TEMENOS™

TAFJ-Setup

R14/R15

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Temenos

Amendment History:

Revision	Date Amended	Name	Description
1	1st April 2011	TAFJ team	Initial version
2	7st February 2012	H. Aubert	R12GA review
3	16th January 2013	Manoj Kumar	R13GA review
4	15th April 2014	H. Aubert	R14GA review
5	6th May 2014	JN. Charpin	Logger context
6	10th 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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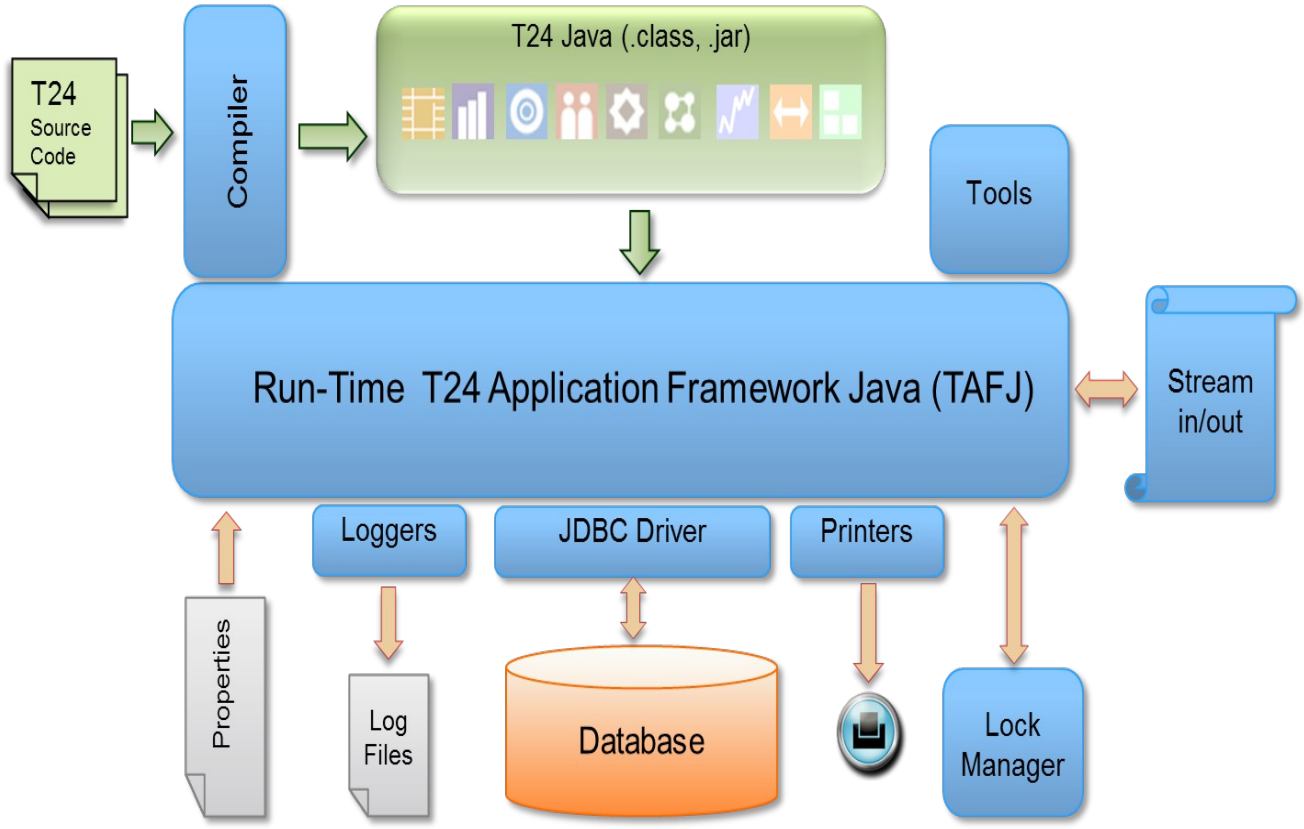
Table of Contents

What is TAFJ

TAFJ (Temenos Application Framework Java) is a Pick BASIC runtime and compiler, written in 100% java. It allows compiling and running Pick BASIC programs. TAFJ has been written specifically for T24 needs, and all tests and proof of concepts have been done using T24. TAFJ also manage the connectivity on JDBC compliant databases like jBASE, Oracle, Microsoft SQL Server, DB2, derby, derby (Embedded). It comes with an embedded exporting tool for migrate your Pick data to Oracle.

