ISM V2.5
Quick start

SoluLink

This document is a user guide for ISM(Integration Service Mastery). ISM contains knowledge and experiences of integration in financial industry. If you want to copy or reuse contents of this guide, contact Solulink.

Table of Contents

1   Introduction

This guide will work you through installaing and starting up ISM for JBOSS. ISM for JBOSS is tested on JBoss AS 7.1.1 or eap 6.0 version. ISM for JBoss does not include JBoss installation files. You need to install JBoss separately.

2   ISM Installation overview

2.1   Pre requesites

This guide is targeting to install ISM on JBoss application server 7.1 version.

2.1.1 Setup file

- ism-2.5.<version>.setup.jar

2.1.2 Hardware requirements

ISM requires these hardware specification at least
- 800 Mhz processor
- 4 GB RAM
- 200 MB disk

2.1.3 Software requirements

2.1.3.1 Java Development Kit

-    Version 1.6 or higher

-    1.7 is not tested yet.

2.1.3.2 RDBMS

- Oracle 10g r2 higher , SQLServer 2008, MySQL 5 higher. (When you use MySQL, refer to MySQL configuration chapter)
- Database is used as ISM Repository.

3   Installation

Execute ISM setup file to start installation.

3.1   Execute command

$> java -jar ism.2.5.<version>.setup..jar

3.2   Graphical setup

3.2.1 Select language
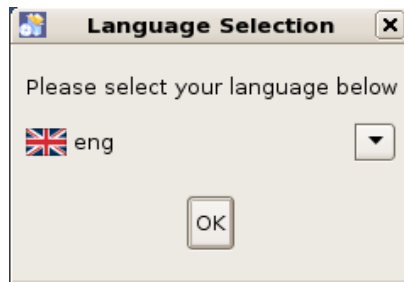
Setup program provides two kinds of language while installation – Korean, English.

3.2.2 Welcome panel
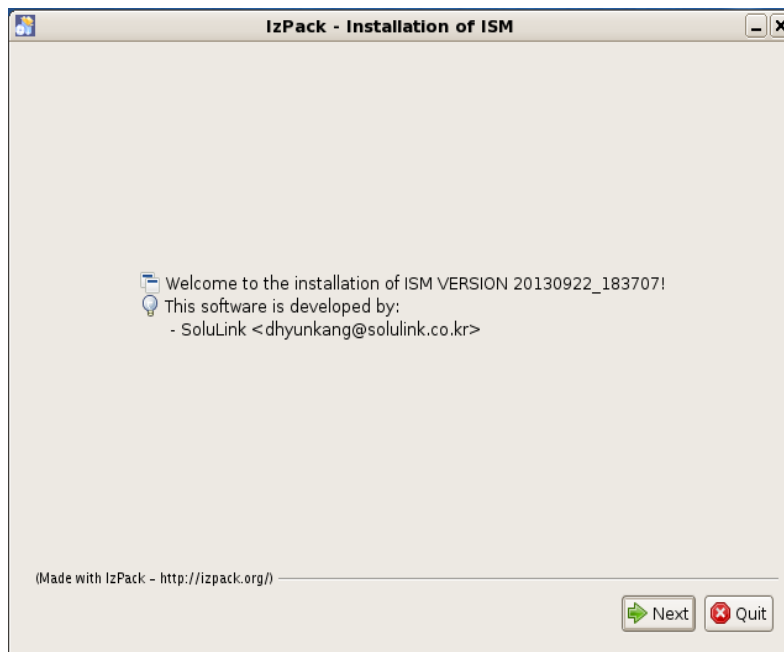
3.2.3 Readme panel
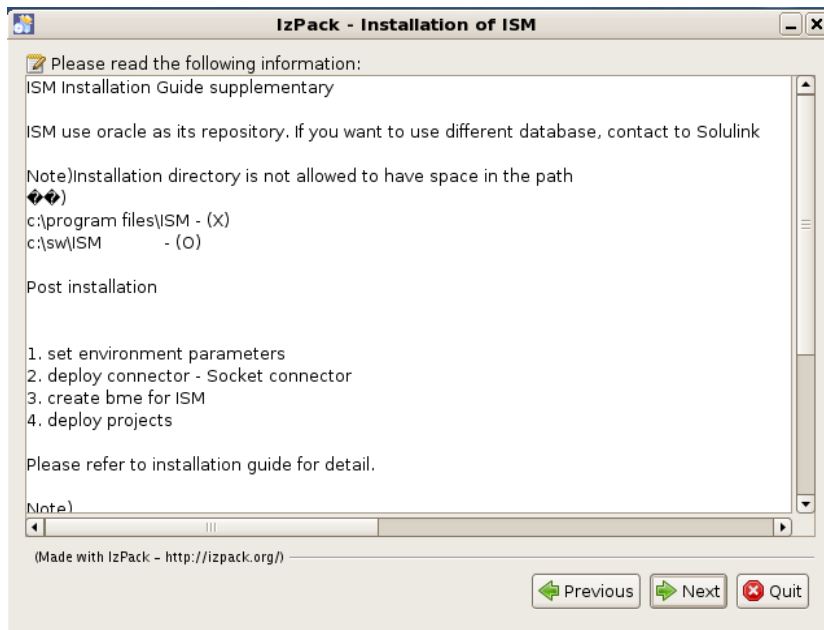
3.2.4 License panel

