TEMENOS™



# TAFJ-AS JBoss install 4.2.3 GA jdk6

## R14/R15

10/3/2015

Temenos

**Amendment History:**

| Revision | Date Amended | Name | Description |
|---|---|---|---|
| 1 | 1st April 2011 | TAFJ team | Initial version |
| 2 | 6th October 2011 | TAFJ team | Deployment |
| 3 | 7st February 2012 | H. Aubert | R12GA review |
| 4 | 15th January 2013 | JN. Charpin | R13GA review |
| 5 | 13th February 2014 | JN. Charpin | R14GA review |
| 6 | 14th March 2014 | JN. Charpin | Pooling review |
| 7 | 19th March 2014 | JN. Charpin | Servlet review |
| 8 | 6th March 2015 | H. Aubert | R15 AMR review |

## Copyright



## 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:
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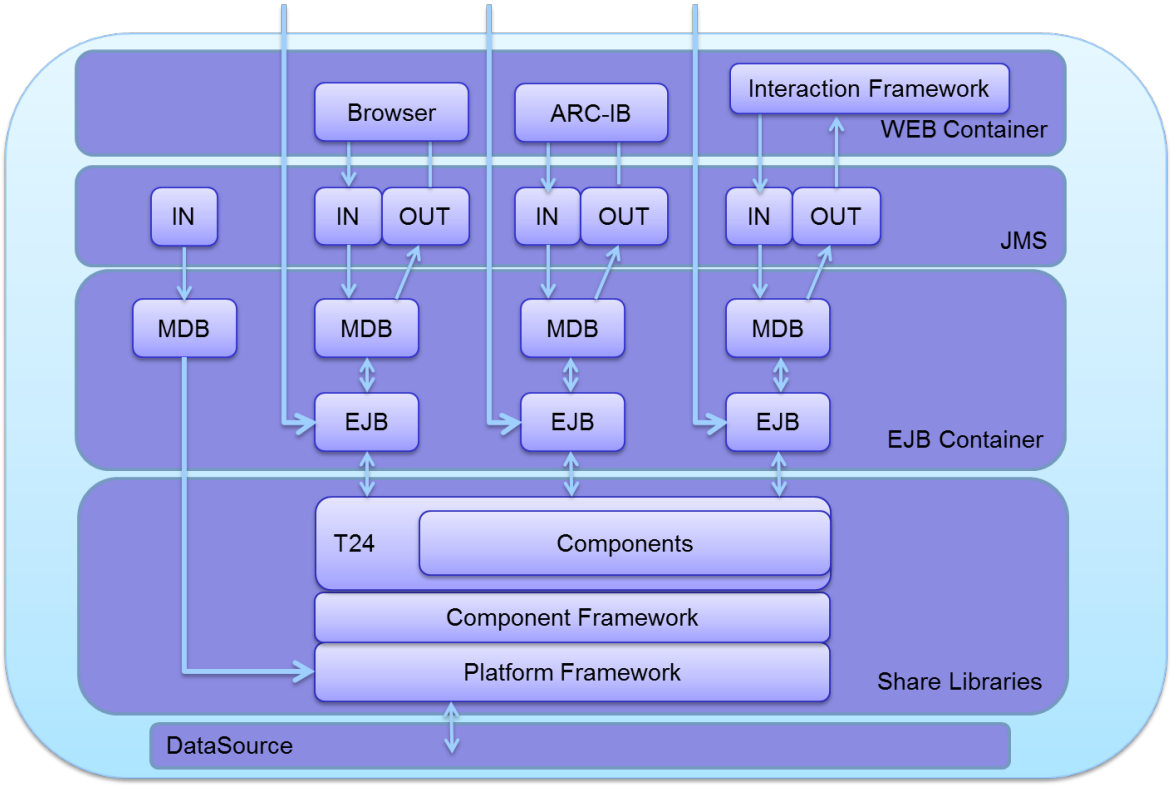
## T24 Java deployment in JBoss v4.2

### Infrastructure



**!! WARNING !!**

**The version of jBoss 4.2.3 is depreciated for R15. It will not be supported with R16.**

## JBoss Installation

Either get a zip file of jBOSS from TAFJDev@temenos.com or go to http://www.jboss.org/jbossas/downloads/ site and downloads jboss-4.2.3.GA-jdk6.zip.

Unzip jBOSS to a directory. This directory will be called in the document ***JBOSS_HOME***.

## Prerequisite

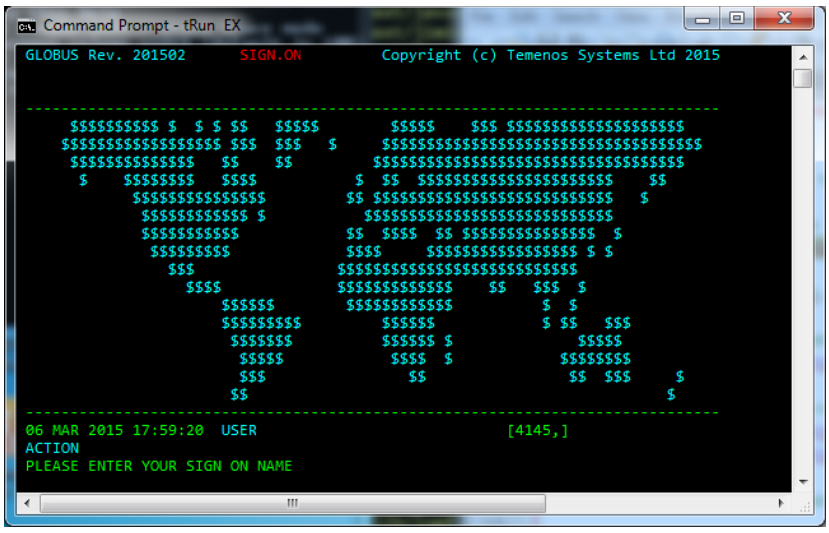
T24 precompiled jar files have to be in a folder that we call in the document ***T24_HOME***.

TAFJ JBOSS Configuration files are preconfigured to find T24 under a path relative to ***JBOSS_HOME*** : ${jboss.home.url}../../../T24/lib

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

TAFJ JBOSS Configuration files are preconfigured to find TAFJ under a path relative to ***JBOSS_HOME*** ${jboss.home.url}../../../TAFJ

Before configute your Jboss with TAFJ/T24, check your standalone installation is working.



# JBoss v4.2.3 configuration for T24 solution with TAFJ

## Default memory setting

We need to increase the default memory configuration.