Overview



Install guide

Prerequisites

Java JDK

To install TAFJ, the only prerequisite is having a Java Development Kit (JDK) version 1.6.x or 1.7.x installed. To check what version of java you have, type in a console:

```
>java -version
java version "1.7.0_51"
Java(TM) SE Runtime Environment (build 1.7.0_51-b13)
Java HotSpot(TM) 64-Bit Server VM (build 24.51-b03, mixed mode)
```

If the version reported is not 1.6.x or 1.7.x, you should install it. Java JDK can be downloaded here:

http://www.oracle.com/technetwork/java/javase/downloads/index.html

NOTE: If you have installed java 1.6 but the command java -version doesn't report the correct version, this is certainly because your PATH environment variable points to another version. This is a bad practice to have your java virtual machine (VM) in the PATH. We highly recommend removing it. The best practice is to set-up an environment variable called JAVA_HOME pointing to the root directory of your Java Development Kit (JDK) installation. Then, you could reference JAVA_HOME/bin in your PATH environment variable.

The different scripts in ***<TAFJ_HOME>/bin*** will REQUIRE the environment variable ***JAVA_HOME***.

On Unix/Linux/:

```
export JAVA_HOME=<path_to_your_jdk>
```

Or update your file: ***.profile***

On Windows:

START Menu -> Settings -> Control Panel -> System -> Advanced -> Environment Variables

You could use System variables (Preferred) OR User variables to set the JAVA_HOME.

```
set JAVA_HOME=<path_to_your_jdk>
```

Setup TAFJ

The installation comes as a single .tar file. On Unix/Linux, run the "***tar -xf <filename>***" command. On Windows, you can use 7zip® to extract the zip Contents.

```
$ tar -xf Setup_[version].tar
$ ls
Setup_TAFJ.[version].jar
Setup_TAFJ.[version].sh
Setup_TAFJ.[version].bat
```

Then run the script .***sh*** on UNIX or ***.bat*** on Windows operating system.

Note: That the **JAVA_HOME** environment variable must be set before running the scripts.

The following section will show a typical install procedure on a UNIX platform. The procedure will be exactly the same on Windows®. The user input is in **[blue]**. If you have values in brackets, these are the default values (typing <ENTER> is accepting the default).

Note: If you do not have the T24 sources you will need to give any existing directory in order to continue the setup. The insert directory is optional.

