

BSOA Orchestra

Getting Started

BULL SERVICE-ORIENTED
ARCHITECTURE (BSOA)



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BULL SERVICE-ORIENTED ARCHITECTURE (BSOA)

BSOA Orchestra

Getting Started

BSOA Orchestra v3.0

Software

November 2006

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Preface

This document provides the essential information for getting started with the BSOA Orchestra software.

Chapter 1. New Features for Orchestra

The following new functionality has been incorporated into BSOA Orchestra **v3.0**:

- BSOA Orchestra has been migrated to JOnAS 4.8.x series.
- The Engine is now able to run BPEL 2.0 processes.
- Some BPELJ support has been added.
- The process editor has been moved to an eclipse plug-in. Both the swing version and the plug-in version of Zenflow are delivered in the package.
- The administration console has been enhanced (pagination...).
- A new trace level is available to get information about the statements executed.
- A new Zenflow tutorial, "Zenflow Weather2 Tutorial," has been added.
- A new Google sample is included.

Chapter 2. Delivery Content

BSOA CD-ROM

Table 2-1. Content of BSOA CD-ROM

-Linux®	//Contains BSOA for Linux®.
-Windows®	//Contains the BSOA executable for Windows®.

Chapter 3. Prerequisites

3.1 Software

- BSOA requires Java Development Kit (JDK) 1.4, but it also runs with JDK 1.5 (also called JDK 5.0).
The JDK software can be downloaded from <http://java.sun.com/j2se/1.4.2/> or <http://java.sun.com/j2se/1.5.0/>.
- BSOA requires JOnAS Application Server version 4.8.4.
The JOnAS 4.8.4 (or higher) release build can be downloaded from <http://jonas.objectweb.org/download/index.html>. (Use JOnAS4.8.4-Tomcat5.5.17.exe for the Windows platform, or jonas4.8.4-tomcat5.5.17.tgz for the Linux® platform.)
For the JOnAS installation procedure, see: http://jonas.objectweb.org/current/doc/howto/install_j2ee.html.
- BSOA requires Apache Ant version 1.6.5 or higher.
It can be downloaded from: <http://Ant.apache.org>.

3.2 Hardware

A 1 GHz processor is recommended, with a minimum of 512 Mb of RAM. Windows users can avoid swap file adjustments and get improved performance by using 1 Gb or more of RAM.

Chapter 4. Installation Procedure

4.1 Linux® Installation

First, copy the file BSOA_Orchestra_'version'.tgz (which is on the BSOA CDROM in the linux/ repository) to the hard disk. Untar the archive with the command "tar zxvf BSOA_Orchestra_'version'.tgz". This operation creates a repository named BSOA_Orchestra_'version'/' and representing *your_bsoa_repository*.

- **Step 1:** Make sure that the JAVA_HOME, ANT_HOME and JONAS_ROOT environment variables are set.
- **Step 2:** Set a JONAS_BASE environment variable to the directory where the configuration files will be located.
- **Step 3:** Set BPEL_HOME environment variable to *"the_repository_where_you_installed_bsoa/BPEL"*.
- **Step 4:** Make sure the PATH contains \$BPEL_HOME/bin/unix, \$JAVA_HOME/bin, \$ANT_HOME/bin and JONAS_ROOT/bin/unix
- **Step 5:** go to the directory where BSOA has been extracted and type *"./install.sh"*.
- **Step 6:** In the event of port number conflicts, change from the default port numbers by going to the directory where BSOA has been extracted and typing *"./configure.sh"*. See Chapter 9 for a list of ports used by Orchestra.

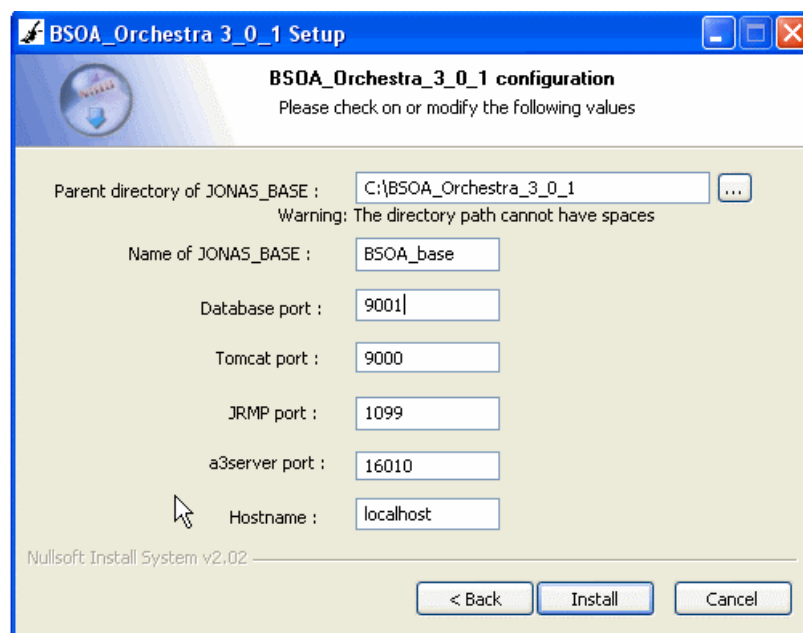
4.2 Windows® Installation

To install the Bull Service-Oriented Architecture Platform, first install ANT and JOnAS.

