TAFJ-AS JBoss install EAP 6.x.0 final

R14/R15

10/3/2015

Temenos

Amendment History:

Revision	Date Amended	Name	Description
1	15th January 2014	JN. Charpin	Initial version
2	13th February 2014	JN. Charpin	R14 GA Review
3	21th February	JN.Charpin	Symbolic link to resolve module
4	19th March 2014	JN.Charpin	Servlet review
5	5th February 2015	JN.Charpin	Memory JVM setting for UAT production env.
6	6th March 2015	H. Aubert	R15 AMR review

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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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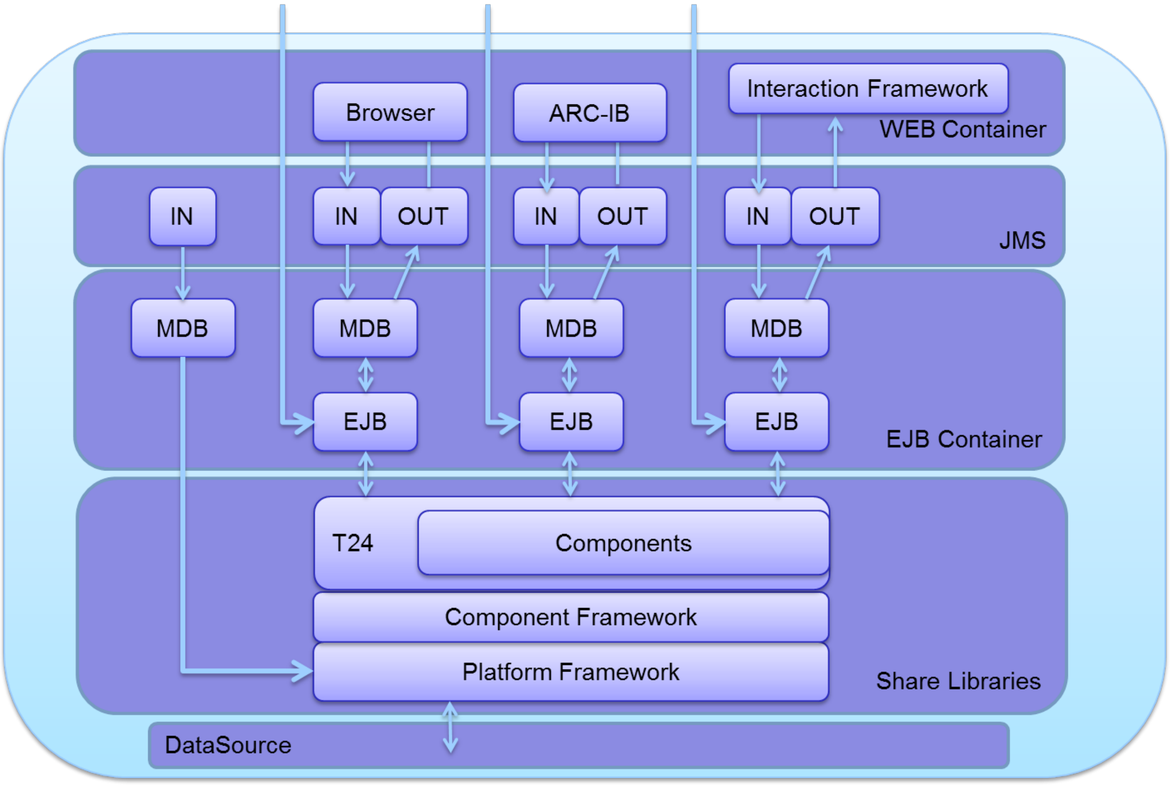
Please include your name, company, address, and telephone and fax numbers, and email address if applicable. TAFJdev@temenos.com

Table of Contents

T24 Java deployment in JBoss EAP 6.x.0 EAP

Infrastructure



JBoss Installation

This document presents TAFJ deployment for JBoss versions 6.3.0 EAP

Go to http://www.jboss.org/jbossas/downloads/ site and downloads **EAP 6.3.0 Final.**

Unzip it to a directory.

This directory will be called in the document ***JBOSS_HOME*** directory.

This document covers a standalone installation and is a quick guide to deploy T24 / TAFJ.

Please refer to JBOSS documentation for further information.

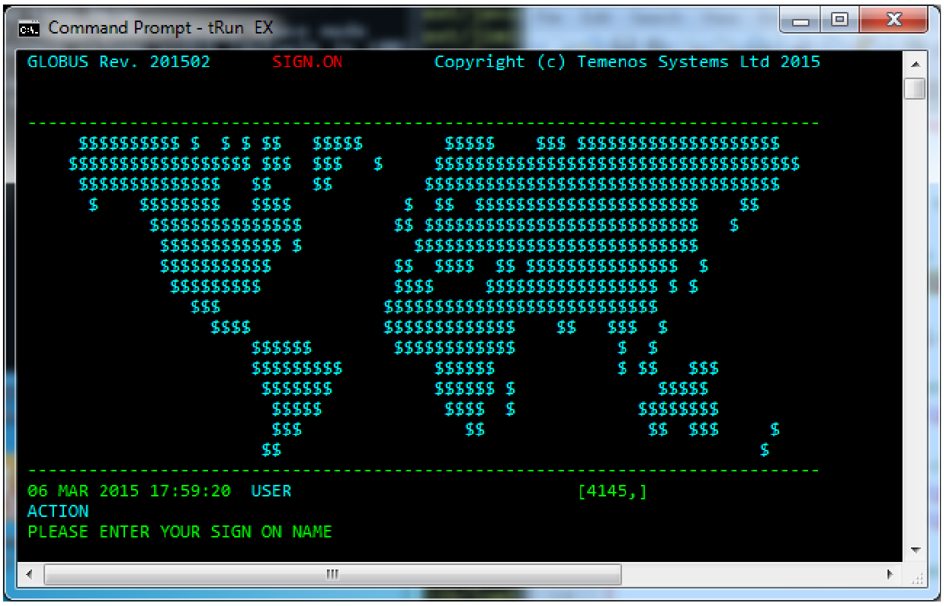
https://docs.jboss.org/author/display/AS7/Documentation

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 JBoss with TAFJ/T24, check your standalone installation is working.



```
GLOBUS Rev. 201502      SIGN.ON         Copyright (c) Temenos Systems Ltd 2015


------------------------------------------------------------------------------
     $$$$$$$$$$ $  $ $ $$   $$$$$        $$$$$    $$$ $$$$$$$$$$$$$$$$$$$$
    $$$$$$$$$$$$$$$$$$ $$$  $$$   $     $$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$
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      $    $$$$$$$$   $$$$           $  $$  $$$$$$$$$$$$$$$$$$$$$$    $$
            $$$$$$$$$$$$$$$         $$ $$$$$$$$$$$$$$$$$$$$$$$$$$$   $
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             $$$$$$$$$$$            $$  $$$$  $$ $$$$$$$$$$$$$$$  $
              $$$$$$$$$             $$$$     $$$$$$$$$$$$$$$$$ $ $
                $$$                $$$$$$$$$$$$$$$$$$$$$$$$$$$
                  $$$$             $$$$$$$$$$$$$    $$   $$$  $
                      $$$$$$        $$$$$$$$$$$$          $  $
                      $$$$$$$$$         $$$$$$            $ $$   $$$
                       $$$$$$$          $$$$$$ $              $$$$$
                        $$$$$            $$$$  $            $$$$$$$$
                        $$$                $$                $$  $$$     $
                       $$                                               $
------------------------------------------------------------------------------
06 MAR 2015 17:59:20  USER                                [4145,]
ACTION
PLEASE ENTER YOUR SIGN ON NAME
```

Start JBoss

There are several standalone profiles that can be used.

To run the full J2EE profile you will need to use at least a standalone-full profile.

If you define your own profile, please adapt the script above to provide as --server-config argument your profile name.

This profile refers to a configuration file which we will configure in the next steps, located under ***JBOSS_HOME*****/standalone/configuration**.

If you define your own profile you will have to copy and rename the standalone-full.xml file.

```
set PATH=%PATH%;%JBOSS_HOME%\bin;

cd %JBOSS_HOME%/bin

CALL standalone.bat --server-config=standalone-full.xml -b 0.0.0.0
```

JBoss EAP 6.2.0 configuration for T24 solution with TAFJ

Default Memory setting

The default memory setting is

set "JAVA_OPTS=-Xms1G –Xmx1G -XX:MaxPermSize=256M"

It should be sufficient for TAFJ needs.

If you need to tune this parameter, you will have to modify it under:

- Windows : ***JBOSS_HOME*/bin/standalone.conf.bat**
    - `set "JAVA_OPTS=-Xms1G -Xmx1G -XX:MaxPermSize=256M"`
- UNIX: ***JBOSS_HOME*/bin/standalone.conf**
    - `JAVA_OPTS="-Xms1G -Xmx1G -XX:MaxPermSize=256m`

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.