On Windows, in JBOSS_HOME\bin\run.bat change line :

```
set JAVA_OPTS=%JAVA_OPTS% -Xms128m -Xmx512m
```

with

```
set JAVA_OPTS=%JAVA_OPTS% -Xms256m –Xmx1024m -XX:MaxPermSize=256m
```

On Unix, in JBOSS_HOME\bin\run.conf change line 43:

```
JAVA_OPTS="-Xms128m -Xmx512m –Dsun …
```

With

```
JAVA_OPTS="-Xms256m –Xmx1024m -XX:MaxPermSize=256m –Dsun …
```

## UAT / Production Memory setting

**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

## Environment and JMS configuration

Copy the file ***TAFJ_HOME*\appserver\jboss\jboss4\tafj-service.xml** in ***JBOSS_HOME*\server\default\deploy** folder.

This file configures:

1. The classpath. T24 jars, TAFJ jars, database drivers and additional jars you may need.
2. Mandatory system property tafj.home to specify ***TAFJ_HOME*** location.
3. Additional system property like file encoding…
4. JMS resources:
    a. default JMS queues used for Temenos products in reply/request patern,
        i. BROWSER,
        ii. ARC-IB,
        iii. SEAT injection,
        iv. CALL_AT subroutine,
    b. EXEC queue to launch T24 Phantom
    c. TEC topics for T24 Monitor purpose.

Remark: If you don't install TAFJ, T24 precompiled file in the recommend folder please update the paths in your tafj-service.xml

These paths are relative to the JBOSS_HOME folder

i.e:

***TAFJ_HOME = ${jboss.home.url}/../TAFJ_HOME*** means TAFJ is deployed at same level than JBOSS_HOME.

The library and JMS setup is done. Next step is the configuration of the database connection(s).

## Datasource configuration

Copy the file **TAFJ_HOME\appserver\jboss\jboss4\t24_ds.xml** in **JBOSS_HOME\server\default\deploy** folder.

**When you setup the datasource you have to use the drivers provided with the database. The drivers under %TAFJ_HOME %\DBDrivers are just helper. We cannot guaranty the drivers we provide with TAFJ are working with the specific database version you are using.**

This file configures datasource resources. Two datasources need to be configured

1. One transactional datasource for T24 RDBMS.
2. second for TAFJ locking datasource when using locking mode JDBC or ORCL (this datasource is in autocommit mode and is not transactional).

Uncomment and set the database options which match your database server.

i.e.

For oracle:

```
<local-tx-datasource>
        <jndi-name>jdbc/t24DS</jndi-name>
        <connection-url>jdbc:oracle:thin:@[hostname]:[port]:[dbname]</connection-url>
        <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
        <user-name>[user]</user-name>
        <password>[password]</password>
        <min-pool-size>2</min-pool-size>
        <max-pool-size>10</max-pool-size>
        <idle-timeout-minutes>5</idle-timeout-minutes>
        <exception-sorter-class-
name>org.jboss.resource.adapter.jdbc.vendor.OracleExceptionSorter</exception-sorter-class-
name>
        <metadata>
                <type-mapping>Oracle11g</type-mapping>
        </metadata>
</local-tx-datasource>
```

Replace [hostname], [port], [dbname], [user], [password] respectively by hostname, port, ORACLE_SID, oracle user and oracle password for oracle connection.

### *Using the JDBC Locking Mechanism*

Same as main T24 locking datasource except this one is a non-transactional datasource, see the red tag below.

```
<!-- JDBC Locking mecanism   -->
<no-tx-datasource>
      <jndi-name>jdbc/t24LockingDS</jndi-name>
       <!-- copy the params from t24DS   -->
</no-tx-datasource>
```

Copy the param you did setup for the transactional datasource

i.e

```
<!-- JDBC Locking mecanism   -->
<no-tx-datasource>
       <jndi-name>jdbc/t24LockingDS</jndi-name>
       <connection-url>jdbc:oracle:thin:@[hostname]:[port]:[dbname]</connection-url>
       <driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
       <user-name>[user]</user-name>
       <password>[password]</password>
       <min-pool-size>2</min-pool-size>
       <max-pool-size>10</max-pool-size>
       <idle-timeout-minutes>5</idle-timeout-minutes>
       <exception-sorter-class-
name>org.jboss.resource.adapter.jdbc.vendor.OracleExceptionSorter</exception-sorter-class-
name>
       <metadata>
              <type-mapping>Oracle11g</type-mapping>
       </metadata>
</no-tx-datasource>
```

## TAFJ Application deployment

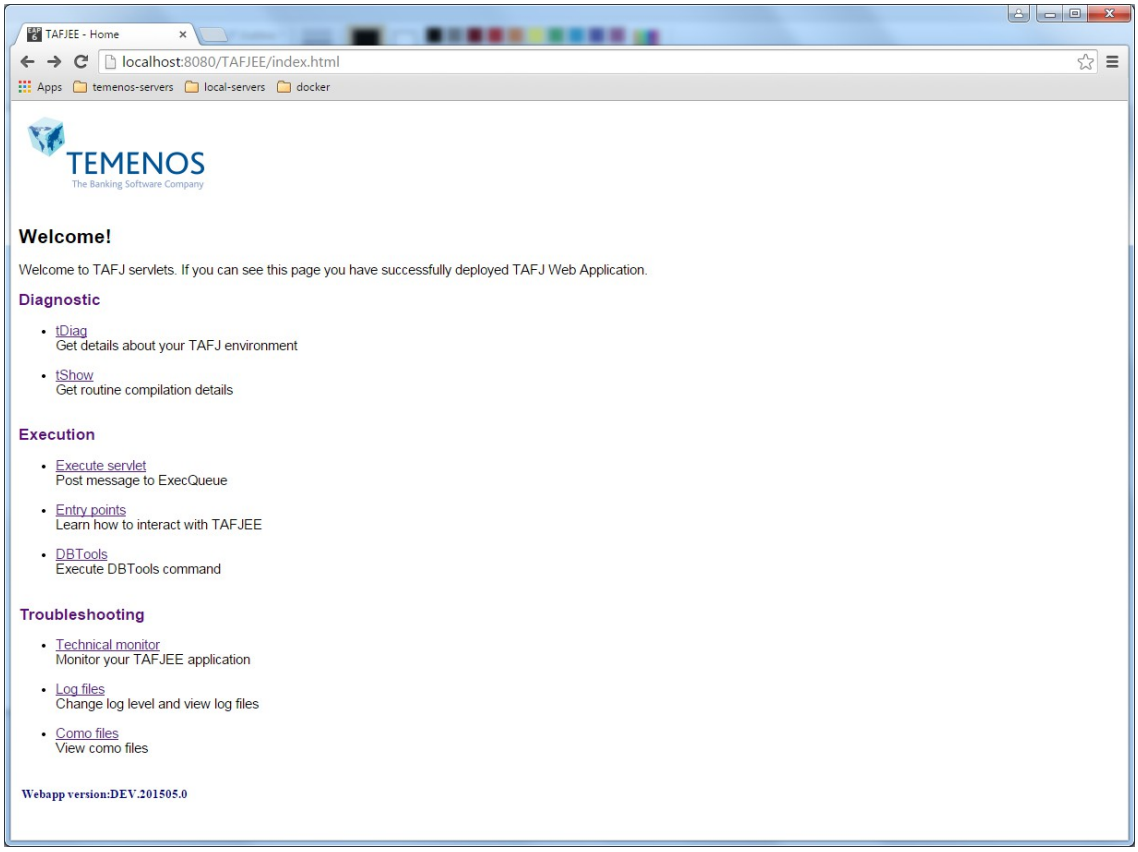
Copy ***TAFJ_HOME*\appserver\jboss\jboss4\TAFJJEE_EAR.ear** in **JBOSS_HOME\server\default\deploy** folder.

