

Version 1.0.0

June 6, 2022

ILEB Codeshuttle  
Deploy Guide

# Summary of Changes

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| --- | --- | --- |
| Change | Version | Owner |
| Initial Version | 1.0 | Lavanya Gopal |
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# Purpose

The purpose of this document is to provide detailed description of the steps involved in order to move and ILEB ETL code to Code Shuttle process.

# Required Software

1. Pentaho Kettle 8.3
2. Java
3. Oracle Client

# Software Installation Steps

## 3.1 PENTAHO KETTLE

1. Download Java Version 8 Update 192(build 1.8.0\_192)
2. Download pdi-ce-8.3.0.0-371.zip from <https://sourceforge.net/projects/pentaho/>
3. Download ojdbc8 from  
   <https://www.oracle.com/technetwork/database/application-development/jdbc/downloads/jdbc-ucp-19c-5460552.html>
4. Create folder /u01/app/appadmin/product/pentaho\_8.3
5. Unzip pdi-ce-8.3.0.0-371.zip in the folder /u01/app/appadmin/product/pentaho\_8.3
6. Copy ojdbc8 to /u01/app/appadmin/product/pentaho\_8.3/data-integration/lib
7. Download the file svn://svn-staging.maximus.com/dev1d/maxdat/trunk/CAHCO/deploy/jtds-1.3.1.zip.
8. (For reference, this file was originally downloaded from <https://sourceforge.net/p/jtds/bugs/725/>.)
9. Extract the file jtds-1.3.1.jar from jtds-1.3.1.zip
10. Copy the file jtds-1.3.1.jar to /u01/app/appadmin/product/pentaho\_8.3/data-integration/lib (replace if it exists).
11. Remove the file /u01/app/appadmin/product/pentaho\_8.3/data-integration/lib/jtds-1.2.5.jar, if it exists
12. Update /u01/app/appadmin/product/pentaho\_8.3/data-integration/spoon.sh

  After the line below:

setPentahoEnv

Add the line below:

\_PENTAHO\_JAVA='/u01/app/appadmin/product/java/jdk1.8.0\_192/bin/java'

Change this at the bottom of the file:

if [ -z ""$PENTAHO\_DI\_JAVA\_OPTIONS"" ]; then

PENTAHO\_DI\_JAVA\_OPTIONS=""-Xms1024m -Xmx2048m -XX:MaxPermSize=256m""

TO:

if [ -z ""$PENTAHO\_DI\_JAVA\_OPTIONS"" ]; then

PENTAHO\_DI\_JAVA\_OPTIONS=""-Xms1024m -Xmx4096m -XX:MaxPermSize=256m""

1. Rename the following files and directories in /u01/app/appadmin/product/pentaho\_8.3/data-integration if exists using the following format:

<Name>.backup.yyyymmdd for example: kettle-lifecycle-listeners.xml.backup.20190129

/u01/app/appadmin/product/pentaho\_8.3/data-integration/classes/kettle-lifecycle-listeners.xml

/u01/app/appadmin/product/pentaho\_8.3/data-integration/classes/kettle-registry-extensions.xml

/u01/app/appadmin/product/pentaho\_8.3/data-integration/classes/log4j.xml

/u01/app/appadmin/product/pentaho\_8.3/data-integration/lib  
pdi-engine-api-8.3.0.0-371.jar  
pdi-osgi-bridge-core-8.3.0.0-371.jar  
pentaho-connections-8.3.0.0-371.jar  
pentaho-osgi-utils-api-8.3.0.0-371.jar  
pentaho-cwm-1.5.4.jar  
org.apache.karaf.jaas.boot-3.0.3.jar  
org.apache.karaf.main-3.0.3.jar  
org.apache.karaf.util-3.0.3.jar  
mondrian-8.3.0.0-371.jar

/u01/app/appadmin/product/pentaho\_8.3/data-integration/plugins/pentaho-big-data-plugin

/u01/app/appadmin/product/pentaho\_8.3/data-integration/plugins/kettle5-log4j-plugin/log4j.xml