Agree the license and go to next.
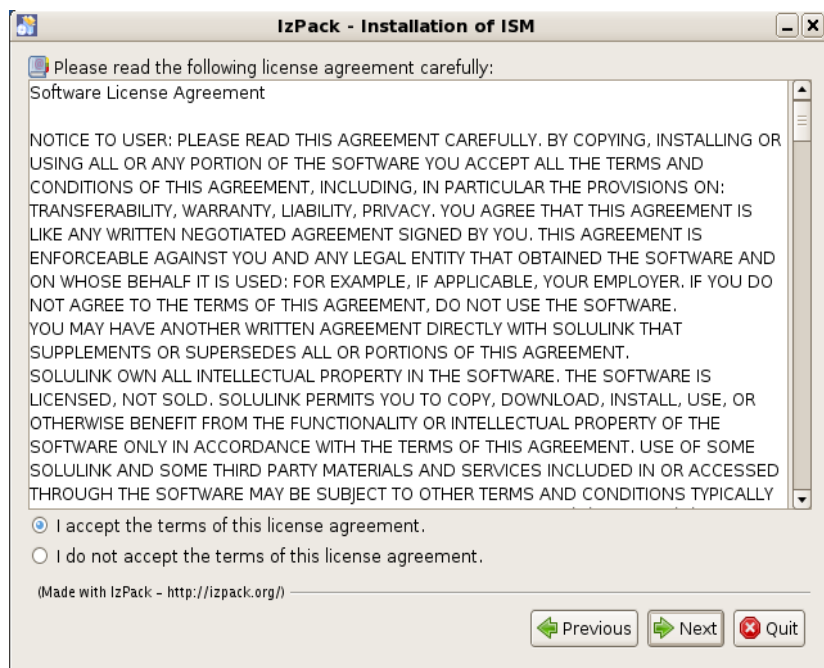
3.2.5 ISM Path panel

Choose ISM path. Be careful not to include space inside the path like 'c:\program files\ISM'. It may cause wrong operation of ISM commands.
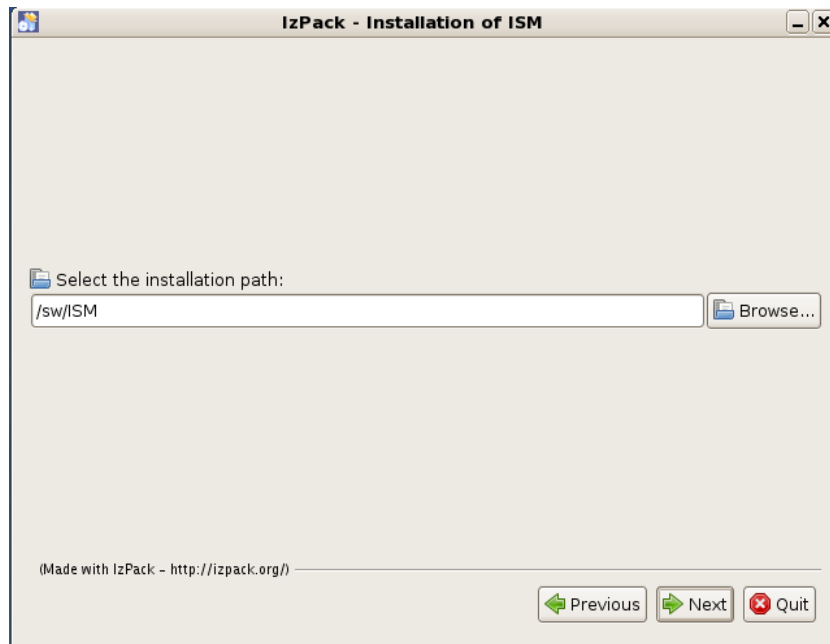
3.2.6 Components panel