Copy ***TAFJ_HOME*\appserver\jboss\jboss4\ tafj-aop.xml** in **JBOSS_HOME\server\default\deploy** folder.

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



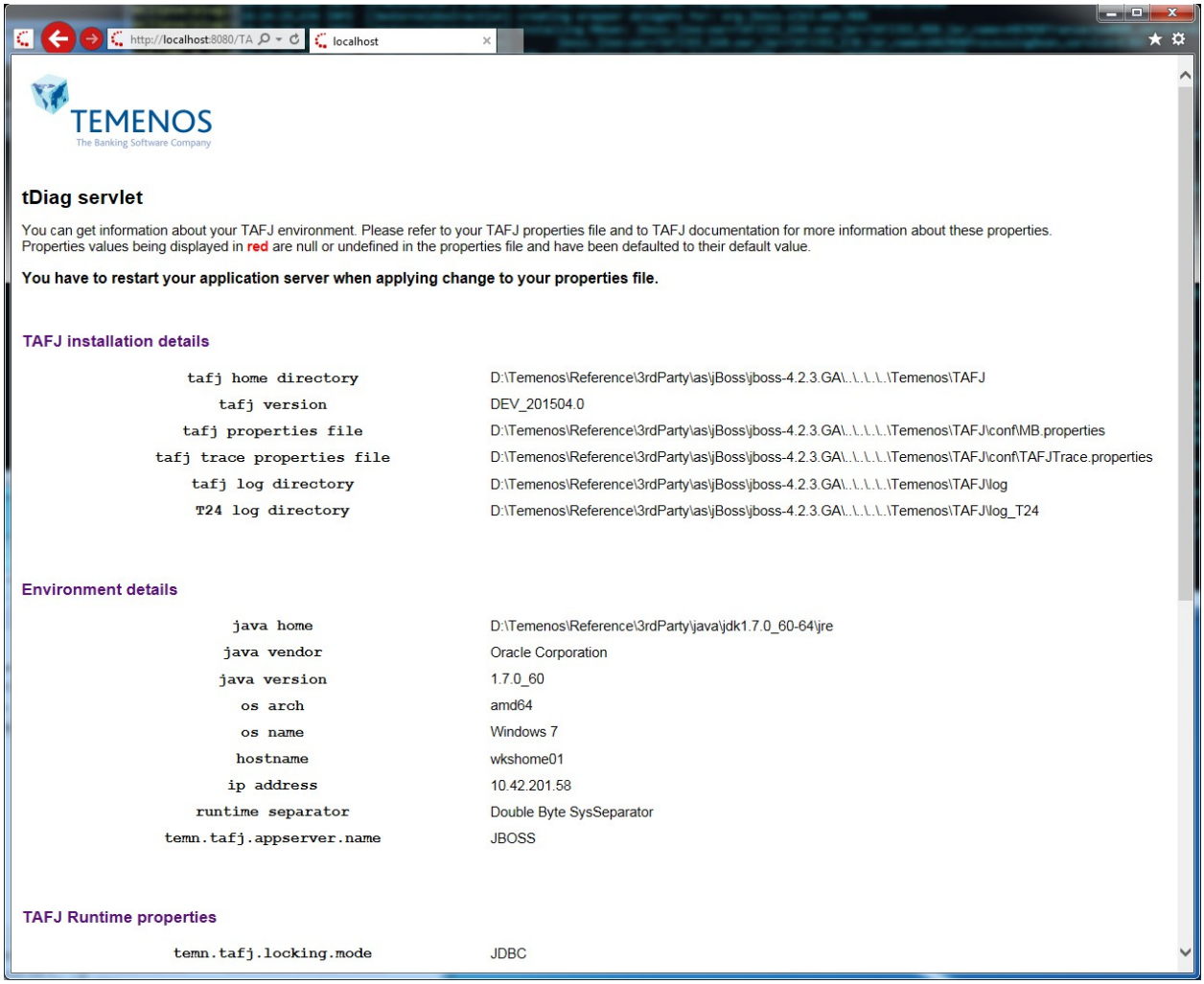

For more information please refer to the **TAFJ-AS TAFJ** documentation.