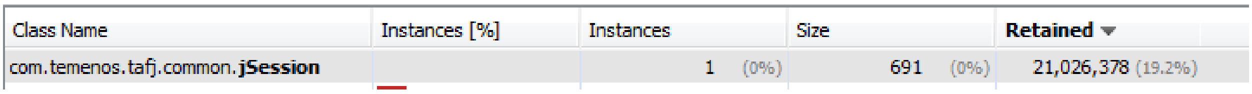
You will have -Xmx6G

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.

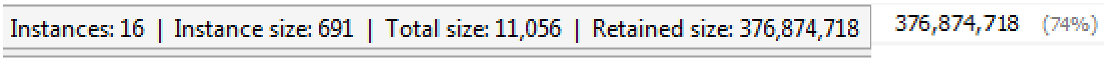
Take a heapdump when running the expected jobs, isolate the jSession objects and compute the retained size.

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.

Keep in mind that you might also need to allocate memory for other application deployed.

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 setting

All environments setting have to be done in the same configuration file than specified for the memory setting **: standalone.conf.bat** or **standalone.conf** depending on your platform.

- TAFJ_HOME definition

```
-Dtafj.home=%TAFJ_HOME%
```

- File encoding

```
-Dfile.encoding=UTF-8
```

i.e.

:JAVA_OPTS_SET

```
set "JAVA_OPTS=%JAVA_OPTS% -Dtafj.home=%TAFJ_HOME%
-Dfile.encoding=UTF-8
```

Optional

- Port offset if you don’t want to run with the default ports configuration

```
-Djboss.socket.binding.port-offset=1009
```

- Node name to use JBoss remoting lookup

```
-Djboss.node.name=node1
```

- Plus other environment value you would need to setup

i.e.

:JAVA_OPTS_SET

```
set "JAVA_OPTS=%JAVA_OPTS% -DARC_CONFIG_PATH=%JBOSS_HOME
%\BrowserSecurity\sso.config -DARC_CONFIG_APP_NAME=SPNEGO
-Dtafj.home=%TAFJ_HOME% -Djboss.socket.binding.port-offset=1009
-Dfile.encoding=UTF-8 -Djboss.node.name=node1"
```

Modules deployment

TAFJ Module deployment

Create a global module **com/temenos/tafj/main** under ***JBOSS_HOME*/modules**.

Copy in this module:

- The file module.xml from ***TAFJ_HOME*/appserver\jboss\jboss6eap\modules\com\temenos\tafj** in ***JBOSS_HOME*/modules com/temenos/tafj/main**
- Create from ***JBOSS_HOME*/modules com/temenos/tafj/main** a symbolic link named **lib** pointing to TAFJ_HOME/lib folder, this command depends on your os:
  - Windows: `mklink /D lib` ***`TAFJ_HOME`***`/lib`
  - Unix: `ln -s` ***`TAFJ_HOME`***`/lib lib`
- Create from ***JBOSS_HOME*/modules com/temenos/tafj/main** a symbolic link named **ext** pointing to TAFJ_HOME/ext folder, this command depends on your os:
  - Windows: `mklink /D ext` ***`TAFJ_HOME`***`/ext`
  - Unix: `ln -s` ***`TAFJ_HOME`***`/ext ext`

Please note this module.xml file is a sample to help you to configure your libraries.

Its purpose is to declare the jar files you want to deploy and the dependencies you need to define on other modules.

This sample, see below, contains a dependency on a user defined oracle drivers' module.

If you don't use oracle database or other oracle drivers' version you will have to remove this dependency and add the dependency corresponding to the database driver module you want to use.

Don't change the javax dependencies unless you know exactly what you are doing.

```
<module xmlns="urn:jboss:module:1.0" name="com.temenos.tafj">
  <resources>
      <!-- Insert resources here -->
      <resource-root path="ant.jar"/>
  <resources>
      <!-- Insert resources here -->
      <resource-root path="/lib/ant.jar"/>
      <resource-root path="/lib/ant-apache-log4j.jar"/>
      <resource-root path="/lib/antlr.jar"/>
      <resource-root path="/lib/icu4j-light.jar"/>
      <resource-root path="/lib/jremote.jar"/>
      <resource-root path="/lib/log4j.jar"/>
      <resource-root path="/lib/substance.jar"/>
      <resource-root path="/lib/T24CollectorClient.jar"/>
      <resource-root path="/lib/TableLayout.jar"/>
      <resource-root path="/lib/TAFJClient.jar"/>
      <resource-root path="/lib/TAFJCommon.jar"/>
      <resource-root path="/lib/TAFJCompiler.jar"/>
      <resource-root path="/lib/TAFJCore.jar"/>
      <resource-root path="/lib/TAFJDBImport.jar"/>
      <resource-root path="/lib/TAFJLocking.jar"/>
      <resource-root path="/lib/TAFJPackager.jar"/>
      <resource-root path="/lib/TAFJSubroutineSplitter.jar"/>
      <resource-root path="/lib/TAFJTelnetD.jar"/>
      <resource-root path="/lib/TAFJVersion.jar"/>
      <resource-root path="/ext/TAFJBASIC.jar"/>
      <resource-root path="/ext/tComponentFramework.jar"/>
  </resources>  <dependencies>
      <module name="com.temenos.t24"/>
      <module name="com.oracle.ora11g"/>
      <module name="javax.api"/>
      <module name="javaee.api"/>
      <module name="javax.jms.api"/>
  </dependencies>
</module>
```

T24 Modules deployment

Create a global module **com/temenos/t24/main** under ***JBOSS_HOME*/modules**.

Copy in this module:

- The file module.xml from ***TAFJ_HOME*/appserver\jboss\jboss6eap\modules\com\temenos\t24**
- Create from ***JBOSS_HOME*/modules com/temenos/t24/main** a symbolic link named **lib** pointing to TAFJ_HOME/lib folder, this command depends on your os:
    - Windows: `mklink /D lib` ***`T24_HOME`***`/lib`
    - Unix: `ln -s` ***`T24_HOME`***`/lib lib`

A tool to generate a module template based on a content of a directory is available in TAFJ, please refer to the “TAFJ module.xml generation helper section” below.

TAFJ module.xml generation helper

As the module.xml generation could be very tedious for T24, you could use a TAFJ tool to generate it.

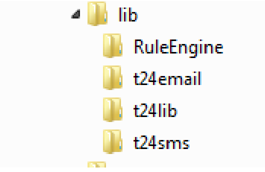
Run from ***TAFJ_HOME*/bin ModuleGenerator** with arguments

```
Usage: JBossTools module_name jars_path dest [root_prefix] [-tafjdep]

where arguments are :

module_name    name of the jboss Module
jars_path  the list of folder you want to parse (os path separator between
folders
dest           the path where you want the module.xml to be generated
root_prefix    name of the link if module.xml is at the same level of the
link
-tafjdep       option to add taf module dependencies in the dependencies
section
```

i.e. on windows platform

```
ModuleGenerator.bat com.temenos.t24 C:\product\T24\DEV\lib;
C:\product\T24\DEV\lib\Enterprise C:\product\AppServer\JBoss-
6.2.0\jboss-eap-6.2\modules\com\temenos\t24\main lib –tafjdep
```

If you have the in T24\lib the folder structure :



```
lib
    RuleEngine
    t24email
    t24lib
    t24sms
```

```
ModuleGenerator.bat com.temenos.t24 C:\product\T24\lib
C:\product\AppServer\ jboss-eap-6.3\modules\com\temenos\t24\main lib
–tafjdep
```

This helper, will create the module.xml file in the destination path. It won’t generate the module.xml dependencies section, you will have to add the correct dependencies for your module needs. After this is complete, you copy the jars to the JBOSS_HOME/modules/com/temenos/t24/main directory where the module.xml file is.

Database Driver Module deployment

Create a module corresponding to the database drivers you want to deploy,

i.e. for an oracle 11g atabase:

com/oracle/ora11g/main under JBOSS_HOME/modules.

This module will be referenced by the data source, please refer to data source section.

It needs to be defined as a dependency of the *com .temenos.tafj* module, as explained in the tafj deployment, but not as a global module to avoid classloading issue.

Copy in this module:

- The drivers for the corresponding database
- The file module.xml from TAFJ_HOME/appserver\jboss\jboss7\modules\com\oracle\ora11g

Please note this module.xml file is a sample to help you to configure your driver module.

```
<module xmlns="urn:jboss:module:1.0" name="com.oracle.ora11g">
    <resources>
        <resource-root path="ojdbc6.jar"/>
            <resource-root path="xmlparserv2.jar"/>
            <resource-root path="xdb.jar"/>
    </resources>
    <dependencies>
            <module name="javax.api"/>
            <module name="javax.transaction.api"/>
    </dependencies>
</module>
```

Don’t change the javax dependencies unless you know exactly what you are doing.