- **Step 1:** Make sure that the JAVA_HOME, JONAS_ROOT and ANT_HOME environment variables are correctly set and that the PATH contains %JAVA_HOME%/bin,%ANT_HOME%/bin and %JONAS_ROOT%/bin/nt.
- **Step 2:** Then double click on "BSOA_Orchestra_'version'.exe", which is on the BSOA CD-ROM and follow the instructions.

The following dialog box will display to allow changing the default port numbers:

Figure 4-1. Dialog for Changing Default Port Numbers



If a conflict in port numbers is detected after the initial installation, the port numbers can be changed by running "configure.bat" from the parent directory of the JONAS_BASE setting (the install directory).

Chapter 5. Starting and Stopping BSOA

5.1 Linux®

To run BSOA, type "bsoap start".

To stop BSOA, type "bsoap stop".

5.2 Windows®

To run BSOA go to the Start menu, Programs, BSOA_Orchestra, then click on start.

To stop BSOA go to the Start menu, Programs, BSOA_Orchestra, then click on stop.

Chapter 6. Accessing the BSOA Console

To access the Orchestra Administration Console, connect to the following URL

`http://Your_Host:Your_HttpPort/jiapAdmin` (user bsoa, password bsoa).

(Default: <http://localhost:9000/jiapAdmin>).



Note:

JIAF stands for JOnAS Integrated Application Platform.

Chapter 7. Launching Zenflow: the BPEL Designer

Refer to the [Zenflow Overview](#) document for more information about Zenflow.

7.1 Linux®

To launch Zenflow, go to the directory `BSOA_Orchestra_'version'`, and then type `zenflow.sh`.

7.2 Windows®

To launch Zenflow go to the Start menu, Programs, BSOA_Orchestra, BPEL Designer, and then click on Zenflow.

Chapter 8. Launching BPEM: the Orchestra Monitoring Tool

Refer to the [BPEM Process Monitor Overview](#) document for more information about BPEM.

8.1 Linux®

To launch BPEM, BSOA must be running. Go to the directory `BSOA_Orchestra_'version'`, and then type `bpem.sh`.

8.2 Windows®

To launch BPEM, BSOA must be running. Go to the Start menu, Programs, BSOA_Orchestra, BPEL Monitoring tool, and then click on BPEM.

Chapter 9. Resource Checklist

The following table shows the system resources used by BSOA:

Table 9-1. System Resources Used by BSOA

Parameter	Default Value	Described in file
HTTP Host	localhost	Host name used by Orchestra Web start applications to get the connection
HTTP Port Number	9000	The port where the JOnAS Application Server listens to HTTP requests
JRMP Port	1099	The port Used by Orchestra Web start applications to get the connection
JMS Port	16010	Another port used by Orchestra Web start application to get the connection
DataBase	9001 *	The HSQL Database is used by BSOA to store JOnAS authentication parameters, and Orchestra user profiles. The HSQL database server listens on port 9001.

*See Chapter 10 for Configuring Alternative Databases

Chapter 10. Configuring Alternative Databases

BSOA uses a database to store JOnAS authentication parameters, Orchestra User Profiles and the state of BPEL processes for recovery.

The database may be contained in memory or in a JDBC-compliant database. The HSQL database is used by default.

The database may be accessed using the JOnAS dbm service or via a JOnAS resource adapter. The JOnAS dbm service is used by default.

When the database is not HSQL, a JDBC driver must be placed in \$BPEL_HOME/lib/ext/jdbcDrivers/.



Important:

Place the jdbc driver in \$BPEL_HOME/lib/ext/jdbcDrivers/. (Note that this is not necessary for the HSQL driver because it is already packaged and installed with JOnAS.) To verify that all of the JARs are correctly deployed, perform the following:

```
jonas -n BPEL admin -j
```

10.1 Using In Memory Database

Edit the BPELConfig.xml file located in \$BPEL_HOME/conf. Change <EngineMode mode="DB"/> to <EngineMode mode="memory"/>.



Note:

Memory mode is much faster, but the state of BPEL processes is not persistent and cannot be recovered if Orchestra must be restarted.