### 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.



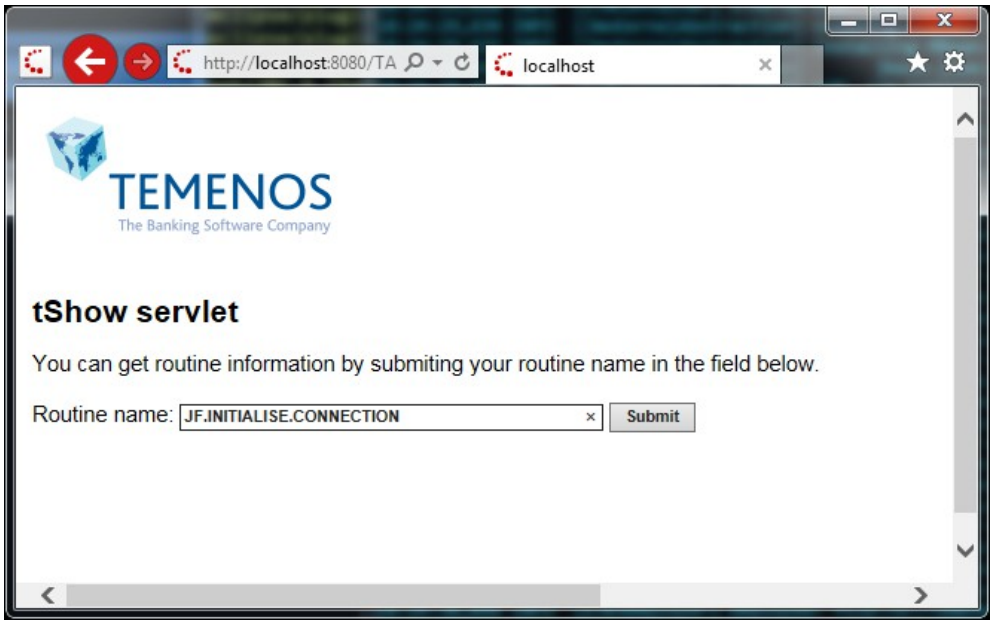
### tShow Servlet

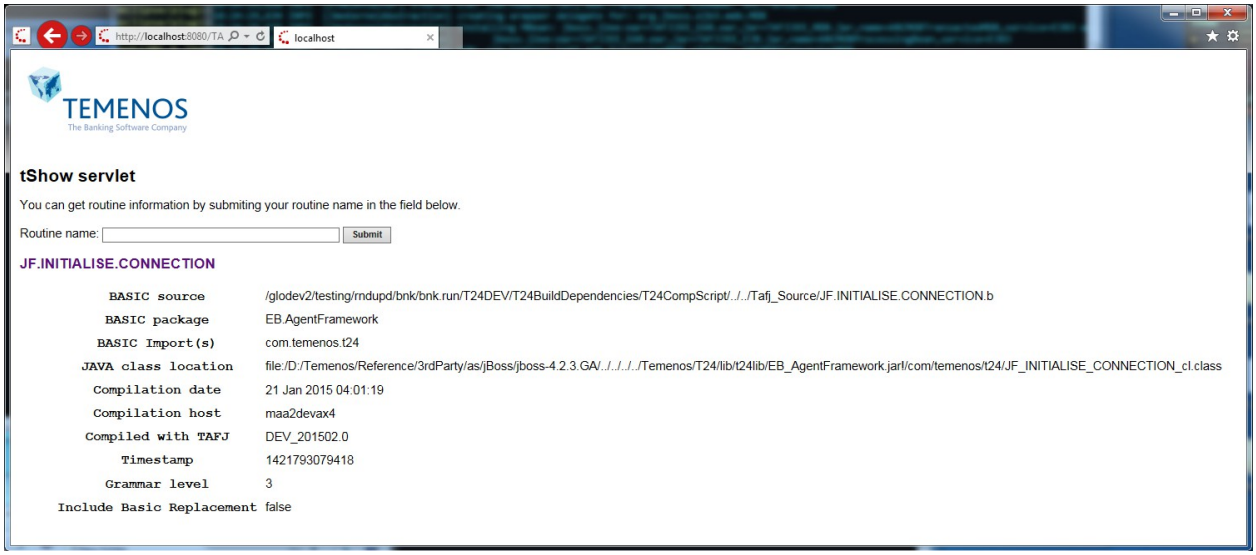
TAFJJEE_WAR_TAFJ contains a servlet which could be used to get compilation details about a specific routine

http://localhost:8080/TAFJEE/tShow

i.e.

to get details about JF.INITIALISE.CONNECTION

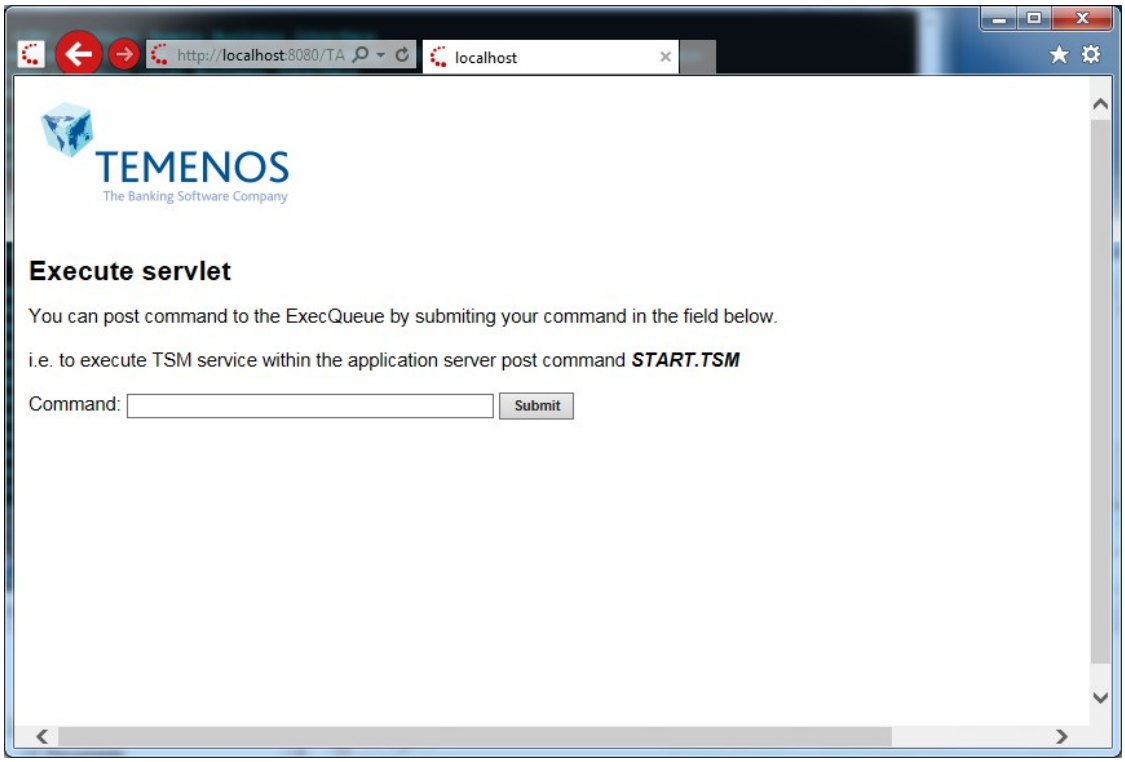


### Execute Servlet

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 and display log file content, como viewer … please refer to TAFJ AS documentation for detailed information.

## T24 Application deployment

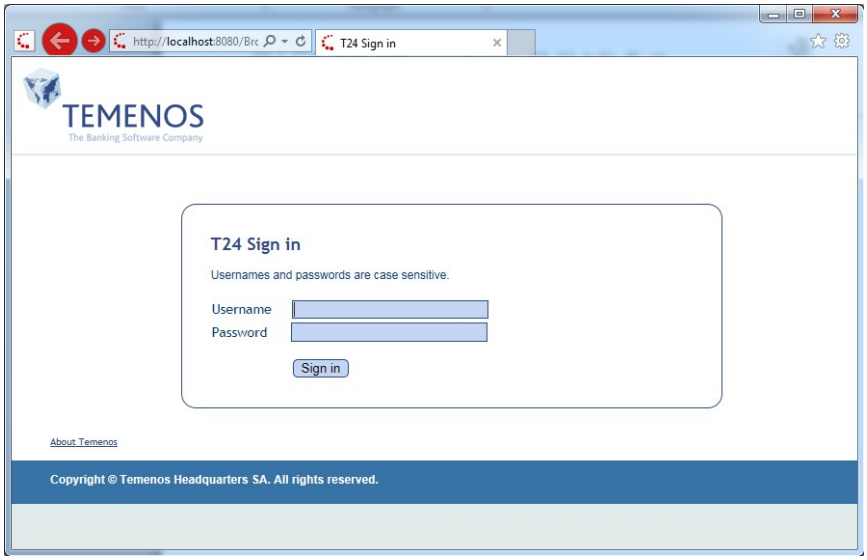
### BROWSER Application

With regards to using Browser, you first need to unpack it to $JBOSS_HOME/server/default/deploy. Then you need to get rid of the JCA jar if it is deployed to your jboss (generally it won't be) and ensure that browserParameters.xml is set to JMS like below…

```
<parameter>
      <parameterName>Server Connection Method</parameterName>
      <parameterValue>JMS</parameterValue>
      <!-- Options: INSTANCE / AGENT / JMS -->
</parameter>
```