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.

New standalone context

You can copy and rename the existing configuration file, the name of the context is given by the name of the xml file

i.e name T24:

rename **standalone-full.xml to T24.xml**

start jBoss with the command : ***JBOSS_HOME*\** bin\standalone.bat --server-config=T24.xml

New standalone context with cli command

Modify the properties file ***TAFJ_HOME*\appserver\jboss\jboss6eap\jboss-cli\tafj.properties**

```
############################################################
# Path details
#
TAFJ_HOME=[TAFJ root folder]
############################################################
# database details
#
DB_URL=[url]
DB_DRIVER=[h2,ora11g,ora12c,db2jdbc,sqljdbc]
DB_USER=[user]
DB_PWD=[password]
```

i.e for H2

```
############################################################
# Path details
#
TAFJ_HOME=D:\Temenos\Reference\Temenos\TAFJ
############################################################
# database details
#
DB_URL=jdbc:h2:tcp://localhost/T24
DB_DRIVER=h2
DB_USER=mbtafj
DB_PWD=mbtafj
```

In jBoss modify the value to true in the file : ***JBOSS_HOME*\bin\jboss-cli.xml**

```
<!-- whether to resolve system properties specified as command argument or operation parameter
values in the CLI VM before sending the operation requests to the controller -->

    <resolve-parameter-values>true</resolve-parameter-values>
```

Execute the jboss-cli command

```
D:\Temenos\Reference\3rdParty\as\jBoss\jboss-eap-6.3\bin> jBoss-cli.bat --connect
--file=TAFJ_HOME\ap
```

```
pserver\jboss\jboss6eap\jboss-cli\T24Setup.cli --properties=
TAFJ_HOME\appserver\jboss\jboss6eap\jboss
-cli\tafj.properties
```

New standalone context with predefine xml context

Library setting

This section doesn't cover the classloading mechanism in JBoss EAP 6, we strongly recommend referring to following documentation to understand how the libraries are getting loaded and dependencies are managed.

https://docs.jboss.org/author/display/AS7/Class+Loading+in+AS7

TAFJ libraries and T24 libraries are being deployed as **global** modules to allow all applications deployed within the server deployment folder to access them.

To reference these global modules you have to modify your main configuration file, i.e.

JBOSS_HOME\standalone\configuration\standalone-full.xml

Add in the following section the T24 and TAFJ modules declaration.

```
<subsystem xmlns="urn:jboss:domain:ee:1.0">
      <global-modules>
          <module name="com.temenos.tafj" slot="main"/>
          <module name="com.temenos.t24" slot="main"/>
      </global-modules>
  </subsystem>
```

Modules are defined under **JBOSS_HOME/modules.**

Data sources setting

Take as an example the file TAFJ_HOME\appserver\jboss\jboss7\standalone-full.xml

And edit under ***JBOSS_HOME*\standalone\configuration\standalone-full.xml** the data source section.

Two data sources 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).

The data source section to be added and configured is the following for the T24 DS.

```
   <datasource jta="true" jndi-name="java:/jdbc/t24DS" pool-name="T24DS" enabled="true" use-java-context="true" use-ccm="true">
```

```
                    <connection-url>jdbc:oracle:thin:@localhost:1521:TAFJDB</connection-url>
                    <driver>ora11g</driver>
                    <pool>
                        <prefill>false</prefill>
                        <use-strict-min>false</use-strict-min>
                        <flush-strategy>FailingConnectionOnly</flush-strategy>
                    </pool>
                    <security>
                        <user-name>tafj</user-name>
                        <password>secret</password>
                    </security>
                    <validation>
                        <validate-on-match>false</validate-on-match>
                        <background-validation>false</background-validation>
                        <use-fast-fail>false</use-fast-fail>
                    </validation>
                </datasource>
```

The data source section to be added and configured is the following for the T24 locking DS.

```
<datasource jta="false" jndi-name="java:/jdbc/t24LockingDS" pool-name="T24LOCKINGDS"
enabled="true" use-java-context="true" use-ccm="true">
                    <connection-url>jdbc:oracle:thin:@localhost:1521:TAFJDB</connection-url>
                    <driver>ora11g</driver>
                    <pool>
                        <prefill>false</prefill>
                        <use-strict-min>false</use-strict-min>
                        <flush-strategy>FailingConnectionOnly</flush-strategy>
                    </pool>
                    <security>
                        <user-name>tafj</user-name>
                        <password>secret</password>
                    </security>
                    <validation>
                        <validate-on-match>false</validate-on-match>
                        <background-validation>false</background-validation>
                        <use-fast-fail>false</use-fast-fail>
                    </validation>
                </datasource>
```

Please note that these data sources refer to the module corresponding to your driver.
i.e for oracle.

```
                    <driver>ora11g</driver>
```

Thus you should add in the driver section a reference to this module and to the corresponding driver class that you want to use.

i.e. for oracle.

```
  <driver name="ora11g" module="com.oracle.ora11g">
          <xa-datasource-class>oracle.jdbc.OracleDriver</xa-datasource-
class>
  </driver>
```

Please note the attribute `jta="false"` in the locking datasource header to flag it as non-transactional.

JMS Settings

We will configure in this section JMS resources:

(1) default JMS queues used for Temenos products in reply/request patern,

1. BROWSER,
2. ARC-IB,
3. TWS
4. SEAT injection,
5. CALL_AT subroutine,

(2) EXEC queue to launch T24 Phantom

(3) TEC topics for T24 Monitor purpose.

Take as an example the file TAFJ_HOME\appserver\jboss\jboss7\standalone-full.xml

And edit under **JBOSS_HOME\standalone\configuration\standalone-full.xml** messaging section.

The destinations to be added are the following

```
<jms-destinations>
        <jms-queue name="t24OFSQueue">
                <entry name="queue/t24OFSQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24OFSQueue"/>
        </jms-queue>
        <jms-queue name="t24OFSReplyQueue">
                <entry name="queue/t24OFSReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24OFSReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24BROWSERQueue">
                <entry name="queue/t24BROWSERQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24BROWSERQueue"/>
        </jms-queue>
        <jms-queue name="t24BROWSERReplyQueue">
                <entry name="queue/t24BROWSERReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24BROWSERReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24ARCMOBQueue">
                <entry name="queue/t24ARCMOBQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24ARCMOBQueue"/>
        </jms-queue>
        <jms-queue name="t24ARCMOBReplyQueue">
                <entry name="queue/t24ARCMOBReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24ARCMOBReplyQueue"/>
        </jms-queue><jms-queue name="t24TWSQueue">
                <entry name="queue/t24TWSQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TWSQueue"/>
        </jms-queue>
        <jms-queue name="t24TWSReplyQueue">
                <entry name="queue/t24TWSReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TWSReplyQueue"/>
        </jms-queue>


        <jms-queue name="t24TCIBQueue">
                <entry name="queue/t24TCIBQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TCIBQueue"/>
        </jms-queue>
        <jms-queue name="t24TCIBReplyQueue">
                <entry name="queue/t24TCIBReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TCIBReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24TCIBCORPQueue">
                <entry name="queue/t24TCIBCORPQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TCIBCORPQueue"/>
        </jms-queue>
        <jms-queue name="t24TCIBCORPReplyQueue">
                <entry name="queue/t24TCIBCORPReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TCIBCORPReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24TCIBWEALTHQueue">
                <entry name="queue/t24TCIBWEALTHQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TCIBWEALTHQueue"/>
        </jms-queue>
        <jms-queue name="t24TCIBWEALTHReplyQueue">
                <entry name="queue/t24TCIBWEALTHReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24TCIBWEALTHReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24CALLATQueue">
                <entry name="queue/t24CALLATQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24CALLATQueue"/>
        </jms-queue>
        <jms-queue name="t24CALLATReplyQueue">
                <entry name="queue/t24CALLATReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24CALLATReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24AMLQueue">
                <entry name="queue/t24AMLQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24AMLQueue"/>
        </jms-queue>
        <jms-queue name="t24AMLReplyQueue">
                <entry name="queue/t24AMLReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24AMLReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24SEATQueue">
                <entry name="queue/t24SEATQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24SEATQueue"/>
        </jms-queue>
        <jms-queue name="t24SEATReplyQueue">
                <entry name="queue/t24SEATReplyQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24SEATReplyQueue"/>
        </jms-queue>
        <jms-queue name="t24EXECQueue">
                <entry name="queue/t24EXECQueue"/>
                <entry name="java:jboss/exported/jms/queue/t24EXECQueue"/>
        </jms-queue>
        <jms-topic name="tecEventsTopic">
                <entry name="topic/tecEventsTopic"/>
                <entry name="java:jboss/exported/jms/topic/tecEventsTopic"/>
        </jms-topic>
</jms-destinations>
```

```
<entry name="queue/t24OFSQueue"/>
```

Allows to access the queue within the appserver.

```
<entry name="java:jboss/exported/jms/queue/t24OFSQueue"/>
```

Allows to access the queue remotely from an external standalone client for example.

