/web.1211/e24425/trouble.htm#CLUST535)

Check the CLASSPATH Value

Make sure the value of **CLASSPATH** is the same on all Managed Servers in the cluster. **CLASSPATH** is set by the **setEnv** script, which you run before you run **startManagedWebLogic** to start the Managed Servers.

If you change the value of **CLASSPATH** on one Managed Server, or change how **setEnv** sets **CLASSPATH**, you must change it on all Managed Servers in the cluster.



### Using server start classpath – for reference

You must set the classpath correctly for each separate node. (Note the reference to weblogic.jar and watch for service packs as well!)

You would do this for each server under the path: Environment→Servers→(Your server name)→Server Start tab.

An example: Current classpath (subject to change) is

```
/opt/oracle/middleware/wlserver_12.1/server/lib/weblogic.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/T24CollectorClient.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/TAFJCommon.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/TAFJCompiler.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/TAFJCore.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/TAFJLocking.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/TAFJTelnetD.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/TAFJVersion.jar:/u01/TAFJ/TAFJ.R13_SP2/ext/TAFJBASIC.jar:/u01/TAFJ/TAFJ.R13_SP2/ext/tComponentFramework.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/log4j.jar:/u01/TAFJ/TAFJ.R13_SP2/lib/antlr.jar:/u01/TAFJ/TAFJ.R13_SP2/dbdrivers/oracle-11g/xmlparserv2.jar:/u01/TAFJ/TAFJ.R13_SP2/T24/Component/R12GAMB_r13_2.jar:/u01/TAFJ/TAFJ.R13_SP2/T24/Component/t24-ChargeService.jar:/u01/TAFJ/TAFJ.R13_SP2/T24/Component/t24-Data.jar:/u01/TAFJ/TAFJ.R13_SP2/T24/Component/t24-CustomerService.jar:/u01/TAFJ/TAFJ.R13_SP2/T24/Component/t24-CustomerService-Data.jar
```

The screenshot shows the Oracle WebLogic Server Administration Console interface. The left sidebar displays the domain structure for 'TAFJDom'. The main content area is titled 'Settings for ms1' and shows the 'Server Start' tab selected. The 'classpath' field contains the following entries:

```
/opt/oracle/middleware/wlserver_12.1/server
/lib/weblogic.jar:/u01/TAFJ/TAFJ.R13_SP2
/lib/T24CollectorClient.jar:/u01/TAFJ/TAFJ.R13_SP2
/lib/TAFJCommon.jar:/u01/TAFJ/TAFJ.R13_SP2
/lib/TAFJCompiler.jar:/u01/TAFJ/TAFJ.R13_SP2
/lib/TAFJCore.jar:/u01/TAFJ/TAFJ.R13_SP2
/lib/TAFJLocking.jar:/u01/TAFJ/TAFJ.R13_SP2
```



## Load Balancing

Turn Server Affinity off to load balance across distributed queues for transactional queues such as OFSQueue and OFSReplyQueue. DO NOT do it for the specific connection factory set up for t24EXECQueue however, which instead should have Server Affinity on and Load Balancing off. See, "Setting up t24ExecQueue for multi-node"

The screenshot shows the Oracle WebLogic Server Administration Console interface. On the left, there's a navigation tree with sections like 'Domain Structure', 'System Status', and 'How do I...'. The main content area is titled 'Settings for ConnectionFactory-1' and has tabs for 'Configuration', 'Subdeployment', and 'Notes'. The 'Configuration' tab is selected, and within it, the 'Load Balance' tab is active. There are two checkboxes: 'Load Balancing Enabled' (which is checked) and 'Server Affinity Enabled' (which is unchecked). Below these checkboxes is a 'Save' button. A note above the checkboxes says: 'Use this page to define the load balancing configuration parameters for this JMS connection factory, which includes enabling load balancing and server affinity.' To the right of the checkboxes, there are detailed descriptions for each setting.