A Step by Step TAFJ Installation

On UNIX:

```
$ . ./Setup_TAFJ.<version>.sh
```

On Windows:

```
> Setup_TAFJ.<version>.bat
```

```
-----------------
YAJI v 1.6
Starting setup...
=============================================================
.   Welcome to the Installation program of TAFJ             .
. This setup will install the necessary libraries to        .
. compile and run BASIC programs as well as some            .
. additional tools and Eclipse plug-ins.                    .
. Note that nothing will be modified outside of the         .
. directory you will specify for the installation.          .
. To fully uninstall it, just delete the directory.         .
=============================================================

Press ENTER to continue. <ENTER>
=============================================================
Please enter the install Directory.
C:\TAFJ_GA\
'C:\TAFJ_GA' doesn't exist. Create (y/n) ?Y

Extracting appserver/ (dir)
appserver/icefaces/ (dir)
appserver/icefaces/jsf/ (dir)
appserver/icefaces/jsf/iceFaces/ (dir)
appserver/icefaces/jsf/iceFaces/1.8.2/ (dir)
appserver/icefaces/jsf/iceFaces/1.8.2/pushserver/ (dir)
appserver/icefaces/jsf/iceFaces/1.8.2/pushserver/push-server.war (bin)
appserver/jboss/ (dir)
appserver/jboss/jboss-app.xml (text)
appserver/jboss/jboss-classloading.xml (text)
appserver/jboss/openmq-ds.xml (text)
appserver/jboss/opnemq-queue-ds.xml (text)
appserver/jboss/readme.txt (text)
appserver/jboss/t24-ds.xml (text)
appserver/jboss/tafj-service.xml (text)
appserver/TAFJJEE_EAR.ear (bin)
appserver/was/ (dir)
appserver/was/createManagement.bat (text)
.
.
.
```

```
TAFJSync/log4j-1.2.13.jar (bin)
TAFJSync/logger.properties (text)
TAFJSync/logs (text)
TAFJSync/README (text)
TAFJSync/TAFJSyncServer.jar (bin)
TAFJSync/tSync (text)
YajiAddOn.classYajiUtil.classGetting available devices ....   [DONE]
Creating first project "tafj" ...   [DONE]

Updating : 'C:\TAFJ_GA\conf\tafj.properties'.
Updating : 'C:\TAFJ_GA\conf\.properties'.
Updating : 'C:\TAFJ_GA\conf\.data'.
Updating : 'C:\TAFJ_GA\dbscripts\oracle\javaload'.
Updating : 'C:\TAFJ_GA\dbscripts\oracle\javaload.bat'.
Updating : 'C:\TAFJ_GA\dbscripts\oracle\javaunload'.
Updating : 'C:\TAFJ_GA\dbscripts\oracle\javaunload.bat'.
============================================================
.         Thank you for having installed TAFJ              .
. *** IMPORTANT ***                                        .
. Please make sure that you have the environment variable  .
. JAVA_HOME set to a JDK 6 or above.                       .
============================================================

Press ENTER to terminate.
```

Exploring the Setup result

The path where you installed TAFJ will be referenced as **<TAFJ_HOME>**

In the **install Directory**

<TAFJ_HOME>/

appserver/ The directory containing the different application server configuration like jboss, Websphere application server etc.

bin/ The directory containing the different executable scripts (tRun, tCompile, ...).

CodeCoverage/ The directory containing the cobertura jars.

conf/ The configuration directory.

data/ This directory contains classes and java folder. classes folder holds the all the compiled class files (.class) and java folder holds .java files

dbdrivers/ The directory containing the drivers needed to different database communication.

dbscripts/ The directory containing all the database scripts.

doc/	The directory containing all the documentation.
eclipse/plugins/	The directory containing all the plugins to enable the TAFJ perspective in eclipse IDE.
ext/	The default directory containing java extension (see specific chapter).
lib/	The directory containing the TAFJ libraries
JMSInjector/	This directory contain JMSInjector.
Regression/	Contains some scripts perform regression tests.
samples/basic/	The directory containing some BASIC Code samples.
TAFJSessionMonitor/	The directory containing some TAFJ MV42 Monitor tar.gz file.

In the **Data directory**

<TAFJ_HOME>/data/

/tafj/	The default project directory
/tafj/classes/	The default directory where the compiled BASIC goes (like globuslib).
/tafj/java/	The default directory containing the BASIC converted in java.

Setup Eclipse Plug-ins

Once the setup of TAFJ is completed and if you have eclipse v.3.7.x or above installed, you can simply link the contents of the directory ***<TAFJ_HOME>/eclipse/plugins*** in your directory ***<ECLIPSE_HOME>/dropins***.

1. Create a file ***tafj.link*** in ***<ECLIPSE_HOME>/dropins***.
2. Edit the file ***tafj.link*** and add a property key : ***path=<relative_path_to _TAFJ_HOME>***
3. Set the path with the relative path from ***<ECLIPSE_HOME> to <TAFJ_HOME>***