Browse servlet Browser

http://localhost:8080/BrowserWeb/servlet/BrowserServlet



## Verify deployment

You can verify that you successfully configured all JEE resources by browsing http://localhost:8080/jmx-console/

For MDB/EJB deployment:

### jboss.j2ee

- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_MDB.jar,name=ARCIBTransactedMDB,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_MDB.jar,name=CallAtTransactedMDB,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_MDB.jar,name=SEATTransactedMDB,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_MDB.jar,name=TAFJPhantomListenerMDB,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_MDB.jar,name=TWSTransactedMDB,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_MDB.jar,name=TransactedMDB,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_T24.jar,name=ARCIBProcessingBean,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_T24.jar,name=CallAtProcessingBean,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_T24.jar,name=MonitorBean,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_T24.jar,name=OFSProcessingBean,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_T24.jar,name=SEATProcessingBean,service=EJB3
- ear=TAFJJEE_EAR.ear,jar=TAFJJEE_T24.jar,name=TWSProcessingBean,service=EJB3
- module=TAFJJEE_MDB.jar,service=EJB3
- module=TAFJJEE_T24.jar,service=EJB3
- service=ClientDeployer
- service=EARDeployer
- service=EARDeployment,url='TAFJJEE_EAR.ear'

For Datasources:

## jboss.jca

- name='jboss-ha-local-jdbc.rar',service=RARDeployment
- name='jboss-ha-xa-jdbc.rar',service=RARDeployment
- name='jboss-local-jdbc.rar',service=RARDeployment
- name='jboss-xa-jdbc.rar',service=RARDeployment
- name='jms-ra.rar',service=RARDeployment
- name='mail-ra.rar',service=RARDeployment
- name='quartz-ra.rar',service=RARDeployment
- name=DefaultDS,service=DataSourceBinding
- name=DefaultDS,service=LocalTxCM
- name=DefaultDS,service=ManagedConnectionFactory
- name=DefaultDS,service=ManagedConnectionPool
- name=JmsXA,service=ConnectionFactoryBinding
- name=JmsXA,service=ManagedConnectionFactory
- name=JmsXA,service=ManagedConnectionPool
- name=JmsXA,service=TxCM
- name=jdbc/t24DS,service=DataSourceBinding
- name=jdbc/t24DS,service=LocalTxCM
- name=jdbc/t24DS,service=ManagedConnectionFactory
- name=jdbc/t24DS,service=ManagedConnectionPool
- name=jdbc/t24LockingDS,service=DataSourceBinding
- name=jdbc/t24LockingDS,service=LocalTxCM
- name=jdbc/t24LockingDS,service=ManagedConnectionFactory
- name=jdbc/t24LockingDS,service=ManagedConnectionPool
- service=CachedConnectionManager
- service=ConnectionFactoryDeployer
- service=RARDeployer
- service=WorkManager
- service=WorkManagerThreadPool

For JMS Ressources:

## jboss.mq.destination

- name=A,service=Queue
- name=B,service=Queue
- name=C,service=Queue
- name=D,service=Queue
- name=DLQ,service=Queue
- name=ex,service=Queue
- name=integrationEventQueue,service=Queue
- name=monitorEventQueue,service=Queue
- name=securedTopic,service=Topic
- name=t24ARCIBQueue,service=Queue
- name=t24ARCIBReplyQueue,service=Queue
- name=t24CALLATQueue,service=Queue
- name=t24CALLATReplyQueue,service=Queue
- name=t24EXECQueue,service=Queue
- name=t24MonitorQueue,service=Queue
- name=t24OFSQueue,service=Queue
- name=t24OFSReplyQueue,service=Queue
- name=t24SEATQueue,service=Queue
- name=t24SEATReplyQueue,service=Queue
- name=t24TWSQueue,service=Queue
- name=t24TWSReplyQueue,service=Queue
- name=tecEvents,service=Topic
- name=testDurableTopic,service=Topic
- name=testQueue,service=Queue
- name=testTopic,service=Topic

Browse servlet Browser

# Trouble Shooting

### On which port is jBoss listening?

At the end of the startup console you will see trace:

14:26:42,913 INFO  [Http11Protocol] Starting Coyote HTTP/1.1 on http-127.0.0.1-8080

JBOSS is listening on port 8080.

### I could browse jboss only on localhost:8080 or 127.0.0.1:8080?

Start jboss with the option –b 0.0.0.0

### How to duplicate an environment for testing purpose?

Copy “default” folder where your TAFJ deployment is working in tafj_test_context folder for example under the parent directory of “default”. And start jboss with the option –c tafj_test_context

### Where can I find the log files?

JBOSS log file are under JBOSS_HOME\server\default\log folder

TAFJ log are under TAFJ_HOME\log folder.

COMO will be generated under TAFJ_HOME\como by default.

# Appendixes

## Appendix OpenMQ configuration

One way to setup tafj queues is with OpenMQ. OpenMQ is part of the Glassfish distribution from Sun. You don't need to run Glassfish, but you could start the OpenMQ broker in standalone from Glassfish. Under GF_HOME\imq\bin launch imqbrokerd.exe

For more detail about OpenMQ please refer to: https://mq.dev.java.net/

To configure jBoss to use OpenMQ's Queue, do the following step:

1. Under GF_HOME\imq\lib copy file imqjmsra.rar under JBOSS_HOME\server\YOUR_CONTEXT\deploy
2. Copy from TAFJ_HOME\appserver\jboss files openmq-ds.xml and opnemq-queue-ds.xml in JBOSS_HOME\server\YOUR_CONTEXT\deploy
3. You need to update the descriptor files form TAFJJEE_EAR file:
    a. In TAFJJEE_EAR.ear\TAFJJEE_MDB.jar\META-INF\jboss.xml file:
        i. Uncomment all line with "`<resource-adapter-name>imqjmsra.rar</resource-adapter-name>`"
        ii. Replace all "`<jndi-name>java:/ConnectionFactory</jndi-name>`" by "`<jndi-name>OpenMQConnectionFactory</jndi-name>`"
        iii. Replace all "`queue/`" by "`phys_`" by example `<jndi-name>queue/t24OFSReplyQueue</jndi-name>` by `<jndi-name>phys_t24OFSReplyQueue</jndi-name>`
        iv. Replace all "`<activation-config-property-value>queue/`" by "`<activation-config-property-value>phys_`"

    b. In TAFJJEE_EAR.ear\TAFJJEE_WAR_Show\WEB-INF\jboss-web.xml
        i. All `<jndi-name>java:/ConnectionFactory</jndi-name>` by `<jndi-name>OpenMQConnectionFactory</jndi-name>`
        ii. `queue/` by `phys_` by example `<jndi-name>queue/t24OFSReplyQueue</jndi-name>` by `<jndi-name>phys_t24OFSReplyQueue</jndi-name>`

Restart JBoss.