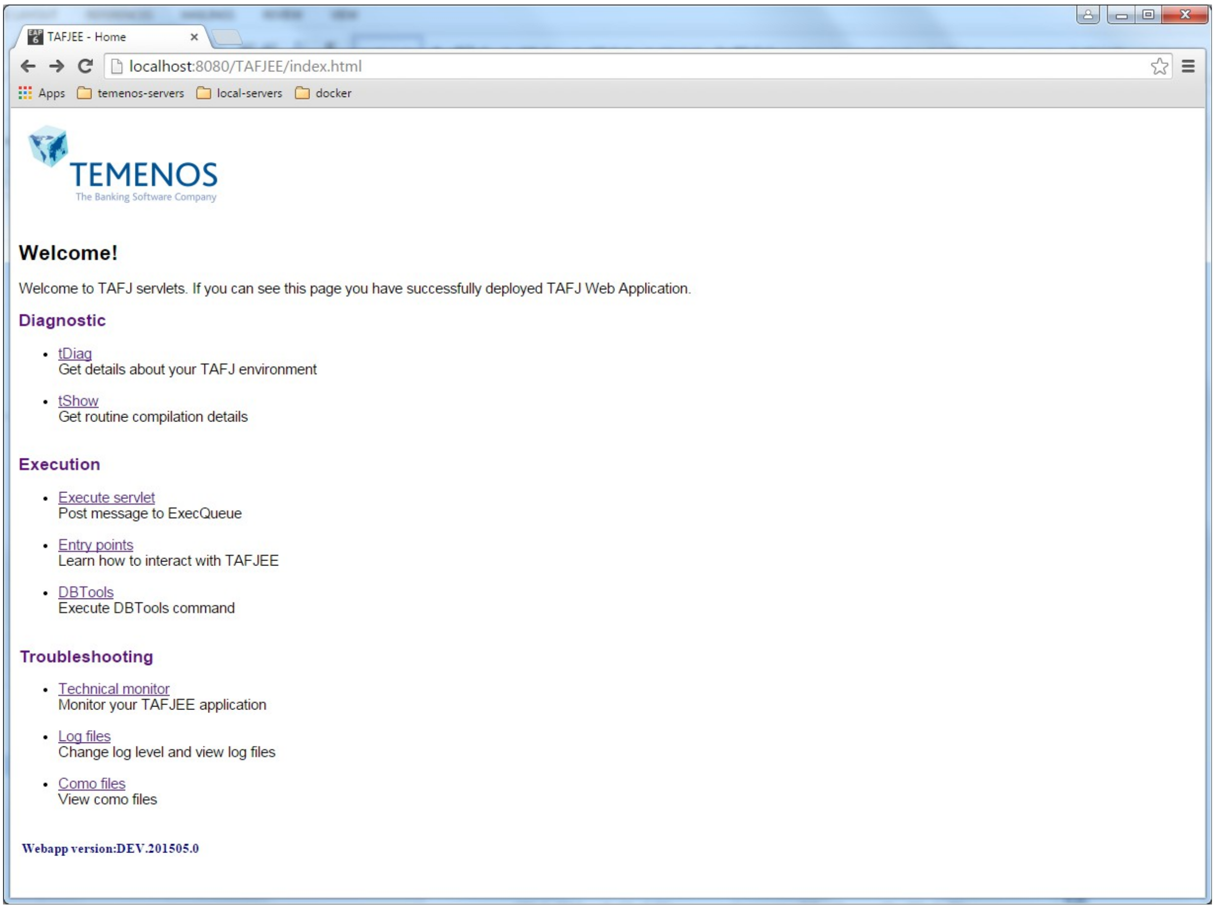
TAFJ Application deployment

Copy files ***TAFJ_HOME***<b></b>**\appserver\jboss\jboss6eap\TAFJJEE_EAR.ear**r under ***JBOSS_HOME***<b></b>**\standalone\deployments**.

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


TAFJEE - Home
localhost:8080/TAFJEE/index.html
Apps
temenos-servers
local-servers
docker
TEMENOS
The Banking Software Company

Welcome!

Welcome to TAFJ servlets. If you can see this page you have successfully deployed TAFJ Web Application.

Diagnostic

- tDiag
  Get details about your TAFJ environment
- tShow
  Get routine compilation details

Execution

- Execute servlet
  Post message to ExecQueue
- Entry points
  Learn how to interact with TAFJEE
- DBTools
  Execute DBTools command

Troubleshooting

- Technical monitor
  Monitor your TAFJEE application
- Log files
  Change log level and view log files
- Como files
  View como files

Webapp version:DEV.201505.0

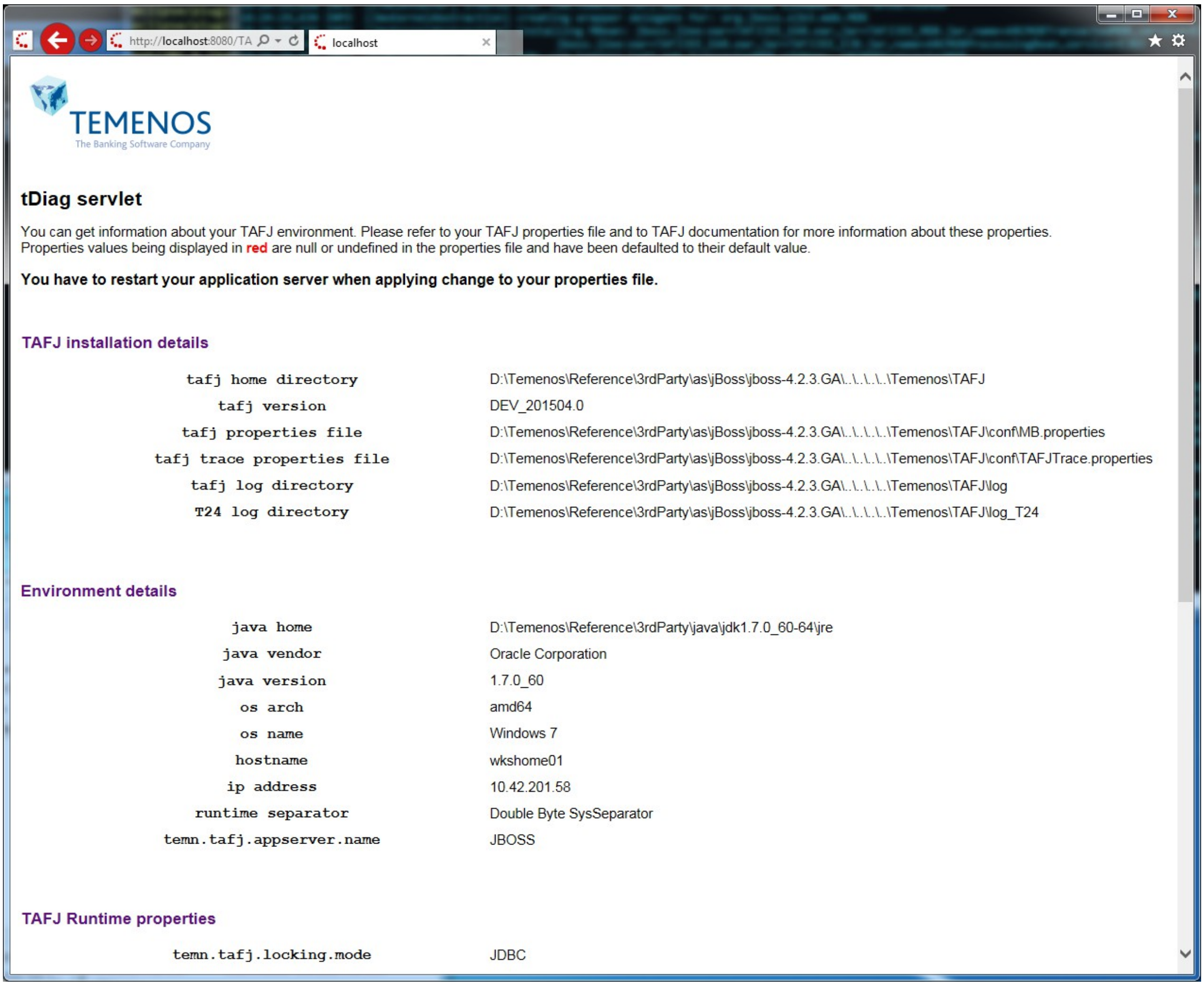
For more details please refer to the **TAFJ-AS TAFJ** documentation.