/u01/app/appadmin/product/pentaho\_8.3/data-integration/system/karaf

/u01/app/appadmin/product/pentaho\_8.3/data-integration/system/mondrian

/u01/app/appadmin/product/pentaho\_8.3/data-integration/system/osgi

1. Copy below file under /u01/app/appadmin/product/pentaho\_8.3/data-integration/plugins/kettle5-log4j-plugin/ dir and rename file to log4j.xml

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/Kettle8/Config/kettle5-log4j-plugin\_log4j.xml

1. Copy below file under /u01/app/appadmin/product/pentaho\_8.3/data-integration/classes/ directory and rename to log4j.xml

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/Kettle8/Config/classes\_log4j.xml

1. Open the /u01/app/appadmin/product/java/jdk1.8.0\_192/jre/lib/security/java.security file in a text editor.

Change the line and save the file.

securerandom.source=[file:/dev/random](file:///\\dev\random)

to read:

securerandom.source=[file:/dev/urandom](file:///\\dev\urandom)

## 3.2 ETL JOB MANAGEMENT

1. SKIP this step if  "/u01/app/appadmin/product/oracle/instantclient/sqlplus" file exists

Install SQL\*Plus version v12\_2 (Oracle 12c Release 2) Instant Client to /u01/app/appadmin/product/oracle/instantclient/ folder.  
After the installation, make sure "/u01/app/appadmin/product/oracle/instantclient/sqlplus" file exists.

1. SKIP this step if "securerandom.source" is set to "file:/dev/urandom" in /u01/app/appadmin/product/java/jdk1.8.0\_192/jre/lib/security/java.security file.

Make below change in /u01/app/appadmin/product/java/jdk1.8.0\_192/jre/lib/security/java.security file as below:  
COMMENT THE LINE: securerandom.source=[file:/dev/random](file:///\\dev\random)   
ADD A NEW LINE: securerandom.source=[file:/dev/urandom](file:///\\dev\urandom)

# ETL Code Deployment

1. Create the following directories

/u01/maximus/maxdat/IL8  
/u01/maximus/maxdat/IL8/config  
/u01/maximus/maxdat/IL8/config/.kettle  
/u01/maximus/maxdat/IL8/scripts

/u01/maximus/maxdat/IL8/sql

/u01/maximus/maxdat/IL8/data

/u01/maximus/maxdat/IL8/bin

/u01/maximus/maxdat/IL8/error

/u01/maximus/maxdat/IL8/logs

/u01/maximus/maxdat/IL8/forecasts

/u01/maximus/maxdat/IL8/forecasts/Completed

/u01/maximus/maxdat/IL8/forecasts/Processing

/u01/maximus/maxdat/IL8/forecasts/Error

/u01/maximus/maxdat/IL8/forecasts/Inbound

/u01/maximus/maxdat/IL8/deploy

/u01/maximus/maxdat/IL8/mots

/u01/maximus/maxdat/IL8/mots/files

/u01/maximus/maxdat/IL8/mots/files/Outbound

/u01/maximus/maxdat/IL8/mots/files/Processing

/u01/maximus/maxdat/IL8/mots/files/Processing/Actuals

/u01/maximus/maxdat/IL8/mots/files/Archive

/u01/maximus/maxdat/IL8/mots/files/Inbound

1. Set chmod u+rwx,g+rxs,o+rx permissions on the directories
2. Download kettle.properties file from

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/Kettle8/IL/config/.kettle/kettle.properties

and deploy to:

/u01/maximus/maxdat/IL8/config/.kettle

1. Download shared.xml file from:

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/Kettle8/IL/config/.kettle/shared.xml

and deploy to:

/u01/maximus/maxdat/IL8/config/.kettle

1. Make a backup of the following file

/u01/app/appadmin/product/pentaho\_8.3/data-integration/simple-jdni/jdbc.properties

1. Download the following file from:

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/Kettle8/IL/config/simple-jndi/jdbc.properties

and deploy to:

/u01/app/appadmin/product/pentaho\_8.3/data-integration/simple-jdni

1. Download the following zip file

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/Kettle8/IL/PRD\_scripts.zip