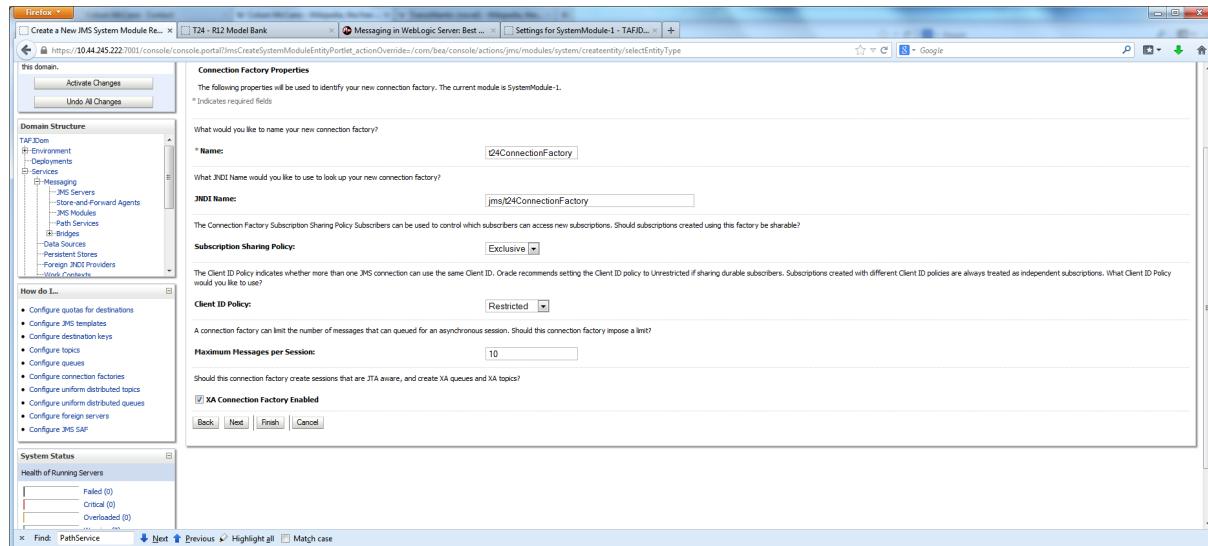
**Server Affinity Enabled** Specifies whether a server instance that is load balancing consumers or producers across multiple members destinations of a distributed destination, will first attempt to load balance across any other physical destinations that are also running on the same server instance.

MBean Attribute (Does not apply to application modules) :  
[LoadBalancingParamsBean.ServerAffinityEnabled](#)

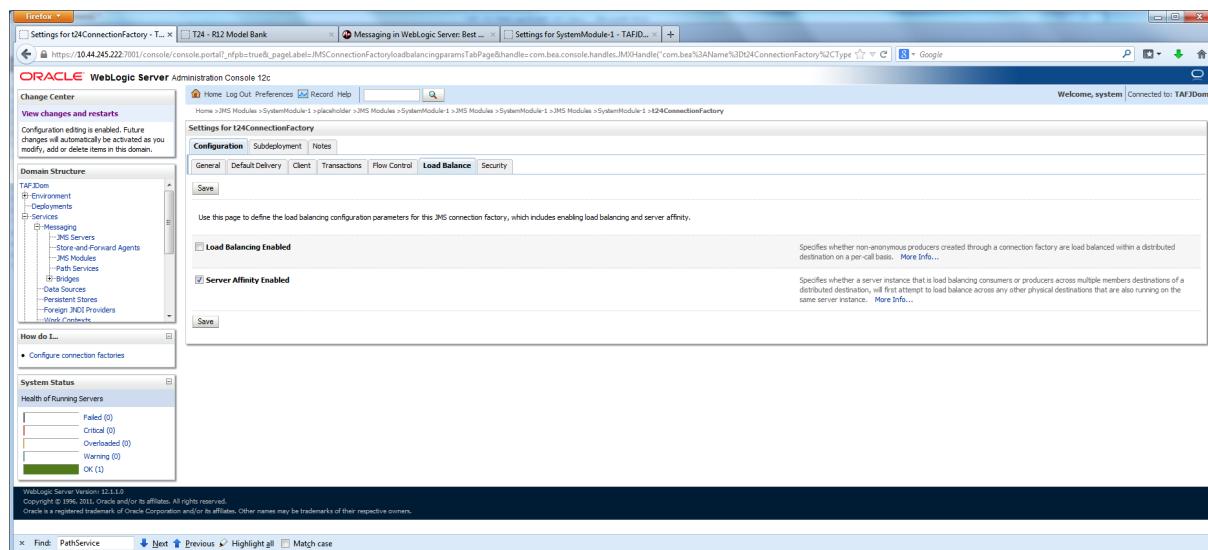
## Setting Up t24ExecQueue for multi-node