Choose components to be installed. Just leave as it is.
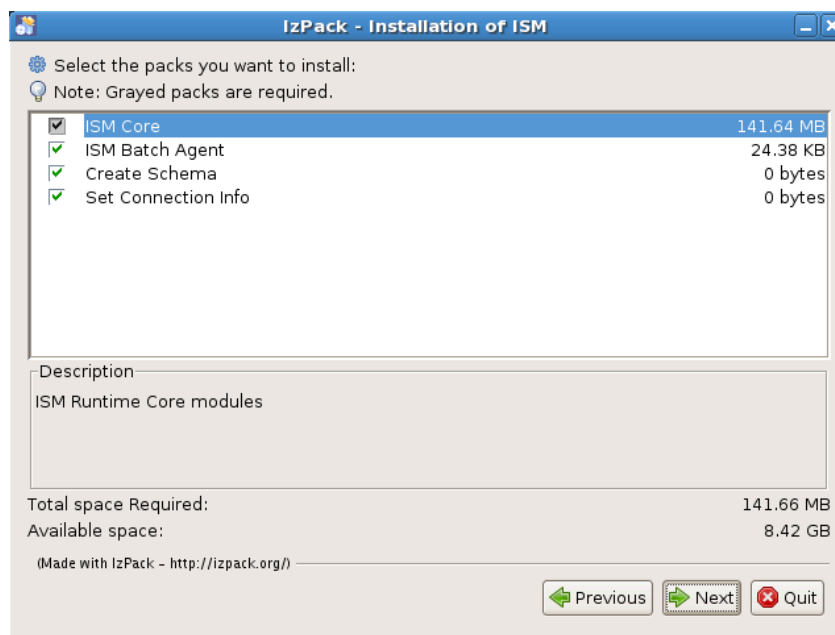
3.2.7 Repository panel

Enter ISM repository connection properties. This guide uses mysql as ISM repository.
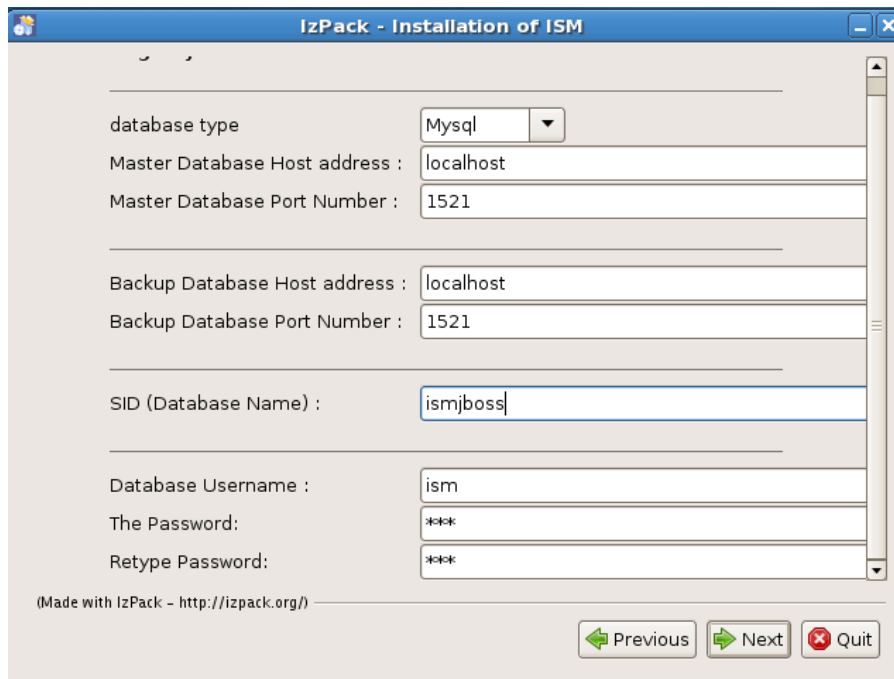
Property Name	Description	default
Database type	Repository DB type SQLServer Oracle Mysql	Oracle
Master Database Host address	Master database host	Localhost
Master Database Port number	Master database port	1521
Backup Database Host address	Backup database host	Localhost
Backup Database Port number	Backup database port	1521
SID	DB name. *) Oracle – enter service name not SID	ISM
Database username	DB user id	ism
Password	DB password	

3.2.8 JBOSS Server Setting panel

Enter JBoss EJB and HTTP properties.