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.



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

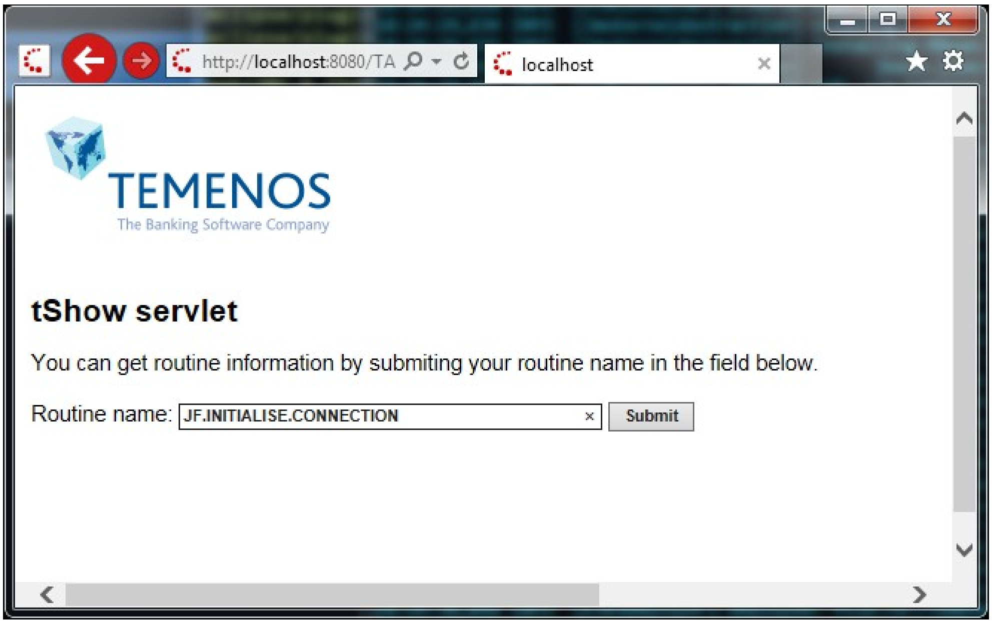
tShow Servlet

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.

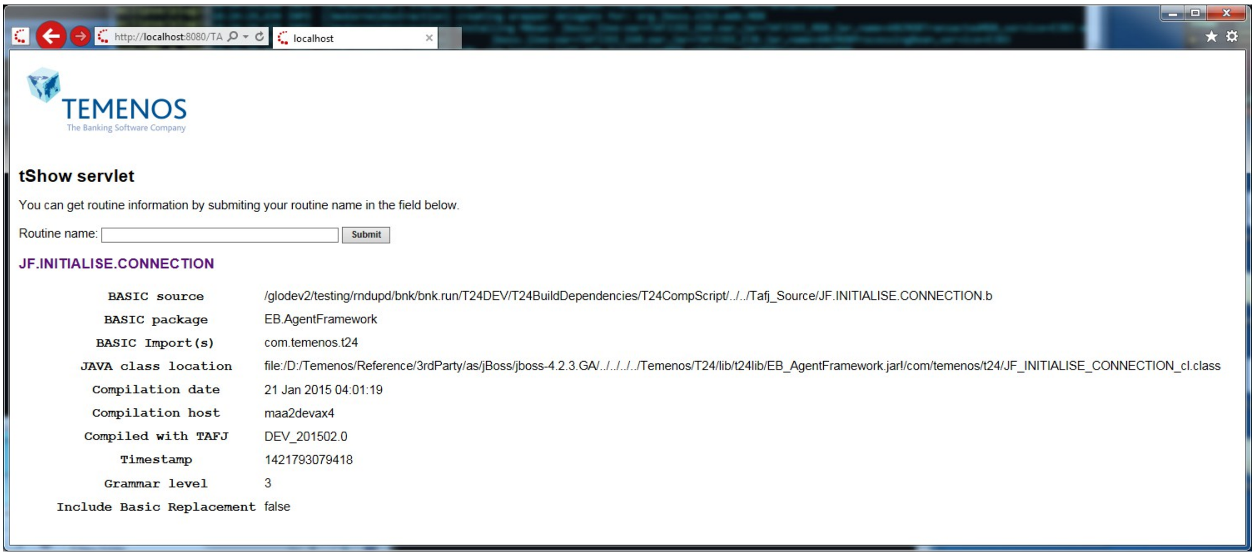
to get details about JF.INITIALISE.CONNECTION



tShow servlet

You can get routine information by submiting your routine name in the field below.

Routine name: JF.INITIALISE.CONNECTION Submit



tShow servlet

You can get routine information by submiting your routine name in the field below.

Routine name: Submit

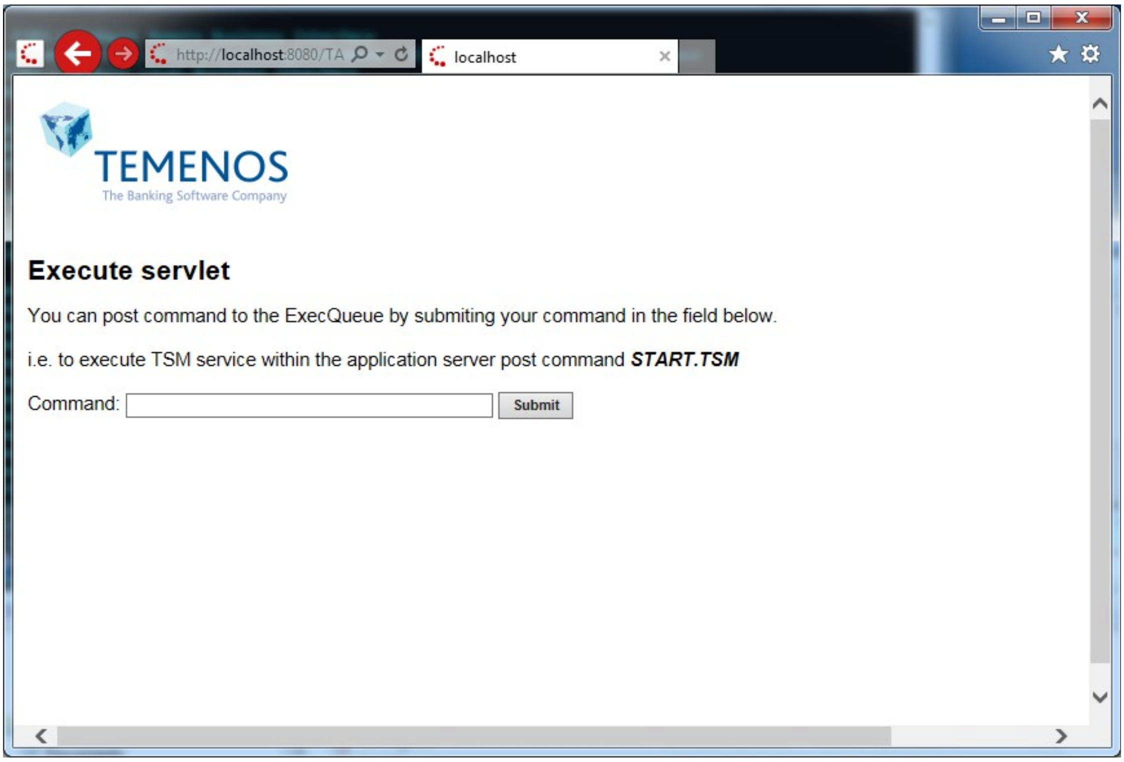
JF.INITIALISE.CONNECTION

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/../../../../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



Execute servlet

You can post command to the ExecQueue by submiting your command in the field below.

i.e. to execute TSM service within the application server post command ***START.TSM***

Command:

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.

T24 Application deployment

BROWSER Application

Copy files **BrowserWeb.war** under JBOSS_HOME\standalone\deployments.

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

```
<resource-ref>
    <res-ref-name>jms/jmsConnectionFactory</res-ref-name>
    <res-type>javax.jms.ConnectionFactory</res-type>
    <jndi-name>java:/ConnectionFactory</jndi-name>
</resource-ref>
<resource-ref>
    <res-ref-name>queue/t24OFSQueue</res-ref-name>
    <res-type>javax.jms.Queue</res-type>
    <jndi-name>java:/queue/t24BROWSERQueue</jndi-name>
</resource-ref>
<resource-ref>
    <res-ref-name>queue/t24OFSReplyQueue</res-ref-name>
    <res-type>javax.jms.Queue</res-type>
    <jndi-name>java:/queue/t24BROWSERReplyQueue</jndi-name>
</resource-ref>
```

Verify deployment

You can verify that you successfully configured all JEE resources by browsing JBoss administration console.