To configure the openMQ RA to use a XA connection factory, update the ra.xml from imgjmsra.xml by changing:

In resourceadapter\outbound-resourceadapter\connection-definition\connectionfactory-interface change value **javax.jms.ConnectionFactory** by **javax.jms.XAConnectionFactory**

In opnemq-ds.xml by changing :

connection-factories**no-tx-connection-factory**\connection-definition\ value **javax.jms.ConnectionFactory**

with

connection-factories**tx-connection-factory**\connection-definition\ **javax.jms.XAConnectionFactory**.

## Appendix JBOSS thread pooling configuration v4.2

### MDB Global (Strict) Pool Size

This value is set in the ejb3-interceptors-aop.xml under the section “Message Driven

Bean” as shown below :

```
<domain name="MessageDrivenBean">
<bind pointcut="execution(public*@javax.annotation.security.RunAs->*(..))">
<interceptor-ref name="org.jboss.ejb3.security.RunAsSecurityInterceptorFactory"/>
</bind>
<bind pointcut="execution(public**->*(..))">
<interceptor-ref name="org.jboss.ejb3.stateless.StatelessInstanceInterceptor"/>
<interceptor-ref name="org.jboss.ejb3.tx.TxInterceptorFactory"/>
<interceptor-ref name="org.jboss.ejb3.AllowedOperationsInterceptor"/>
<interceptor-ref name="org.jboss.ejb3.entity.TransactionScopedEntityManagerInterceptor"/>
<interceptor-ref name="org.jboss.ejb3.interceptor.EJB3InterceptorsFactory"/>
</bind>
<annotation expr="!class(@org.jboss.annotation.ejb.PoolClass)">
@org.jboss.annotation.ejb.PoolClass(value=org.jboss.ejb3.StrictMaxPool.class,maxSize=50,time
out=120000)
</annotation>
</domain>
```

This setting applies to every MDB instance, if you are looking for a finer configuration of pool per MDB/EJB, refer to next section. The timeout is after how many millisecond the App server will give up trying to get an instance.

### Pool Size per MDB/EJB

TAFJ distribution provides a configuration file tafj-aop.xml to setup TAFJ MDB/EJB thread pooling.

In jboss.xml you could reference an entry in tafj-aop.xml file with <aop-domain-name>TAFJSEATPooledMDB</aop-domain-name> per MDB/ EJB. The related pool size configuration is defined in tafj-aop.xml file as below:

For MDB:

```
<domain name="TAFJSEATPooledMDB">
                <bind pointcut="execution(public *
@javax.annotation.security.RunAs->*(..))">
         <interceptor-ref
name="org.jboss.ejb3.security.RunAsSecurityInterceptorFactory"/>
      </bind>
      <bind pointcut="execution(public * *->*(..))">
         <interceptor-ref
name="org.jboss.ejb3.stateless.StatelessInstanceInterceptor"/>
         <interceptor-ref name="org.jboss.ejb3.tx.TxInterceptorFactory"/>
         <interceptor-ref name="org.jboss.ejb3.AllowedOperationsInterceptor"/>
         <interceptor-ref
name="org.jboss.ejb3.entity.TransactionScopedEntityManagerInterceptor"/>
         <interceptor-ref
name="org.jboss.ejb3.interceptor.EJB3InterceptorsFactory"/>
```

```
      </bind>
      <annotation expr="!class(@org.jboss.annotation.ejb.PoolClass)">
         @org.jboss.annotation.ejb.PoolClass
(value=org.jboss.ejb3.StrictMaxPool.class, maxSize=5, timeout=200000)
      </annotation>
   </domain>
```

For MDB you also need to define an activation config property in:
TAFJJEE_EAR.ear\TAFJJEE_MDB.jar\META-INF\ejb-jar.xml

Add or uncomment the following section to the corresponding activation-config section of the MDB, the value must match the maxSize  pool value defined in tafj-aop.xml.

```
<activation-config-property>
<activation-config-property-name>maxSession</activation-config-property-
name>
<activation-config-property-value>3</activation-config-property-value>
</activation-config-property>
```

maxSession determines the amount of session/consumers the resource adapter will create to forward messages into the MDB (default is 15).

i.e.

```
<message-driven>
      <display-name>Phantom Executor MDB</display-name>
      <ejb-name>TAFJPhantomListenerMDB</ejb-name>
      <mapped-name>jms/t24EXECQueue</mapped-name>
      <ejb-class>com.temenos.tafj.mdb.PhantomListener</ejb-class>
      <messaging-type>javax.jms.MessageListener</messaging-type>
      <transaction-type>Bean</transaction-type>
      <message-destination-type>javax.jms.Queue</message-destination-type>
      <activation-config>
            <activation-config-property>
                  <activation-config-property-
                  name>acknowledgeMode</activation-config-property-name>
                  <activation-config-property-value>Auto-
                  acknowledge</activation-config-property-value>
            </activation-config-property>
            <activation-config-property>
                  <activation-config-property-name>maxSession</activation-
                  config-property-name>
                  <activation-config-property-value>3</activation-config-
                  property-value>
            </activation-config-property>
      </activation-config>

   ...
```

For EJB:

```
   <domain name="TAFJSEATPooledEJB">
      <bind pointcut="execution(public * *->*(..))">
         <interceptor-ref
name="org.jboss.ejb3.asynchronous.AsynchronousInterceptor"/>
         <interceptor-ref name="org.jboss.ejb3.ENCPropagationInterceptor"/>
         <interceptor-ref
name="org.jboss.ejb3.security.AuthenticationInterceptorFactory"/>
      </bind>
      <bind pointcut="execution(public *
@org.jboss.annotation.security.SecurityDomain->*(..))">
         <interceptor-ref name="Basic Authorization"/>
      </bind>
      <bind pointcut="execution(public * @javax.annotation.security.RunAs-
>*(..))">
         <interceptor-ref
name="org.jboss.ejb3.security.RunAsSecurityInterceptorFactory"/>
      </bind>
      <bind pointcut="execution(public * @org.jboss.annotation.ejb.Clustered-
>*(..))">
         <interceptor-ref
name="org.jboss.ejb3.remoting.ReplicantsManagerInterceptorFactory"/>
      </bind>
      <bind pointcut="execution(public * *->*(..))">
         <interceptor-ref
name="org.jboss.ejb3.stateless.StatelessInstanceInterceptor"/>
         <interceptor-ref name="org.jboss.aspects.tx.TxPropagationInterceptor"/>
         <interceptor-ref name="org.jboss.ejb3.tx.TxInterceptorFactory"/>
         <interceptor-ref name="org.jboss.ejb3.AllowedOperationsInterceptor"/>
         <interceptor-ref
name="org.jboss.ejb3.entity.TransactionScopedEntityManagerInterceptor"/>
         <interceptor-ref
name="org.jboss.ejb3.interceptor.EJB3InterceptorsFactory"/>
      </bind>
      <annotation expr="!class(@org.jboss.annotation.ejb.PoolClass)">
         @org.jboss.annotation.ejb.PoolClass
(value=org.jboss.ejb3.StrictMaxPool.class, maxSize=4, timeout=60000)
      </annotation>
   </domain>
```