If you use default setting, you don't have to change ports.
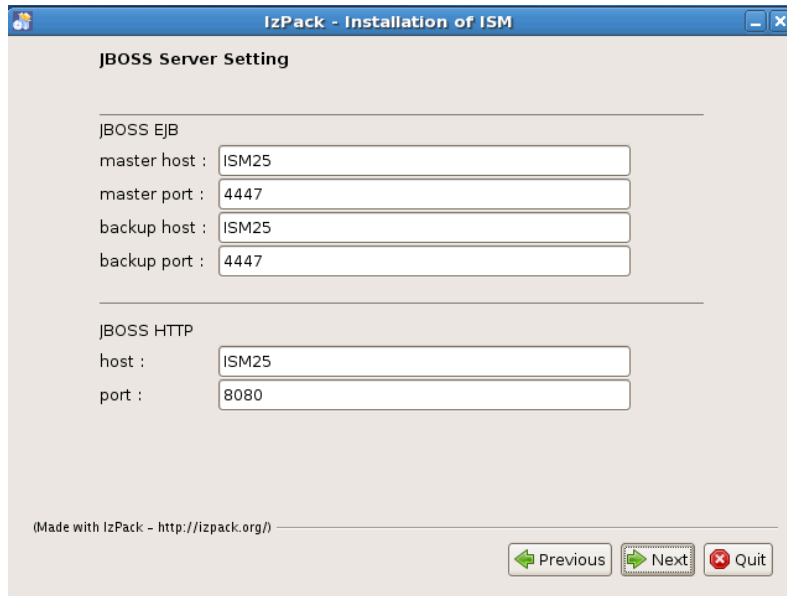
JBOSS EJB

Property Name	Description	default
Master host	JBOSS Master host	Localhost
Master port	JBOSS EJB listening port	4447
Backup host	JBOSS Backup host	Localhost
Backup port	JBOSS EJB listening port	4447

JBOSS HTTP

Property Name	Description	default
Host	JBOSS Web server host	Localhost
Port	Web server listening port	8080

3.2.9 File copy panel

All configurations are completed, files are copied.
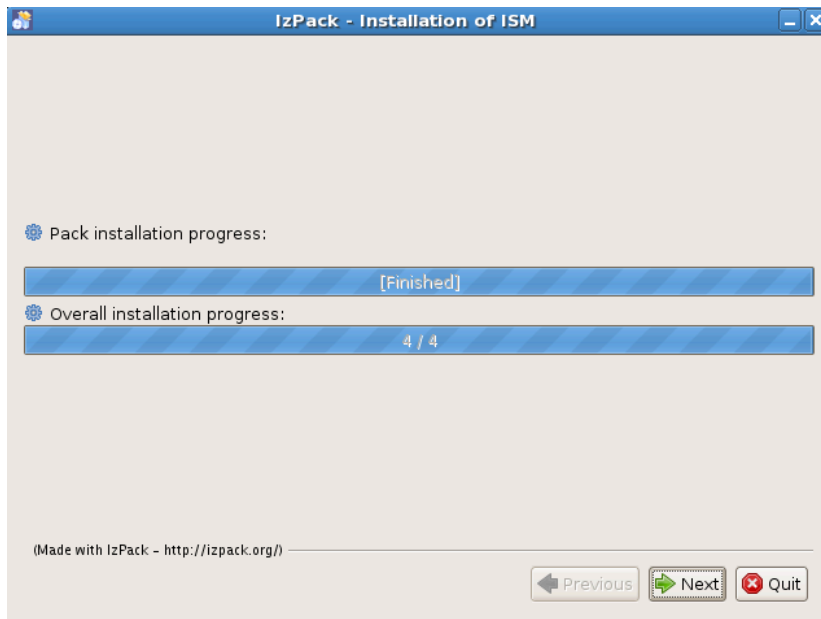
3.2.10 Schema panel