   i.e

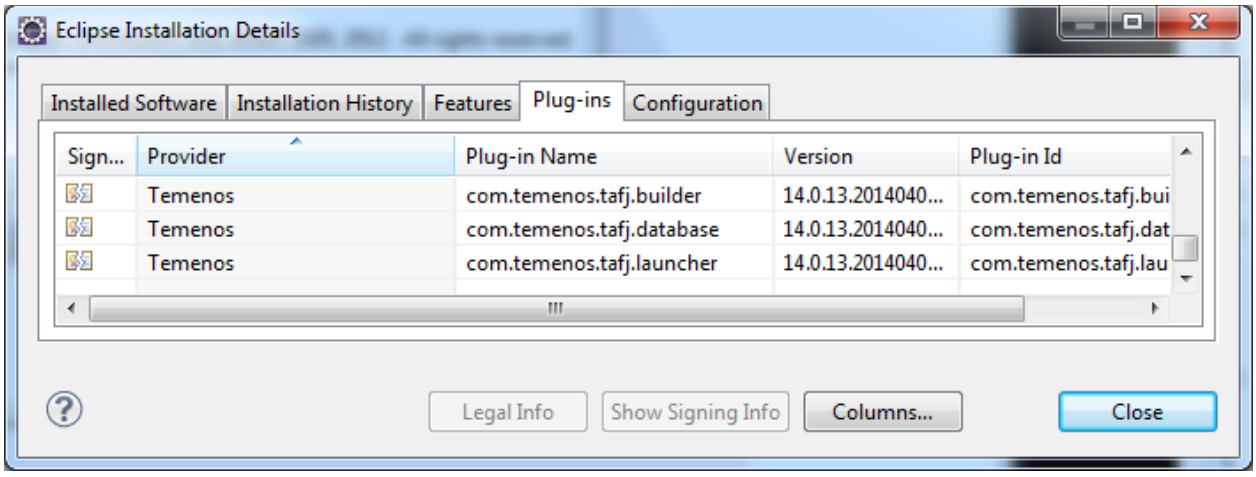
   For the directory structure:

```
+---3rdParty
|   +---eclipse
+---TAFJ
```

   path=../../TAFJ

Once done, in order to verify that all TAFJ Plug-ins are loaded with eclipse, you can go in the Eclipse menu***:***

Help -> About Eclipse SDK, press on "***Installation Details***", and Tab: ***"Plug-ins"***



Setup project.

A project is a specific setting of properties. All properties of a project are in file properties in ***<TAFJ_HOME>\conf***. the name of the project is given by the name of the properties file.

To Create a new project base on a properties file, copy the file ***<TAFJ_HOME>\conf\.properties*** and renamed it with the name of your project.

i.e

T24.properties

MYPROJECT.properties

All scripts in ***<TAFJ_HOME>\bin*** need a project (properties) to work. To specify the project to use with a script, pass the argument: ***-cf ProjectName***

i.e

```
tRun –cf T24.properties EX
```

You can omit the ***-cf*** argument to use the default project. The default project is specified in the file ***<TAFJ_HOME>\conf\.default***. After a setup of TAFJ the default project in ***tafj.properties***.

By conventions, the java and class path for TAFJ of a project have to be set under:

<TAFJ_HOME>/data/<ProjectName>/java and classes

i.e

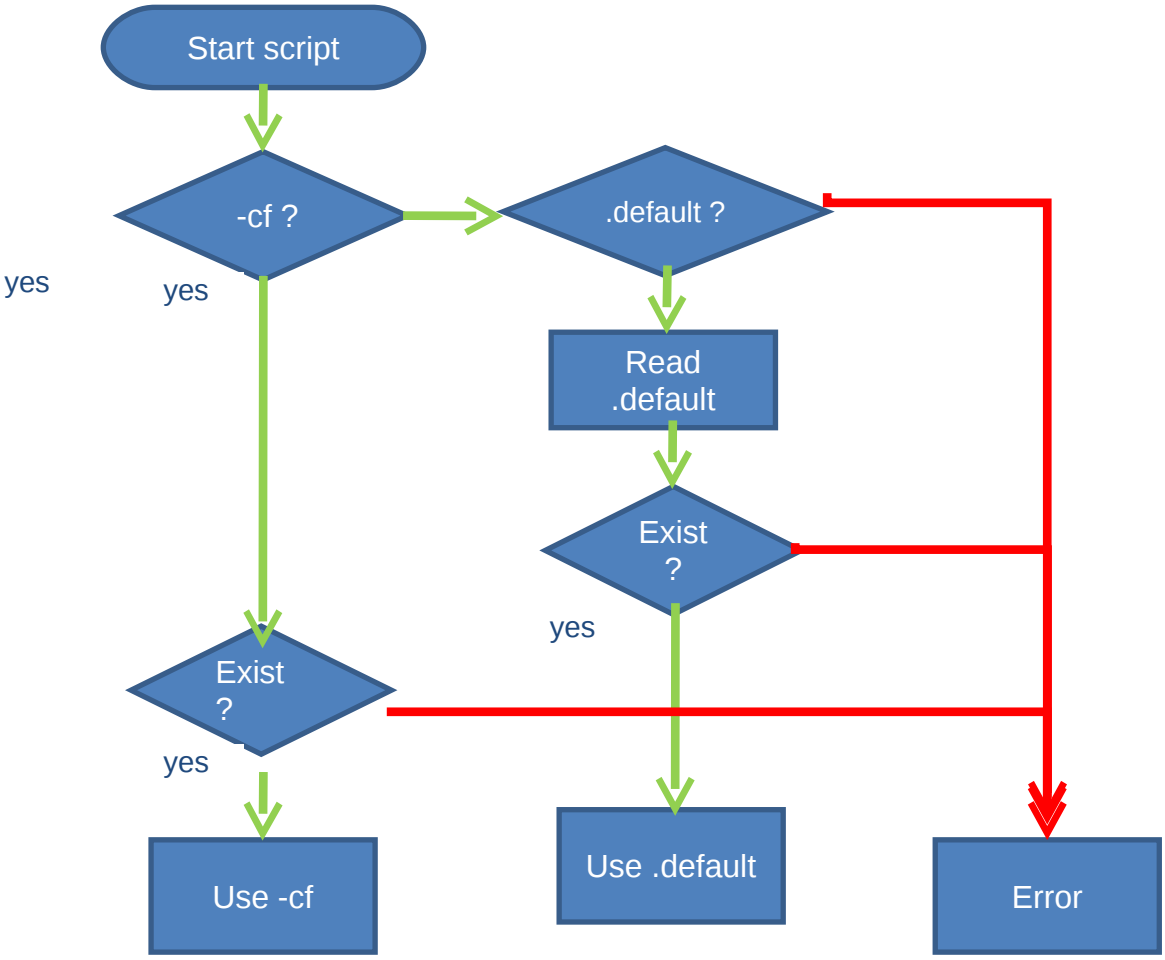
for myProject.properties :

```
# Specify where the java files will be generated
# by the compiler
#
temn.tafj.directory.java        = <tafj.home>\data/myProject/java

# Specify where the classes files will be generated
# by the compiler
#
temn.tafj.directory.classes     = <tafj.home>\data/myProject/classes
```

How it works with properties file and .default

When you start a script in ***<TAFJ_HOME>\bin*** the mechanism is:



Logger

All executions are logged with TAFJ. TAFJ use the standard LOG4J open source.

The setting of the loggers for TAFJ is in the file
<TAFJ_HOME>\conf\TAFJTrace.properties.

In this file you can change the level and the appender of all loggers. For more information read the documentation of LOG4J.

http://logging.apache.org/log4j/1.2/manual.html

If the file doesn't exist, automatically TAFJ recreate a new one.

File TAFJTrace.properties :

```
#####################################
# Technology & Research Dep.
# Log file configuration
#
# TEMENOS (c) 2009
#
# This file contains configuration
# parameters for the log4j logger.
#
# Log Level = OFF, FATAL, ERROR, WARN, INFO, DEBUG
# Note :The 'File' must have only slashes '/' and never backslashes ''
#
#####################################
log4j.debug=false
log4j.rootLogger=OFF
log4j.logger.T24=INFO,        t24
log4j.logger.BASIC=ERROR,     basic
log4j.logger.PRINTER=ERROR,   printer
log4j.logger.DATABASE=ERROR, database
log4j.logger.JQL=ERROR,       jql
log4j.logger.LOCKING=INFO,    locking
log4j.logger.COMPILER=WARN,   compiler
log4j.logger.DEPENDENCY=INFO, dependency
log4j.logger.RUNTIME=ERROR,   runtime
log4j.logger.DBIMPORT=ERROR, dbimport
log4j.logger.SQLTRACE=ERROR, sqltrace
log4j.logger.ITYPE=ERROR,     itype
log4j.logger.EXECUTE=ERROR,   execute
log4j.logger.IOSERVER=INFO,   ioserver
log4j.logger.MDB=ERROR,       mdb
log4j.logger.EJB=ERROR,       ejb
log4j.logger.MONITOR=ERROR,   monitor
log4j.logger.FILTER=ERROR,    filter
log4j.logger.COBERTURA=ERROR,  cobertura
#log4j.logger.org.apache.tools.ant=ERROR, merge
log4j.logger.DBIMPORT-COMPARER=ERROR, dbcomparer
```