### Creating a new Connection Factory for t24ExecQueue called t24ConnectionFactory

Create a new connection factory specifically for t24ExecQueue. Take the defaults and run through the wizard without going to “Advanced Targeting”. (You want to use the subdeployment)



Once the connection factory is created, uncheck the “Load Balancing Enabled” as each message will be targeted to each node.



### Update WAR file

In TAFJEE\_WAR\_TAFJ.war update weblogic.xml in the WEB-INF directory. This maps to the new connection factory.

```
<?xml version="1.0" encoding="UTF-8"?>
```

---

```

<weblogic-web-app>

    <!-- xmlns="http://www.bea.com/ns/weblogic/90"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
            xsi:schemaLocation="http://www.bea.com/ns/weblogic/90
            http://www.bea.com/ns/weblogic/90/weblogic-web-app.xsd

            http://java.sun.com/xml/ns/j2ee http://java.sun.com/xml/ns/j2ee/web-
            app_2_4.xsd" -->

        <resource-description>
            <res-ref-name>jms/TAFJQueueConnectionFactory</res-ref-name>
            <jndi-name>jms/t24ConnectionFactory</jndi-name>
        </resource-description>
        <resource-description>
            <res-ref-name>jms/t24EXECQueue</res-ref-name>
            <jndi-name>jms/t24EXECQueue</jndi-name>
        </resource-description>
        <!-- UNCOMMENT TO HAVE TAFJMonitor Link <ejb-reference-description> <ejb-ref-
name>MonitorBeanRef</ejb-ref-name>
            <jndi-name>ejb/MonitorBeanLocal</jndi-name> </ejb-reference-description>
-->
        <!-- A template configuration to secure the webApp in Jboss with jboss admin
            role <security-domain>java:/jaas/jmx-console</security-domain> -->
    </weblogic-web-app>

```

#### *Update EAR file*

In TAFJEE\_MDB.jar update weblogic-ejb-jar.xml in META-INF directory to

```

<wls:weblogic-enterprise-bean>
    <wls:ejb-name>TAFJPhantomListenerMDB</wls:ejb-name>
    <wls:message-driven-descriptor>
        <wls:pool>
            <wls:max-beans-in-free-pool>96</wls:max-beans-in-free-pool>
            <wls:initial-beans-in-free-pool>4</wls:initial-beans-in-free-pool>
        </wls:pool>
    </wls:message-driven-descriptor>

```

```
<!-- Oracle Benchmark

<wls:dispatch-policy>MDBTWM</wls:dispatch-policy>

-->

<wls:resource-description>

    <wls:res-ref-name>jdbc/t24DataSource</wls:res-ref-name>

    <wls:jndi-name>jdbc/t24DS</wls:jndi-name>

</wls:resource-description>

<wls:resource-description>

    <wls:res-ref-name>jdbc/t24LockingDataSource</wls:res-ref-name>

    <wls:jndi-name>jdbc/t24LockingDS</wls:jndi-name>

</wls:resource-description>

<wls:resource-description>

    <wls:res-ref-name>jms/t24EXECQueue</wls:res-ref-name>

    <wls:jndi-name>jms/t24EXECQueue</wls:jndi-name>

</wls:resource-description>

<wls:resource-description>

    <wls:res-ref-name>jms/TAFJQueueConnectionFactory</wls:res-ref-
name>

    <wls:jndi-name>jms/t24ConnectionFactory</wls:jndi-name>

</wls:resource-description>

<wls:resource-description>

    <wls:res-ref-name>jms/TopicConnectionFactory</wls:res-ref-name>

    <wls:jndi-name>jms/ConnectionFactory</wls:jndi-name>

</wls:resource-description>

<wls:resource-description>

    <wls:res-ref-name>jms/tecEventsTopic</wls:res-ref-name>

    <wls:jndi-name>jms/tecEventsTopic</wls:jndi-name>

</wls:resource-description>

</wls:weblogic-enterprise-bean>
```