By default the console could be accessed here:

http://localhost:9990/console

Don’t forget to add the port offset if you use one, i.e. if you start with

-Djboss.socket.binding.port-offset=1009

The console will be available here

http://localhost:10009/console

You will need an administration user to access this console.

If you don’t have any existing administration user, run from $JBOSS_HOME/bin:

- **add-user.bat** or **add-user.sh** depending on your platform.

Then you will have to answer few questions:

- Type of user - This will be a 'Management User' to selection option a.
- Realm - This MUST match the realm name used in the configuration so unless you have changed the configuration to use a different realm name leave this set as 'ManagementRealm'.
- Username - The username of the user you are adding.
- Password - The users password.

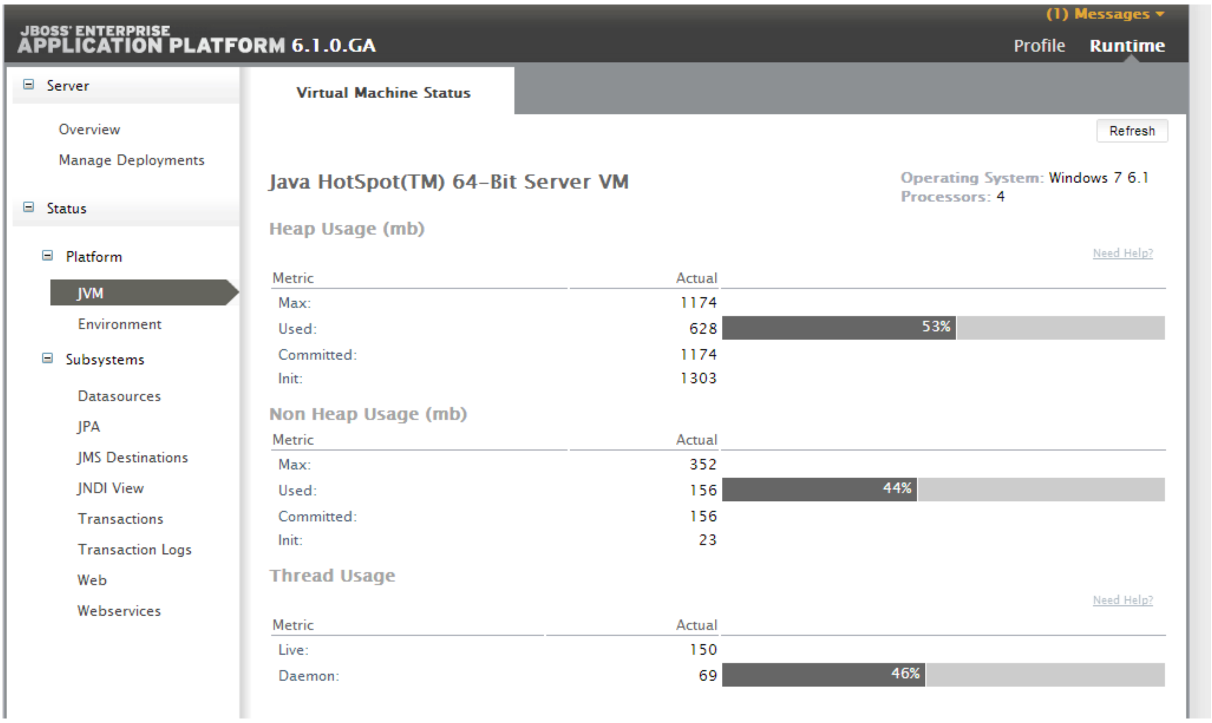
- Provided the validation passes you will then be asked to confirm you want to add the user and the properties files will be updated.

- For the final question, as this is a user that is going to be accessing the admin console just answer 'n'.

Once your user has been created you should be able to login.

You could browse and apply change to your configuration and monitor your deployment.

JVM Monitoring



Java HotSpot(TM) 64-Bit Server VM

Operating System: Windows 7 6.1
Processors: 4

Heap Usage (mb)

Metric	Actual	
Max:	1174	
Used:	628	53%
Committed:	1174	
Init:	1303	

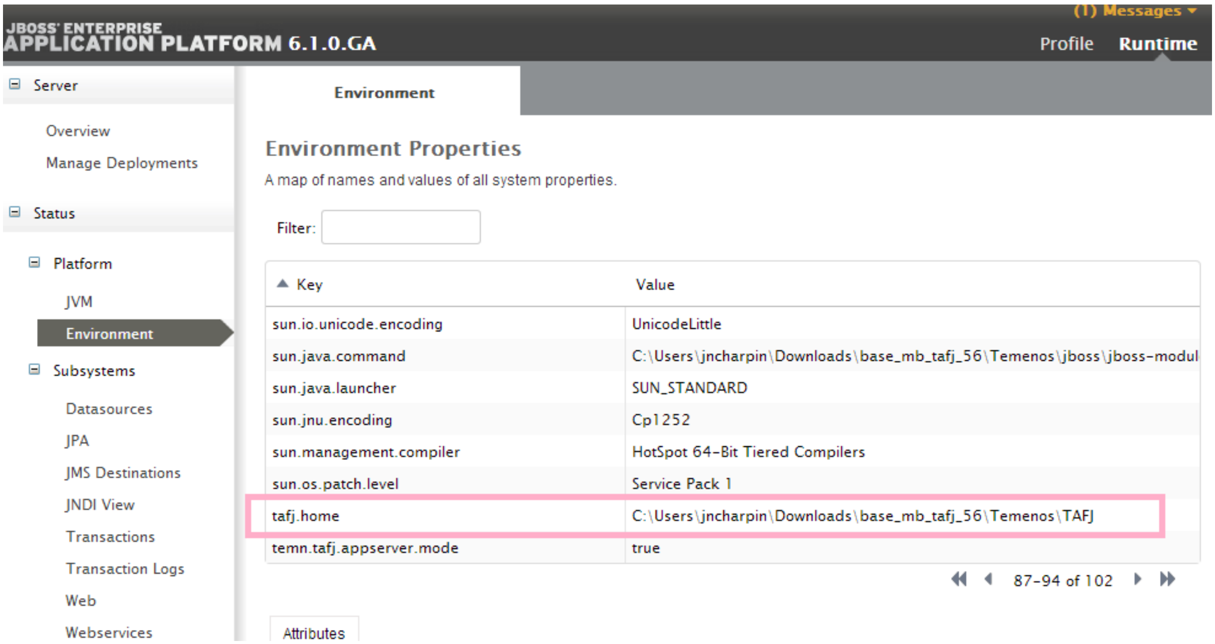
Non Heap Usage (mb)

Metric	Actual	
Max:	352	
Used:	156	44%
Committed:	156	
Init:	23	

Thread Usage

Metric	Actual	
Live:	150	
Daemon:	69	46%

Environment settings

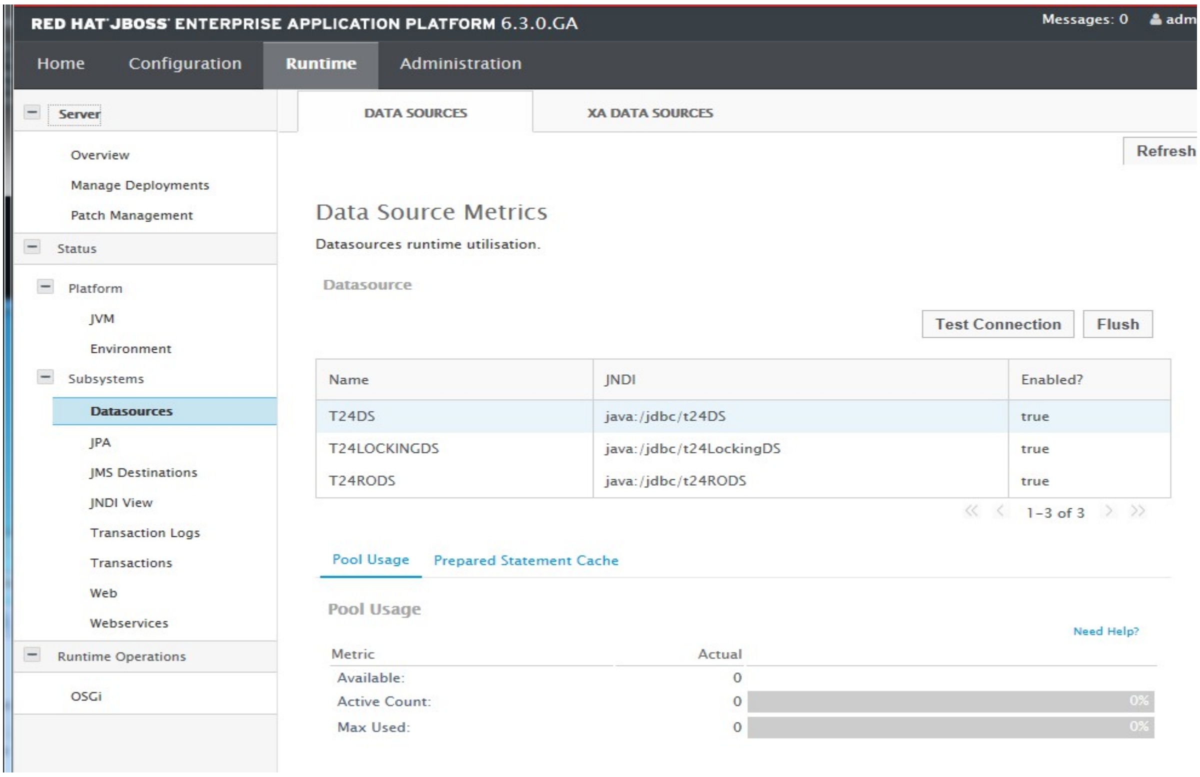


Environment Properties

A map of names and values of all system properties.