Log folders customization

By default you will find above mentioned logs under following folders:

- ***<TAFJ_HOME>/log : for TAFJ logs***
- ***<TAFJ_HOME>/log_T24 : for T24 logs***

This default behavior could be overridden by using following properties:

- **log.directory**=<PATH_TO_YOUR_TAFJ_LOG_FOLDER>
- **log.directory.t24**=<PATH_TO_YOUR_T24_LOG_FOLDER>

It has to be set at TAFJ start up, and should be done through environment properties or JVM arguments.

You cannot use the tafj.properties file for that purpose as loggers get initialized before tafj properties get loaded.

Logger context and multi-tenant.

In a multi-tenant environment you may want to define a specific logger context to differentiate the logs from the different tenants. It could also be useful for debugging purpose where a user can define its own context.

By using property

- **log.context**=<YOUR_CONTEXT_NAME>

you will find your logs under :

- ***<TAFJ_HOME>/log/<YOUR_CONTEXT_NAME> : for TAFJ logs***
- ***<TAFJ_HOME>/log_T24/<YOUR_CONTEXT_NAME> : for T24 logs***

Same feature apply to overridden log directory as mentioned above.

When using a context you will also generate a dedicated file to configure your appenders: TAFJTrace.<YOUR_CONTEXT_NAME>.properties file.

Like log directories properties it has to be set at TAFJ start up, and should be done through environment properties or JVM arguments.

Properties

TAFJ doesn't use Environment Variables. All setup for TAFJ is based on a properties file.

.properties is a file extension for files used in TAFJ related technologies to store the configurable parameters of an application. These are known as Property Resource .

Each parameter is stored as a pair of strings, one storing the name of the parameter (called the *key*), and the other storing the value

All properties are loaded as a Java System Properties.

All Properties can be overload with ***-D<key>=<value>*** set to the JVM (Java Virtual Machine)

A value can contain:

A string as a value

i.e.

```
tafj.home = \Temenos\T24Enterprise\TAFJ
```

A string including keys

i.e.

```
tafj.home = \Temenos\T24Enterprise\TAFJ
temn.tafj.runtime.directory.current = <tafj.home>/UD
```

A String with an Environment variable

```
tafj.home = <%TAFJ_HOME%>
temn.tafj.runtime.directory.current = <$TAFJ_HOME>/UD
```

Printer

TAFJ use the JPS (Java Print Service.

On Windows, JPS use the Printer Manager. You can connect any printers installed on Windows. The Printer has to be online.

On UNIX/LINUX, JPS use CUPS (Common Unix Printing System). CUPS is not install by default. You have to install it. Please refer to your OS documentation for the installation.

In the properties file, category printer, the setup of TAFJ automatically adds your printers online with default driver name PRN #. You can affect the channel to any drivers' name.

```
#*********************************************************************
#
# Printer
#
#*********************************************************************
#
# Printer list
# This list has been generated during the setup. You can modify it at any moment to
reflect any
# change to the printer list.
# If the Channel 1 is missing (or remed-out), it will be defaulted to the default
printer (if any)
# of your operating system.
#

#Specify where is the &HOLD& directory when SETPTR is used with the HOLD option
temn.tafj.printer.directory.hold = <temn.tafj.runtime.directory.current>/&HOLD&
temn.tafj.channel.name.0     = PRN0

temn.tafj.driver.name.0      = PRN0
temn.tafj.driver.device.0    = HP Officejet Pro 8600 (Network)
temn.tafj.driver.class.0     = com.temenos.tafj.jlp.drivers.jPrinterDriver
```