## Setting up TSA.SERVICE for multi-node COB

First we make TSM to know that there are 2 nodes by specifying the names of two nodes on F.TSA.SERVICE>TSM record.

Note : I am using a zero auth version here for TSA.SERVICE, (If zero auth version is not available you need to commit and authorise the record using another T24 User.)

The screenshot shows a Firefox browser window with the following details:

- Address bar: T24 - R12 Model Bank
- URL: https://10.44.245.223:7001/BrowserWeb/servlet/BrowserServlet
- Page Content:
  - INPUTTER Last signed on 03 OCT 2013 at 01:36 with 0 attempt(s)
  - Help
  - Tools
  - Sign Off
  - TSA SERVICE, I TSM (selected)
  - User Menu
  - Admin Menu
  - Role Based Home pages

Multi-value the Servername field and specify the names of servers. This must match to the unix hostname command given on the node. In the example below, the servers are ms1 and ms2.

TSA.SERVICE, - Mozilla Firefox  
 https://10.44.245.223:7001/BrowserWeb/servlet/BrowserServlet#1

More Actions ...  
  
 TSA.SERVICE, TSM (R12 Model Bank)

Description.1	<input type="text"/> TSM Record for running upgrade as service	WORK LOAD PROFILE FOR TSM
Server name.1	<input type="text"/> ms1	
Work profile.1	<input type="text"/> TSM	
Server status.1	<input type="text"/>	
Server name.2	<input type="text"/> ms2	WORK LOAD PROFILE FOR TSM
Work profile.2	<input type="text"/> TSM	
Server status.2	<input type="text"/>	
User	<input checked="" type="text"/> * INPUTTER	INPUTTER
Service control	<input type="radio"/> [None] <input type="radio"/> Auto <input checked="" type="radio"/> Start <input type="radio"/> Stop	
Review time	<input type="text"/>	
Time out	<input type="text"/>	
Attribute type.1	<input type="text"/>	
Attribute value.1	<input type="text"/>	
Frequency	<input type="text"/>	
Reserved 8	<input type="text"/>	

Commit the record.

TSA.SERVICE, - Mozilla Firefox  
 https://10.44.245.223:7001/BrowserWeb/servlet/BrowserServlet#1

More Actions ...  
  
 TSA.SERVICE, | (R12 Model Bank)

Txn Complete: TSM 01:49:31 03 OCT 2013 TSA.SERVICE, I

Now, we do the same for COB record as well.