Key	Value
sun.io.unicode.encoding	UnicodeLittle
sun.java.command	C:\Users\jncharpin\Downloads\base_mb_tafj_56\Temenos\jboss\jboss-modul
sun.java.launcher	SUN_STANDARD
sun.jnu.encoding	Cp1252
sun.management.compiler	HotSpot 64-Bit Tiered Compilers
sun.os.patch.level	Service Pack 1
tafj.home	C:\Users\jncharpin\Downloads\base_mb_tafj_56\Temenos\TAFJ
temn.tafj.appserver.mode	true

Datasources configuration – pool usage



Data Source Metrics

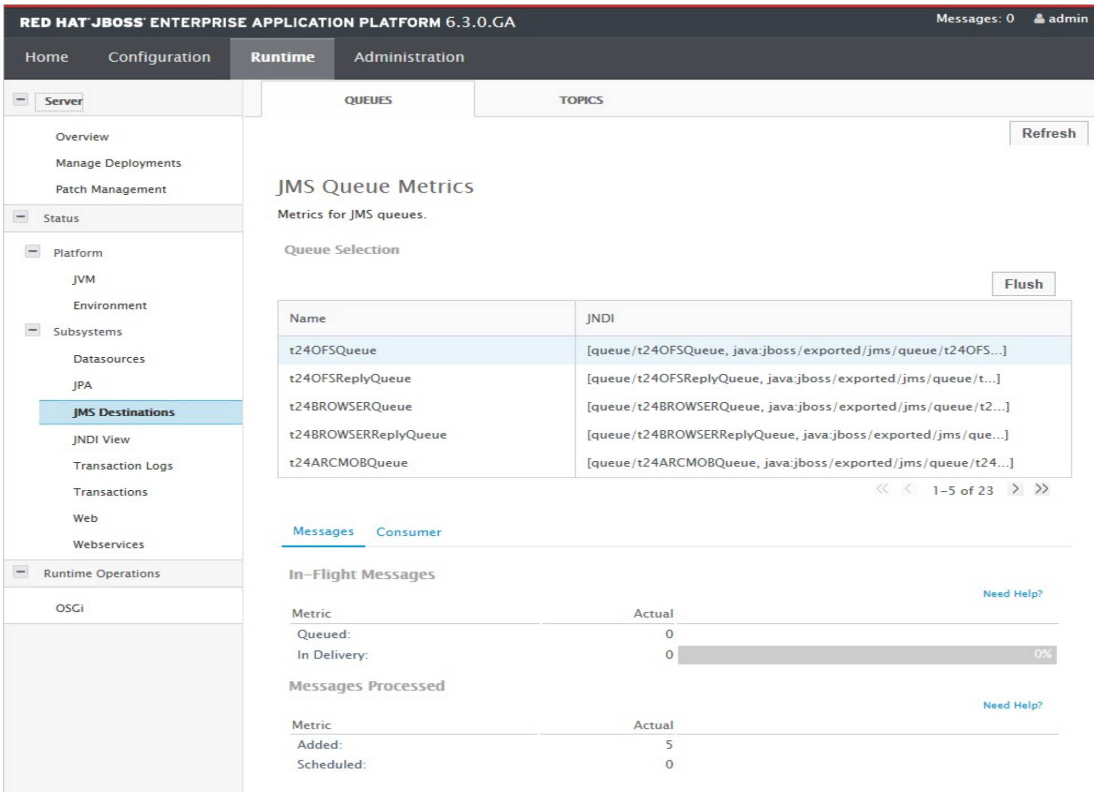
Datasources runtime utilisation.

Name	JNDI	Enabled?
T24DS	java:/jdbc/t24DS	true
T24LOCKINGDS	java:/jdbc/t24LockingDS	true
T24RODS	java:/jdbc/t24RODS	true

Pool Usage

Metric	Actual	
Available:	0	
Active Count:	0	0%
Max Used:	0	0%

JMS configuration – message monitoring



JMS Queue Metrics

Metrics for JMS queues.

Queue Selection

Name	JNDI
t24OFSQueue	[queue/t24OFSQueue, java:jboss/exported/jms/queue/t24OFS...]
t24OFSReplyQueue	[queue/t24OFSReplyQueue, java:jboss/exported/jms/queue/t...]
t24BROWSERQueue	[queue/t24BROWSERQueue, java:jboss/exported/jms/queue/t2...]
t24BROWSERReplyQueue	[queue/t24BROWSERReplyQueue, java:jboss/exported/jms/que...]
t24ARCMOBQueue	[queue/t24ARCMOBQueue, java:jboss/exported/jms/queue/t24...]

1-5 of 23

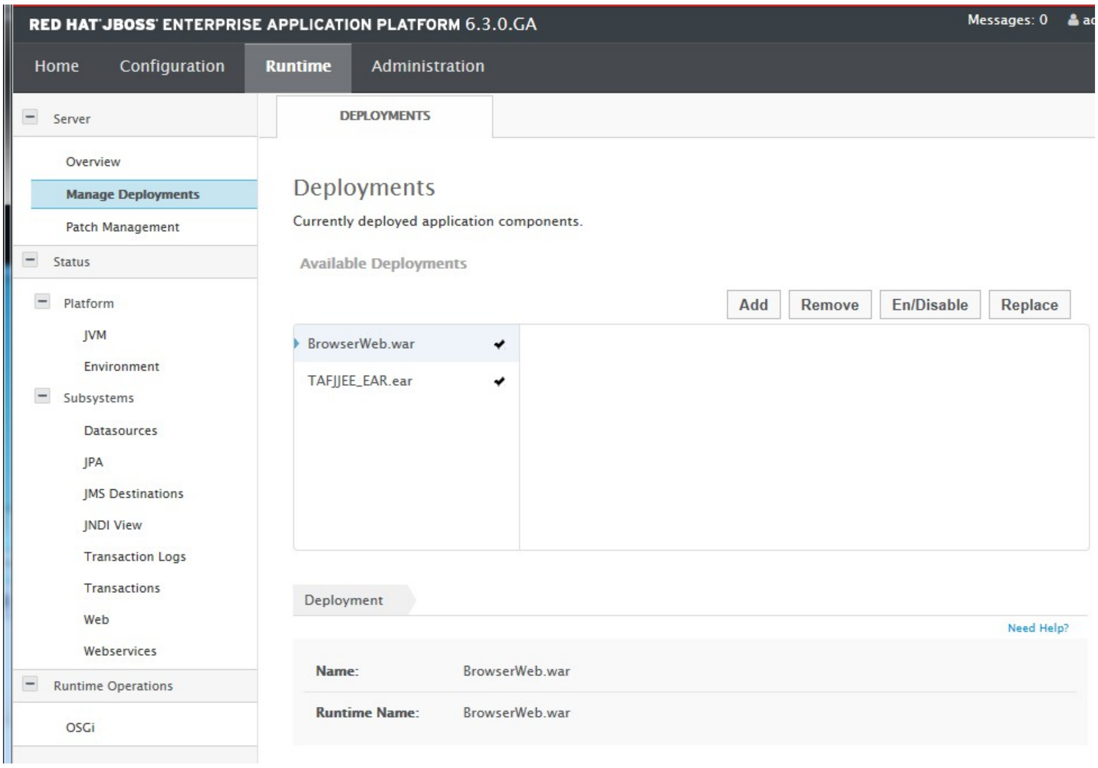
In-Flight Messages

Metric	Actual	
Queued:	0	
In Delivery:	0	0%

Messages Processed

Metric	Actual
Added:	5
Scheduled:	0

Applications deployed



Deployments

Currently deployed application components.