## Appendix OPENMQ thread pooling configuration

### Ensure enough Threads

In jbossmq-service.xml

```
<mbean code="org.jboss.util.threadpool.BasicThreadPool"
    name="jboss.mq:service=ThreadPool">
    <attribute name="Name">JMSThread</attribute>
    <attribute name="ThreadGroupName">JBossMQ Server Threads</attribute>
    <!-- The max number of threads in the pool -->
    <attribute name="MaximumPoolSize">30</attribute>
    <!-- The max number of tasks before the queue is full -->
    <attribute name="MaximumQueueSize">2000</attribute>
    <!-- The behavior of the pool when a task is added and the queue is full.
    abort - a RuntimeException is thrown
    run - the calling thread executes the task
    wait - the calling thread blocks until the queue has room
    discard - the task is silently discarded without being run
    discardOldest - check to see if a task is about to complete and enque
      the new task if possible, else run the task in the calling thread
    -->
    <attribute name="BlockingMode">run</attribute>
 </mbean>
```

### Global (Strict) Pool Size

This value is set in the ejb3-interceptors-aop.xml under the section “Message Driven Bean” like this :

```
<domain name="MessageDrivenBean">
<bind pointcut="execution(public*@javax.annotation.security.RunAs->*(..))">
<interceptor-ref name="org.jboss.ejb3.security.RunAsSecurityInterceptorFactory"/>
</bind>
<bind pointcut="execution(public**->*(..))">
```

```
<interceptor-ref name="org.jboss.ejb3.stateless.StatelessInstanceInterceptor"/>
<interceptor-ref name="org.jboss.ejb3.tx.TxInterceptorFactory"/>
<interceptor-ref name="org.jboss.ejb3.AllowedOperationsInterceptor"/>
<interceptor-ref name="org.jboss.ejb3.entity.TransactionScopedEntityManagerInterceptor"/>
<interceptor-ref name="org.jboss.ejb3.interceptor.EJB3InterceptorsFactory"/>
</bind>
<annotation expr="!class(@org.jboss.annotation.ejb.PoolClass)">
@org.jboss.annotation.ejb.PoolClass(value=org.jboss.ejb3.StrictMaxPool.class,maxSize=500,tim
eout=120000)
</annotation>
</domain>
```

This should contain the total amount of MDB instances you will have. The timeout is after how many millis the App server will give up trying to get an instance.

### Pool Size of the different DataSource.

Here, we have to take 2 data sources in considerations : The JMS Broker and the Database

For the JMS Broker, the file is openmq-ds.xml

```
<connection-factories>
<no-tx-connection-factory>
<jndi-name>OpenMQConnectionFactory</jndi-name>
<rar-name>imqjmsra.rar</rar-name>
<use-java-context>false</use-java-context>
<connection-definition>javax.jms.ConnectionFactory</connection-definition>
<min-pool-size>20</min-pool-size>
<max-pool-size>500</max-pool-size>
<blocking-timeout-millis>15000</blocking-timeout-millis>
</no-tx-connection-factory>
</connection-factories>
For the Database, the file is t24-ds.xml
<datasources>
<local-tx-datasource>
<jndi-name>jdbc/t24DS</jndi-name>
<connection-url>jdbc:oracle:thin:@localhost:1521:R10GAMB</connection-url>
<driver-class>oracle.jdbc.driver.OracleDriver</driver-class>
<user-name>myuser</user-name>
<password>******</password>
<min-pool-size>20</min-pool-size>
<max-pool-size>500</max-pool-size>
<blocking-timeout-millis>15000</blocking-timeout-millis>
<idle-timeout-minutes>15</idle-timeout-minutes>
<exception-sorter-class-
name>org.jboss.resource.adapter.jdbc.vendor.OracleExceptionSorter</exception-sorter-
classname>
<metadata>
<type-mapping>Oracle11g</type-mapping>
</metadata>
</local-tx-datasource>
</datasources>
```

### Pool Size per MDB

Each MDB pools are defined in the TAFJJEE_EAR.ear/TAFJJEE_MDB.jar/META-INF/ejb-jar.xml

Like this for OpenMq ONLY:

```
<message-driven>
<display-name>Queue1 Listener MDB</display-name>
<ejb-name>Queue1ListenerMDB</ejb-name>
<ejb-class>com.temenos.tafj.mdb.OFSListener</ejb-class>
<messaging-type>javax.jms.MessageListener</messaging-type>
<transaction-type>Bean</transaction-type>
```

```
<message-destination-type>javax.jms.Queue</message-destination-type>
<activation-config>
<activation-config-property>
<activation-config-property-name>EndpointPoolMaxSize</activation-config-property-name>
<activation-config-property-value>10</activation-config-property-value>
</activation-config-property>
<activation-config-property>
<activation-config-property-name>EndpointPoolSteadySize</activation-config-property-name>
<activation-config-property-value>2</activation-config-property-value>
</activation-config-property>
</activation-config>
</message-driven>
```

Like this for normal jBoss MQ:

```
<message-driven>
<display-name>Queue1 Listener MDB</display-name>
<ejb-name>Queue1ListenerMDB</ejb-name>
<ejb-class>com.temenos.tafj.mdb.OFSListener</ejb-class>
<messaging-type>javax.jms.MessageListener</messaging-type>
<transaction-type>Bean</transaction-type>
<message-destination-type>javax.jms.Queue</message-destination-type>
<activation-config>
<activation-config-property>
<activation-config-property-name>maxSession</activation-config-property-name>
<activation-config-property-value>40</activation-config-property-value>
</activation-config-property>
</activation-config>
</message-driven>
```

## Appendix: JMX Configuration

For jBoss 4, if you want to see all jBoss information and because jBoss is embedded in a Mbean server, you need to add this parameter to the JAVA_OPTS variable:

```
JAVA_OPTS="$JAVA_OPTS -Djboss.platform.mbeanserver
-Djavax.management.builder.initial=org.jboss.system.server.jmx.MBean
ServerBuilderImpl"
```