After files are copied, schema generation is executed. Schema generation includes table creation and default data generation.
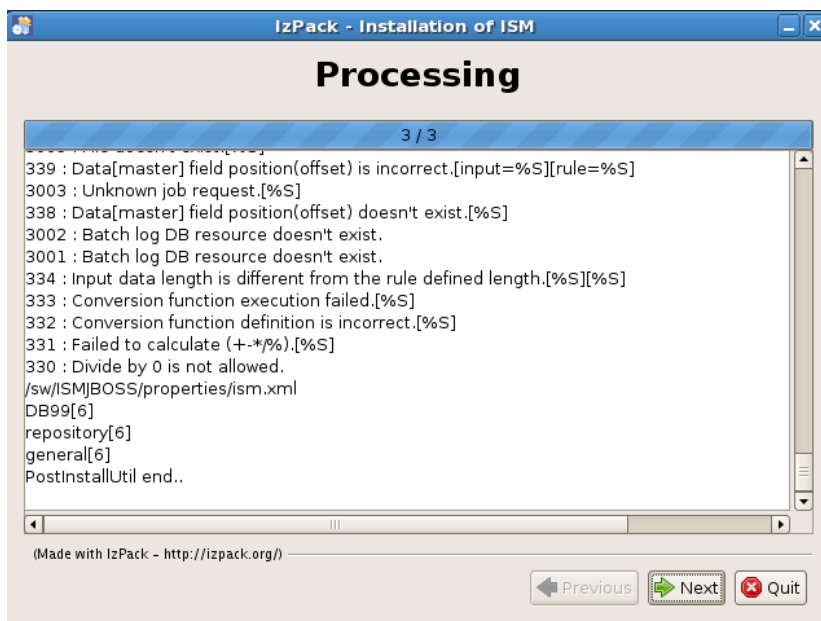
3.2.11 Complete panel

Click Done and finish installation.
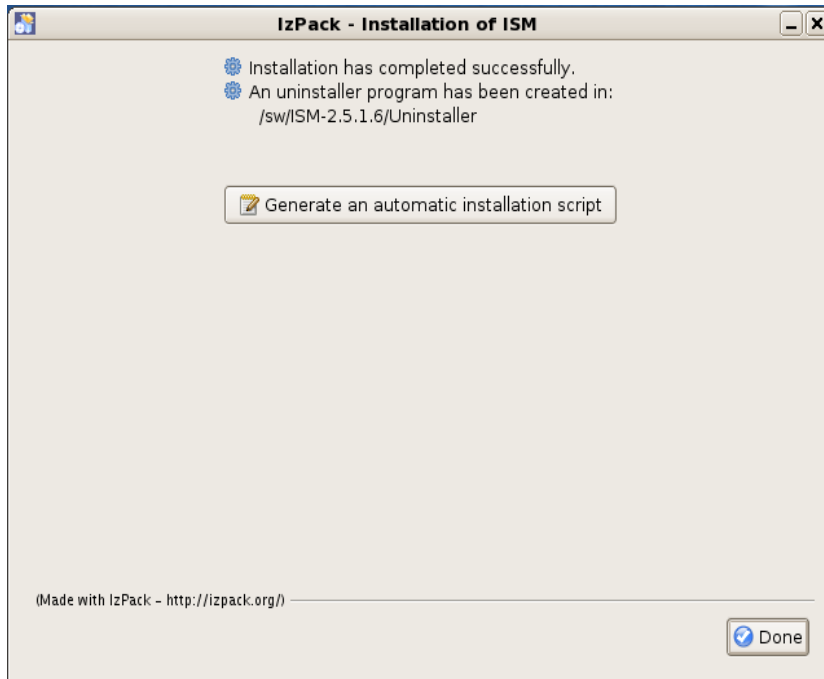
4 Post installation tasks

4.1 Environment variables

4.1.1 Unix

Set environment variables below to ISM user's .profile.

Name	Description	value
ISM_HOME	ISM installation path	
ISM_LIB	ISM library path	$ISM_HOME/lib
ISM_LOG	ISM log path	$ISM_HOME/logs
ISM_PROPERTIES	ISM properties file path	$ISM_HOME/properties

4.1.2 Windows

Set environment variables below to System environment variables.

These variables must be applied before Bserv is started.

Name	Description	value
ISM_HOME	ISM installation path	
ISM_LIB	ISM library path	%ISM_HOME%\lib
ISM_LOG	ISM log path	%ISM_HOME%\logs
ISM_PROPERTIES	ISM properties file path	%ISM_HOME%\properties

4.2 Batch agent

Batch agent installation file is also included in the ISM installation. The setup file is %ISM_HOME%\ism.agent.x.x.x.x.setup.jar. (x.x.x.x is version number)