F.TSA.SERVICE>COB

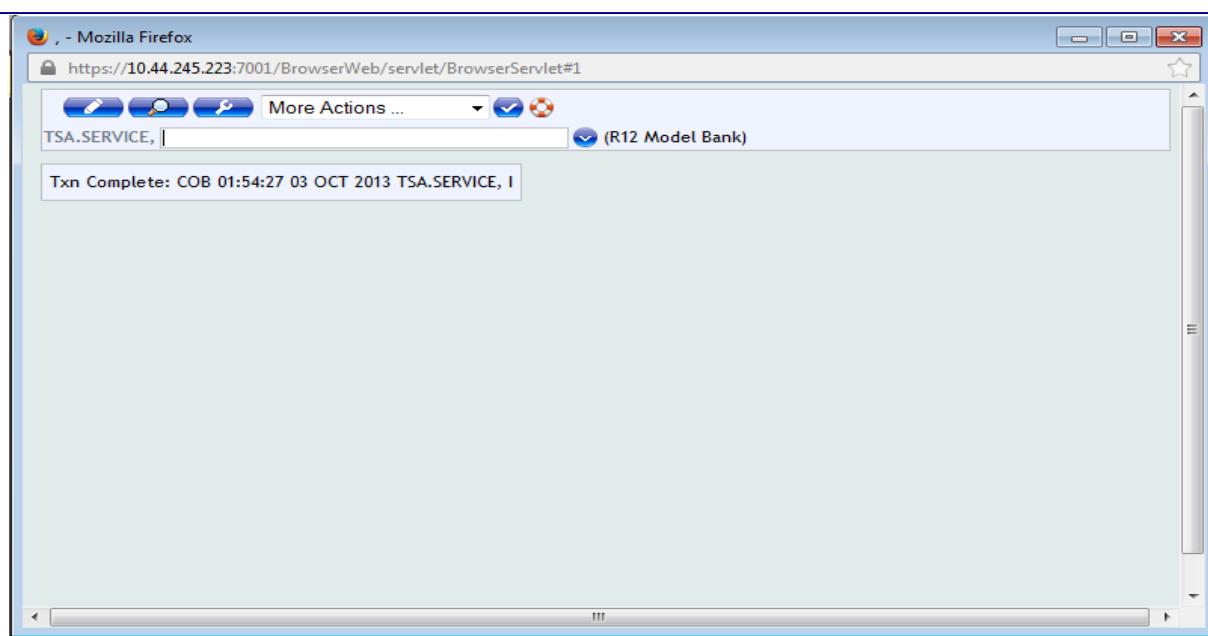


Note : If you want to run a COB on single company, then you need to do the modification on record COB-<companyname> , i.e COB-GB0010001

Specify the name of servers by multivalue the Servername field on COB record.

Here you can specify the number of agents that need to run on each node by providing an appropriate WORK.LOAD.PROFILE record. (currently we are using TWO here for both the servers).

Commit the record.



## Appendix

### Analyzing MBeans with jConsole

Start jconsole like the below:

```
jconsole -J-Djava.class.path=%JAVA_HOME%\lib\jconsole.jar;%WL_HOME%\wlserver_12.1\server\lib\wljmxclient.jar -J-Djmx.remote.protocol.pkgs=weblogic.management.remote
```

Once connected, login with  
service:jmx:iiop://localhost:7001/jndi/weblogic.management.mbeanservers.runtime

Then enter the user/password you use to login with for Weblogic Admin console

### Setting up Weblogic Http Channels.

Environment→Servers→click your server name.

Then you should see a screen below after clicking the “Protocols” tab. Click “New” and follow the wizard. Give it a name, choose “http” for your protocol dropdown, and fill in

Listen Address:	<input type="text"/>
Listen Port:	<input type="text" value="7001"/>
External Listen Address:	<input type="text"/>
External Listen Port:	<input type="text" value="7001"/>

For the below example, we used the same for listen address/port as external listen address/port.



Name	Protocol	Enabled	Listen Address	Listen Port	Public Address	Public Port
ExternalChannel	t3s	true	10.44.245.224	7001	10.44.245.224	7001
httpsChannels2	http	true	10.44.245.224	8081	10.44.245.224	8081

## Setting up Weblogic with MQ Series

Please refer to the quick guide: [\*Oracle Weblogic with IBM Websphere MQ.\*](#)

### References:

[http://docs.oracle.com/cd/E24329\\_01/web.1211/e24385/advance\\_config.htm#i1081815](http://docs.oracle.com/cd/E24329_01/web.1211/e24385/advance_config.htm#i1081815)

<http://mokandra.blogspot.fr/2012/08/integrating-websphere-mq-6-with-bea.html>

From IBM

[http://www.ibm.com/developerworks/websphere/library/techarticles/0604\\_kesavan/0604\\_kesavan.html](http://www.ibm.com/developerworks/websphere/library/techarticles/0604_kesavan/0604_kesavan.html)