Check TAFJ Installation

To Check to installation of tafj, you can execute the command **"tDiag".** The command will show you the where is set TAFJ_HOME, the version of the JVM, the version of TAFJ, the default project and all details of all projects set in ***<TAFJ_HOME>\conf***

```
------------------------------------------------------------------

Home                      : 'D:\Temenos\T24Enterprise\TAFJ'
Conf directory            : 'D:\Temenos\T24Enterprise\TAFJ/conf'
Log directory             : 'D:\Temenos\T24Enterprise\TAFJ/log'
Version                   : DEV_201404
------------------------------------------------------------------

java.home                 : D:\Temenos\T24Enterprise\3rdParty\java\jdk1.7.0_51-64\jre
java.vendor               : Oracle Corporation
java.version              : 1.7.0_51
os.arch                   : amd64
os.name                   : Windows 7
HostName                  : wkshome01
IP Address                : 10.244.1.137
Runtime                   : Double Byte SysSeparator
------------------------------------------------------------------

Default Project           : 'tafj'

- Project : 'tafj'
        Basic source             : D:\Temenos\T24Enterprise\TAFJ\samples\basic
        Java src dir             : D:\Temenos\T24Enterprise\TAFJ\data\tafj\java
        Java classes dir         : D:\Temenos\T24Enterprise\TAFJ\data\tafj\classes
        Update dir               : D:\Temenos\T24Enterprise\TAFJ/updates
        ---------------------------------------------------------------
        Java default package     : com.temenos.t24
        ---------------------------------------------------------------
        DataBase URL             :
        DataBase user            :
        ---------------------------------------------------------------
        Locking mode             : JDBC
        Locking name             :
        ---------------------------------------------------------------
        Current dir              : D:\Temenos\T24Enterprise\TAFJ/UD
        Como dir                 : D:\Temenos\T24Enterprise\TAFJ/UD/&COMO&
        Hold dir                 : D:\Temenos\T24Enterprise\TAFJ/UD/&HOLD&
        UD encoding              : UTF-8
        ---------------------------------------------------------------
        Timezone                 : Europe/London
        Local                    : en_US
        Debug enabled            : true
        ---------------------------------------------------------------
        JMS logger enabled       : false
        Logger API enabled       : true
        TEC disabled             : false
        ---------------------------------------------------------------
        Session monitor enabled : false
        Session monitor host     : localhost
        Session monitor port     : 8377
```

TAFJ on Multiple Servers

If you install TAFJ on multiple servers, you need then to setup the port range for each sever and be sure no port id will be duplicate on others server.

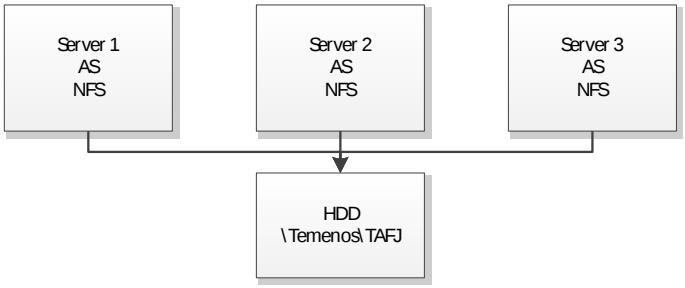
On each server in the properties file, set the key : `temn.tafj.runtime.port.range`

```
# set the port range of the system
#
#ie : temn.tafj.runtime.port.range = 10-45,76,89,2,130-150
temn.tafj.runtime.port.range                    =
```

Scenario 1

All the servers have a NFS/MAP to a share HDD where TAFJ is installed.

No Need to setup any port range. All servers will share the uid (unique ID file).



Scenario 2

Each servers have HDD file system where TAFJ is installed.

You need to setup for each TAFJ a port range. Each servers will have his own uid (unique ID file).