4.2.1 Install batch agent

Run ism agent setup file.

```
scott:jboss dhyunkang$ java -jar ism.agent.2.5.1_28.setup.jar
*++++++++++++++++++++++++++++++++++++++*
* Welcome to ISM Version 2.5
* current OS : Mac OS X 10.9
*++++++++++++++++++++++++++++++++++++++*
install directory not specified...
Enter install directory>  ← enter batch agent installation directory
[C]Would you like to install this directory?>y
Enter java home directory[/sw/1.6.0.jdk/]>  ← enter java home directory
Enter ISM running server[localhost]>  ← enter ISM host ip or hostname.
Enter ISM listening port[8080]>  ← enter ISM http port. Default is 8080.
[C]ISM is running here[localhost:8080]?>y
1. check install directory...
2. extract files...
3. change parameters...
Finished
*************************************************
* ISM Batch Agent V2.5 Installation finished
* Installation Directory : /sw/build/ISM/jboss/batch_agent
* property file  : /sw/build/ISM/jboss/batch_agent/conf/ism.xml
* To remove, just remove the installed directory
*************************************************
```

4.2.2 Directories of Batch agent

Batch Agent consists of these directories.

Directory	File	Description
bin	batch.bat	Batch agent execution file for windows
	batch.sh	Batch agent execution file for unix/linux
conf	ism.xml	Batch Agent configuration file
lib	ism.jar	Batch Agent clsspath
	ism-all.jar	Batch Agent jar
log	ism.log	Batch agent log file

4.2.3 httpbatch.sh

```
#!/bin/sh
BATCH_HOME=/ism/batch_agent
ISM_LIB=$BATCH_HOME/lib
JAVA_HOME=/usr/java14_64
JAVA_BIN=$JAVA_HOME/bin/java
export CLASSPATH=$ISM_LIB/ism.jar:$CLASSPATH
cd $BATCH_HOME/bin
$JAVA_BIN -Dfile.encoding=UTF-8 com.ism.was.batch.HTTPBatchAgent -conf
$BATCH_HOME/conf/ISM.xml $@
exit_code=$?

exit $exit_code
```

VARIABLE	batch.sh
BATCH_HOME	Batch Agent installation directory

VARIABLE	batch.sh
ISM_LIB	Batch Agent library path
JAVA_HOME	jdk or jre path
JAVA_BIN	Java command

4.2.4 ism.xml

```
<?xml version="1.0" encoding="euc-kr"?>
<ism>
  <common license="/sw/ISM/batch_agent/conf/license.txt">
        <log class="com.ism.logger.ConsoleLogger" level="4"
         file="/ISM/batch_agent/log/ism.log" size="10m" backup="5"/>
        <exception language="ko" nation="KR">$ISM_PROPERTIES</exception>
  </common>
  <resources>
        <env key="ISM_PROPERTIES"   value="/ism/batch_agent/conf" />
  </resources>
  <batch>
        <agent>
                <host>ism.master</host><!-- Job Manager host -->
                <port>8080</port><!-- Job Manager port -->
                <timeout>600</timeout><!— socket connection/read timeout  -->
                <interface system="COR"/>
                <resultcheck count="100" interval="3"/>
        </agent>
  </batch>
</ism>
```

Property	ISM.xml
ism.common.license	ISM license path. Copy $ISM_HOME/data/license.txt to the assigned directory.
ism.common.log.class	Batch Agent log class - com.ISM.logger.ConsoleLogger : log into ism.common.log.file
ism.common.log.level	Log level - 0 : Error - 1 : Warning - 2 : Normal - 3 : Verbose - 4 : Trivia
ism.common.log.file	Log file location
ism.common.log.size	Log file size
ism.common.log.backup	Number of log files.
ism.batch.agent.host	ISM Job manager host. If job managers are running in multiple servers, put all the host names or ip address, separated by comma(,).
ism.batch.agent.port	Job manager port. If job managers are listening on multiple ports, put all the ports, separated by comma(,).

Property	ISM.xml
ism.batch.agent.timeout	Job manager connection timeout seconds.
ism.batch.agent.resultcheck.count	Job result check count. This value determines how many times it will try to check the result until the batch job is completed.
ism.batch.agent.resultcheck.interval	Job result check interval seconds. resultcheck.count * resultcheck.interval = job timeout

4.3   configuration files

Configuration file is integrated with ism.xml in JBOSS version. The files under ISM_install_path/properties/console are used for ID generation rule.

4.3.1 ism_id_rule.xml

This file defines the ID generation rule for items of Interface.

```
<INTEGRATIONSERVICE length="12">
<!--
        <data length="3" default="ISM" pattern="[A-Z]+" paramName="workCode" />
        <data length="1" default="B" pattern="[OBD]" paramName="interfaceType" />
        <data length="1" default="N" pattern="[YN]" paramName="twoPhaseCommit" />
        <data length="5" default="00000" pattern="(.)+" paramName="others" isSequence="true"/>
        <data length="2" default="00" pattern="00" paramName="connectorNumber" isPost="true"/>
-->
 </INTEGRATIONSERVICE>
```

4.4   ISM JCA Socket configuration

4.4.1 ISM JCA Socket configuration

If you want to use TCP Socket interface with ISM Socket adapter, use $ISM_HOME/properties/ism-socket.xml to configure inbound / outbound socket properties.