10.2 Using JOnAS dbm Service with Another Database

1. Modify the bpel.properties file in \$JONAS_BASE/conf. For example, the following parameters may be used for PostgreSQL.

```
datasource.name bpel
datasource.url {url} (e.g. jdbc:postgresql://localhost:5432/db_bpel)
datasource.classname {Driver} {e.g. for postgresSQL : org.postgresql.Driver}
datasource.username {username}
datasource.password {password}
datasource.mapper {mapper} {e.g. for postgresSQL : rdb.postgres}

# JDBC connection checking level.
# 0 = no special checking
# 1 = check physical connection is still open before reusing it
# 2 = try every connection before reusing it
jdbc.connchecklevel 1
jdbc.connmaxage 30
jdbc.connteststmt select 1
```

2. Remove the db jonas service from the jonas.properties file if the hsql database is no longer being used.
`jonas.services registry,jmx,jtm,db,dbm,security,resource,ejb,ws,web,loadprocess,ear`
3. Start Orchestra (`bsoap start`).
4. Create a database instance by entering the following two commands from a command prompt.
 - `cd <installation_directory>`
 - `ant initBsoaDb`

10.3 Using JOnAS Resource Adapter

To migrate from dbm to JDBC RA, perform the following steps:

1. Create a properties file for the new database as stated in Section 10.2.
2. Create an rar file using the following command line:

On Linux®:

```
RAConfig -dm -p $JONAS_BASE/conf/HSQ11
$JONAS_ROOT/rars/autoload/JOnAS_jdbcDM DM_HSQL_BPEL
```

On Windows®:

```
RAConfig -dm -p %JONAS_BASE%\conf\HSQ11
%JONAS_ROOT%\rars\autoload\JOnAS_jdbcDM DM_HSQL_BPEL
```

This command will create a file DM_HSQL_BPEL.rar based on the file HSQ11.properties (remember to modify the HSQ11.properties file per the instructions stated above before running this command).

3. Copy the rar file to \$JONAS_BASE/rars:
`cp DM_HQSL_BPEL.rar $JONAS_BASE/rars`
4. Remove the dbm service from the list of JOnAS services in the jonas.properties file (the db service should also be removed if the HSQL database is not being used).
`jonas.services registry,jmx,jtm,db,dbm,security,resource,ejb,ws,web,loadprocess,ear`
5. Add the rar to the list of resource services in the jonas.properties file.
 For example:
`jonas.service.resource.resources DM_HSQL_BPEL`
6. Start Orchestra.

Chapter 11. Configuring Loggers

Edit `$JONAS_BASE/conf/trace.properties`.

The following lines are located at the end of the file:

```
# -----
# For Orchestra
# -----
handler.orchestraFile.type File
handler.orchestraFile.output orchestra.log
handler.orchestraFile.pattern %d : %l : %h : %O{1}:%M : %m%n
logger.orchestraFile.additivity false

handler.orchestraConsole.type Console
handler.orchestraConsole.output Switch
handler.orchestraConsole.pattern %d : %l : %h : %O{1}:%M : %m%n

#logger.orchestra.handler.0 orchestraFile
#logger.orchestra.handler.1 orchestraConsole

logger.orchestra.level INFO

#logger.orchestra.engine DEBUG
#logger.orchestra.engine.traceBPI.level DEBUG
#logger.orchestra.engine.traceBPU.level DEBUG
#logger.orchestra.engine.traceEngine.level DEBUG
#logger.orchestra.engine.traceSM.level DEBUG
#logger.orchestra.traceManager.level DEBUG
#logger.orchestra.traceTimer.level DEBUG
#logger.orchestra.traceData.level DEBUG
#logger.orchestra.traceMonitoring.level DEBUG
#logger.orchestra.traceRestart.level DEBUG
#logger.orchestra.traceAdmin.level DEBUG
#logger.orchestra.traceBF.level DEBUG
#logger.orchestra.traceWS.level DEBUG
#logger.orchestra.trace.level DEBUG
```

The default configuration is “no logger”. This configuration can be changed by uncommenting some/all of the configuration lines.

Chapter 12. BSOA Orchestra Documentation

Refer to the following documentation for complete information about BSOA Orchestra v3.0:

Getting Started (This document)

Overview & Examples (Reference 86 A2 53ER 01)

Frequently Asked Questions (FAQs) (Reference 86 A2 54ER 01)

BPEM Process Monitor Overview (Reference 86 A2 56ER 01)

BPEM Process Monitor - Bpemdemo1 Tutorial (Reference 86 A2 57ER 01)

BPEM Process Monitor - Marketplace Tutorial (Reference 86 A2 58ER 01)

Zenflow Overview (Reference 86 A2 55ER 01)

Zenflow Plug-in User's Guide (Reference 86 A2 20ET 01)

Zenflow Standalone User's Guide (Reference 86 A2 71ET 00)

Quickstart Tutorial - Create a New BPEL File (Reference 86 A2 17ET 01)

Quickstart Tutorial - View an Existing BPEL File (Reference 86 A2 16ET 01)

Zenflow Weather2 Tutorial (Reference 86 A2 50ET 01)

Process Console User's Guide (Reference 86 A2 62ER 01)

A comprehensive guide that combines the following four documents from the previous version of Orchestra:

Administrator's Guide

Designer's Guide

Operator's Guide

User's Guide

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