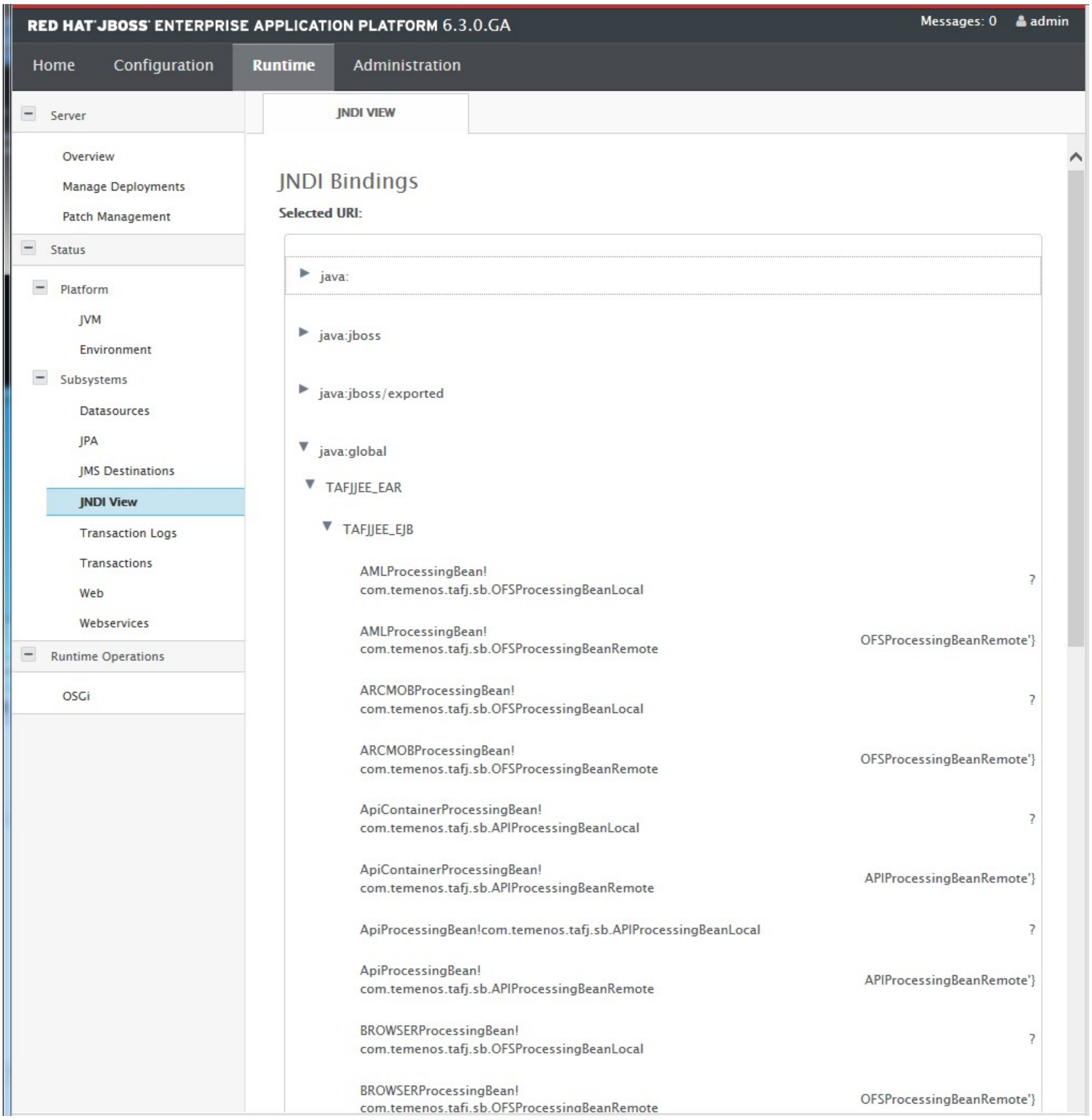
Available Deployments

- BrowserWeb.war ✔
- TAFJJEE_EAR.ear ✔

Name: BrowserWeb.war

Runtime Name: BrowserWeb.war

JNDI binding – EJBs deployed



JNDI Bindings

Selected URI:

▶ java:

▶ java:jboss

▶ java:jboss/exported

▼ java:global

▼ TAFJJEE_EAR

▼ TAFJJEE_EJB

AMLProcessingBean!com.temenos.tafj.sb.OFSProcessingBeanLocal ?

AMLProcessingBean!com.temenos.tafj.sb.OFSProcessingBeanRemote OFSProcessingBeanRemote'}

ARCMOBProcessingBean!com.temenos.tafj.sb.OFSProcessingBeanLocal ?

ARCMOBProcessingBean!com.temenos.tafj.sb.OFSProcessingBeanRemote OFSProcessingBeanRemote'}

ApiContainerProcessingBean!com.temenos.tafj.sb.APIProcessingBeanLocal ?

ApiContainerProcessingBean!com.temenos.tafj.sb.APIProcessingBeanRemote APIProcessingBeanRemote'}

ApiProcessingBean!com.temenos.tafj.sb.APIProcessingBeanLocal ?

ApiProcessingBean!com.temenos.tafj.sb.APIProcessingBeanRemote APIProcessingBeanRemote'}

BROWSERProcessingBean!com.temenos.tafj.sb.OFSProcessingBeanLocal ?

BROWSERProcessingBean!com.temenos.tafj.sb.OFSProcessingBeanRemote OFSProcessingBeanRemote'}

For further information about the administration console please refer to:

https://docs.jboss.org/author/display/AS71/Admin+Guide#AdminGuide-Managementclients

Appenxides

Appendix: Thread pooling and timeout configuration

The standalone configuration file defines the global EJB and MDB thread pool under the following section:

```
<subsystem xmlns="urn:jboss:domain:ejb3:1.4">
        <session-bean>
                <stateless>
                        <bean-instance-pool-ref pool-name="slsb-strict-max-pool"/>
                </stateless>
                <stateful default-access-timeout="5000" cache-ref="simple"/>
                        <singleton default-access-timeout="5000"/>
                </session-bean>
                <mdb>
                        <resource-adapter-ref resource-adapter-name="hornetq-ra"/>
                        <bean-instance-pool-ref pool-name="mdb-strict-max-pool"/>
                </mdb>
                <pools>
                <bean-instance-pools>
                        <strict-max-pool name="slsb-strict-max-pool" max-pool-size="20"
                        instance-acquisition-timeout="5" instance-acquisition-timeout-
                        unit="MINUTES"/>
                        <strict-max-pool name="mdb-strict-max-pool" max-pool-size="20" instance-
                        acquisition-timeout="5" instance-acquisition-timeout-unit="MINUTES"/>
                </bean-instance-pools>
                </pools>
          …
```

We can see that there is a global pool and timeout definition for EJBs (slsb-strict-max-pool) and for MDBs (mdb-strict-max-pool).

To define a custom pool configuration, just add in the above mentioned <bean-instance-pools> your custom pool definition. You could take as an example the file TAFJ_HOME\appserver\jboss\jboss7\standalone-full.xml which provides custom pool examples for MDB and EJB.

<strict-max-pool name="customPoolToBeUsedInEJBDeploymentDescriptorOrAnnotation" max-pool-size="20" instance-acquisition-timeout="5" instance-acquisition-timeout-unit="SECONDS"/>

You will have to bind this pool to your EJB(s) or MDB(s) by adding in your deployment descriptor the following binding.

i.e:

- For an EJB edit TAFJJEE_EAR/TAJEE_T24.jar/META-INF/jboss-ejb3.xml and add

```
<assembly-descriptor>
        <p:pool>
```

```
             <ejb-name>OFSProcessingBean </ejb-name>
        <p:bean-instance-pool-ref> customPoolToBeUsedInEJBDeploymentDescriptorOrAnnotation
        </p:bean-instance-pool-ref>
         </p:pool>
    </assembly-descriptor>
```

This setting will apply the custom pool to the OFSProcessingBean EJB.

Add other binding if you want to setup specific pooling for other EJBs.

Please note that you can apply a binding to all your EJBs by setting the parameter ejb-name with

```
<ejb-name>*</ejb-name>
```

For a MDB edit TAFJJEE_EAR/TAJEE_MDB.jar/META-INF/jboss-ejb3.xml and add same kind of binding. Please note these mappings require the name space `xmlns:p="urn:ejb-pool:1.0".`
Some example are provided in TAFJEE_EAR file in both TAFJJEE_EJB.jar and TAFJJEE_MDB.jar. You just have to comment out the related <assembly-descriptor> section if you want to use them.

Appendix: Setting up multiple instances of JBoss on the same machine

You could have multiple JBoss instance running on same machine by applying a different port offset for each instance, this way you want have any port conflict.

Simply add the following parameter with your port offset value when starting JBoss.

```
-Djboss.socket.binding.port-offset=1009
```

Please refer to the environment setting section if you want to add this parameter to your JBoss startup configuration file.