4.4.1.1 inbound configuration

Each inbound is defined with <inbound-adapter> element.

```
<ismsocket>
 <inbound-adapters>
  <inbound-adapter>
  </inbound-adapter>
 <inbound-adapter>
</ismsocket>
```

Properties	Description
name	inbound name. This name is used as a parser name of ism.xml .
ipAddress	Listening host. Localhost means listening on all ip address.(0.0.0.0)
port	Listen port.
encoding	Message Encoding
maximumConnections	Maximum concurrent connection
connectionTimeoutMilliseconds	accept timeout

lengthFieldOffset	Message length field offset
lengthFieldLength	The length of Message length field
lengthFieldType	Length expression type . A : Ascii , B : Binary
isTotalLength	Indicator for total length or not.
syncOffset	Sync / Async field offset
syncLength	Sync / Async field length
syncPattern	Sync / Async pattern. Use regular expression.
maxLength	Max message length
handlerClass	Message handler Class. The class is not specified, then default handler class is used.

4.4.1.2 outbound configuration

Outbound has only one common type. If message layout is different, define same properties in $ISM_PROPERTIES/deploy/[ISM-SYSTEM-ID]-socket.xml file.

```
<ismsocket>
    <outbound-adapter>
    </outbound-adapter>
</ismsocket>
```

Properties	Description
encoding	Message Encoding
maximumConnections	Maximum concurrent connection
connectionTimeoutMilliseconds	accept timeout
lengthFieldOffset	Message length field offset
lengthFieldLength	The length of Message length field
lengthFieldType	Length expression type . A : Ascii , B : Binary
isTotalLength	Indicator for total length or not.
syncOffset	Sync / Async field offset
syncLength	Sync / Async field length
syncPattern	Sync / Async pattern. Use regular expression.
maxLength	Max message length
handlerClass	Message handler Class. The class is not specified, then default handler class is used.

5   JBOSS configuration

5.1   Install JBOSS

Unzip Jboss Application Server Version 7 installation file onto the directory where you will install JBOSS.
Set up JBOSS_HOME environment variable.
Add executable mode to $JBOSS_HOME/bin/*.sh under Unix / Linux systems.

5.2   ISM configuration

When you use Oracle as ISM repository, you can meet XA error. In that case add XA privileges to ISM Oracle user.
Run $ISM_HOME/properties/oracle_xa.sql.

```
GRANT SELECT ON sys.dba_pending_transactions TO [ISM DB User];
GRANT SELECT ON sys.pending_trans$ TO [ISM DB User];
GRANT SELECT ON sys.dba_2pc_pending TO [ISM DB User];
```

```
GRANT EXECUTE ON sys.dbms_xa TO [ISM DB User];
```

5.2.1 standalone mode

5.2.1.1 Add ISM properties

Append below line to the end of $JBOSS_HOME/bin/standalone.conf file.

```
JAVA_OPTS="-Dism.properties=$ISM_PROPERTIES -Dism.conf=$ISM_PROPERTIES/ism.xml
$JAVA_OPTS "
```

In windows, add this property $JBOSS_HOME/bin/standalone.conf.bat file.

5.2.1.2 Add ISM module

Add jdbc and ISM libraries as JBoss module.
Copy $ISM_HOME/application/modules/ to $JBOSS_HOME/modules directory.

```
$ cp -Rfp $ISM_HOME/application/modules/* $JBOSS_HOME/modules
```

5.2.1.3 Copy standalone configuration

Copy $ISM_HOME/properties/standalone-[version].xml file to $JBOSS_HOME/standalone/configuration directory.
This file contains ISM queue and data source properties set up while installation.
Jboss-version name is either as-7.1.1 or eap-6.0.1.

```
$ cp $ISM_PROPERTIES/standalone-[version].xml
$JBOSS_HOME/standalone/configuration/standalone.xml
```