## Appendix: Monitoring jBoss with Visual VM remotely

1) Start visual VM on the client:
   a. jvisualvm.exe -J-Dnetbeans.system_socks_proxy=localhost:9696 -J-Djava.net.useSystemProxies=true
2) Add the following to run.conf

```
JAVA_OPTS="$JAVA_OPTS -Xdebug
-Xrunjdwp:transport=dt_socket,address=8787,server=y,suspend=n"
JAVA_OPTS="$JAVA_OPTS -Dcom.sun.management.jmxremote.port=6789"
JAVA_OPTS="$JAVA_OPTS -Dcom.sun.management.jmxremote.ssl=false"
JAVA_OPTS="$JAVA_OPTS -Dcom.sun.management.jmxremote.authenticate=false"
```

**JAVA_OPTS="$JAVA_OPTS**
**-Djava.rmi.server.hostname=IP_ADDRESS_OF_MY_JBOSS"**

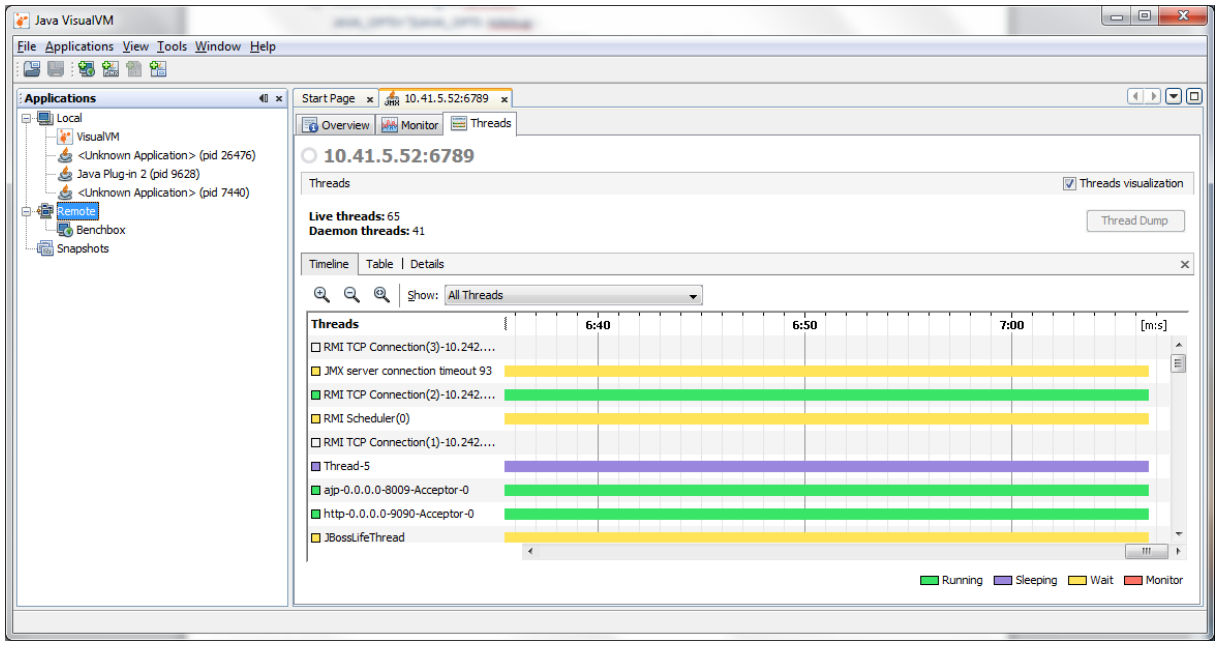
**3)** Start jstatd on the server

**a.** jstatd -J-Djava.security.policy=permissions.txt -p 1099

**b.** permissions.txt looks like grant {
permission java.security.AllPermission;
};

**4)** Start jBoss (never mind about port 1099 already being in use error)

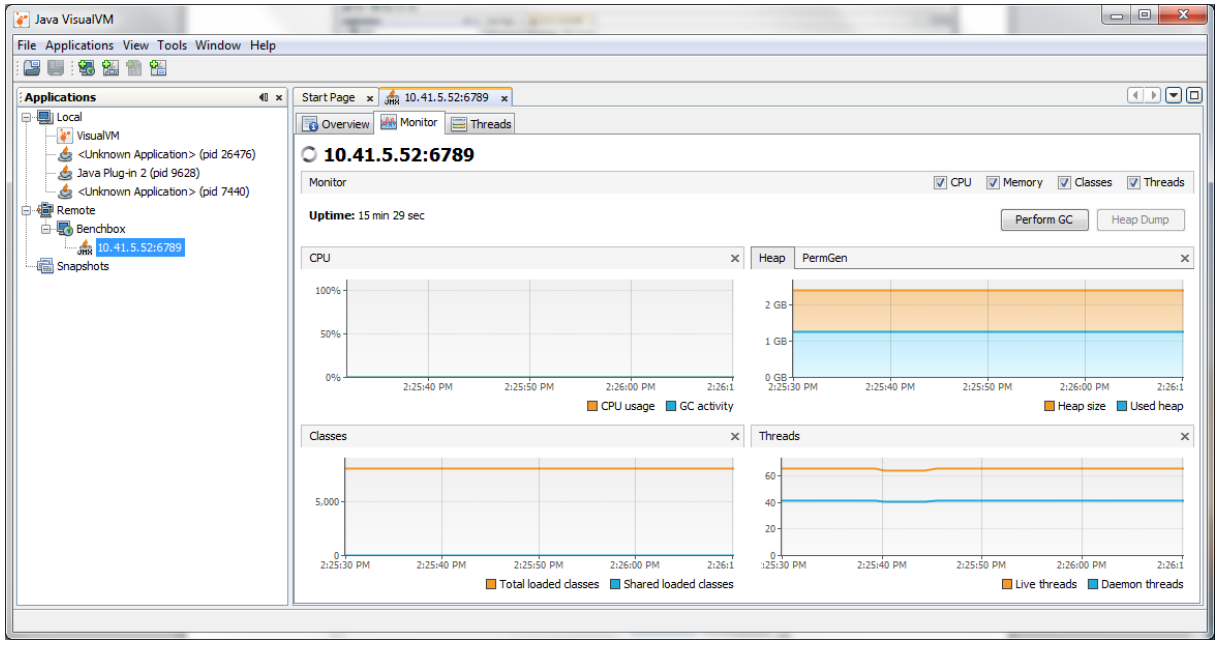
**5)** On Visual VM, right click on Remote and add the remote server (in this case named Benchbox)




**6)** Right click on Benchbox and click “Add JMX Connection”

**7)** Add the IP and remote jmx port (6789)


**8)** Click ok and then double click on the new connection to monitor




## Appendix: Setting up multiple instances of JBoss on the same machine with The ServiceBindingManager

http://community.jboss.org/wiki/ConfigurePorts

In conf/jboss-service you will find the binding manager.
Uncomment this to use the ports-01 settings from the example bindings.
The example contains 4 different ports settings besides the default .