5.2.1.4 Run Jboss standalone mode

* To access JBOSS admin console, you need admin account.
First create an admin account.

```
$ $JBOSS_HOME/bin/add-user.sh
What type of user do you wish to add?
a) Management User (mgmt-users.properties)
b) Application User (application-users.properties)
(a): a ↵

Enter the details of the new user to add.
Realm (ManagementRealm) : 8
Username : [admin account id] ↵
Password : [admin password] ↵
Re-enter Password : [admin password] ↵
```

Run JBOSS.

```
$ $JBOSS_HOME/bin/standalone.sh
```

5.2.1.5 ISM Deploy

Access to JBOSS admin console, deploy ISM application.
* admin console URL : http://[JBOSS_Installed_Host]:9990/

ISM applications for JBoss are located under $ISM_HOME/application. Deploy applications with following order.
1. ism-jca-socket.rar
2. ism-jca-socket-target.rar

3. ISM.ear

After all the applications are deployed, enable applications. Enable order is same with deploy.

5.2.1.6 JBoss standalone.xml

This is the explanation of what changed for ISM. ISM uses standalone-full.xml for remote EJB invocation.

Add System property for ISM Socket Adapter

```
<system-properties>
<property name="ism.socket.config.file" value="${ISM_HOME}/properties/ism-socket.xml"/>
</system-properties>
```

Add ISM DataSource

```
<profile>
<subsystem xmlns="urn:jboss:domain:datasources:1.0">
<datasources> …. </datasources>
</subsystem>
</profile>
```

Add JMS Queue

```
<profile>
<subsystem xmsns="urn:jboss:domain:messaging:1.1">
<hornetq-server>
<jms-destinations>
<jms-queue name="ISMJOB">
<entry name="queue/ISMJOB"/>
</jms-queue>
<jms-queue name="ISMRULE">
<entry name="queue/ISMRULE"/>
</jms-queue>
<jms-queue name="ISMONL">
<entry name="queue/ISMONL"/>
</jms-queue>
<jms-queue name="ISMONLDEAD">
<entry name="queue/ISMONLDEAD"/>
</jms-queue>
<jms-queue name="ISMDFD">
<entry name="queue/ISMDFD"/>
</jms-queue>
<jms-queue name="ISMONLLOG">
<entry name="queue/ISMONLLOG"/>
</jms-queue>
</jms-destinations>
</hornetq-server>
</subsystem>
</profile>
```

Add ISM Socket Resource Adapter

```
<subsystem xmlns="urn:jboss:domain:resource-adapters:1.0">
<resource-adapters>
<resource-adapter>
<archive>ism-jca-socket-target.rar</archive>
<transaction-support>NoTransaction</transaction-support>
```

```
<connection-definitions>
<connection-definition class-name="com.ism.jca.sockets.target.SocketManagedConnectionFactory" jndi-
name="java:/eis/ISMSocket" enabled="true" pool-name="ISMSocket"/>
</connection-definitions>
</resource-adapter>
</resource-adapters>
</subsystem>
```

6 Starting up ISM for JBoss

6.1 Starting ISM and JBoss

Go to $ISM_HOME/bin(%ISM_HOME%\bin in windows) directory.
Run this command.

```
$>ismadmin pmgr start
```

This command starts rule cache processes. Before you run JBoss server, you have to start rule cache first.

Go to $JBOSS_HOME/bin(%JBOSS_HOME%\bin) directory
Run this command.

```
$>standalone
```

It will start JBoss application server in standalone mode. If all the ISM applications are deployed and enabled, then you can see ISM applications are started.

Open your web browser and go to this url.

http://localhost:8080/ISM25

Default userid/password is ism/fiss. "ism" user is the administrator of ISM.

6.2 Shutdown ISM and JBoss

First stop JBoss, you just press Ctrl-C on the terminal or dos windows.

Stop ISM rule cache processes.

```
$>ismadmin pmgr stopall
```
In windows, you just close the dos windows or press Ctrl-C.

7 Note for MySQL RDBMS

When you use MySQL as ISM repository, Add followings to /etc/my.cnf file.

7.1 Encoding (UTF-8)

```
[client]
default-character-set = utf8

[mysqld]
init_connect = SET collation_connection = utf8_general_ci
```

```
init_connect = SET NAMES utf8
default-character-set = utf8
character-set-server = utf8
collation-server = utf8_general_ci

[mysqldump]
default-character-set = utf8

[mysql]
default-character-set = utf8
```

7.2   Case insensitive table name

```
[mysqld]
lower_case_table_names = 1
sql_mode = ANSI_QUOTES
```

7.3   Change MySQL Engine

```
[mysqld]
default-storage-engine = innodb
transaction-isolation = READ-COMMITTED
binlog_format = row
```