1. Unzip PRD\_scripts.zip into the /u01/maximus/maxdat/IL8/scripts directory
2. Set 755 permissions on ALL shell script files (\*.sh) in ALL scripts directories and sub-directories
3. Take a backup of the following 5 files below:

/u01/maximus/maxdat/IL8/scripts/etl\_job\_control.bash  
/u01/maximus/maxdat/IL8/scripts/etl\_job\_exec.bash  
/u01/maximus/maxdat/IL8/sql/get\_etl\_jobs.sql  
/u01/maximus/maxdat/IL8/sql/get\_etl\_stuck\_jobs.sql  
/u01/maximus/maxdat/IL8/sql/upd\_etl\_jobs.sql

1. Download the below 2 files (DO NOT RUN THEM) from SVN and overwrite the existing files in "/u01/maximus/maxdat/IL8/sql/" folder

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/sql/get\_etl\_jobs.sql  
svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/sql/get\_etl\_stuck\_jobs.sql

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/sql/complete\_etl\_job.sql

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/add\_etl\_job.sql

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/add\_etl\_log.sql

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/set\_etl\_jobs.sql

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/upd\_etl\_job.sql

1. Download the below 2 files (DO NOT RUN THEM) from SVN and overwrite the existing files in "/u01/maximus/maxdat/IL8/scripts/" folder

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/scripts/etl\_job\_control.bash  
svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/scripts/etl\_job\_exec.bash

svn://svn-staging.maximus.com/dev1d/maxdat/trunk/ETL\_Job\_Control/ETL/scripts/decr.sh

1. Set CHMOD on these two files to "755" and convert them to "UNIX" format
2. Execute the following script manually

nohup /u01/maximus/maxdat/IL8/scripts/il\_run\_connect\_test.sh

1. Create the following cron tabs:

0,10,20,30,40,50 \* \* \* \* bash /u01/maximus/maxdat/IL8/scripts/etl\_job\_control.bash 2>&1 >> /u01/maximus/maxdat/IL8/logs/ETLJobControl/etl\_job\_control\_$(date +%Y-%m-%d).log  
00 02 \* \* \* find /u01/maximus/maxdat/IL8/logs/ETLJobControl/ -mtime +30 -exec rm {} \; 2>&1 >> /u01/maximus/maxdat/IL8/logs/ETLJobControl/removed\_$(date +'%Y%m%d\_%H%M%S\_%3N').log  
00 02 \* \* \* find /u01/maximus/maxdat/IL8/data/ -mtime +30 -exec rm {} \; 2>&1 >> /u01/maximus/maxdat/IL8/logs/ETLJobControl/removed\_$(date +'%Y%m%d\_%H%M%S\_%3N').log

# Cron Jobs

Create the following cron jobs to run the ETL scripts.

0,10,20,30,40,50 \* \* \* \* bash /u01/maximus/maxdat/IL8/scripts/etl\_job\_control.bash 2>&1 >> /u01/maximus/maxdat/IL8/logs/ETLJobControl/etl\_job\_control\_$(date +%Y-%m-%d).log

00 02 \* \* \* find /u01/maximus/maxdat/IL8/logs/ETLJobControl/ -mtime +30 -exec rm {} \; 2>&1 >> /u01/maximus/maxdat/IL8/logs/ETLJobControl/removed\_$(date +'%Y%m%d\_%H%M%S\_%3N').log

00 02 \* \* \* find /u01/maximus/maxdat/IL8/data/ -mtime +30 -exec rm {} \; 2>&1 >> /u01/maximus/maxdat/IL8/logs/ETLJobControl/removed\_$(date +'%Y%m%d\_%H%M%S\_%3N').log

# Verify Deploy

1. Check if ETL job management scripts are getting executed, after crons are enabled, by executing the query below:

SELECT \*

FROM MAXDAT.ETL\_JOB\_RUN

WHERE RUN\_START\_DT >= '2022-06-01 00:00:00';

-- The above date/time should be corresponding to when CRONs were enabled

1. If the ETL job management script is enabled in the CRON, but the jobs are still not running, check if any jobs in ETL Job management tables are stuck by running the below query. This query will return the JOB\_ID for any jobs stuck on that day. If this query returned no rows and jobs are still not running, this needs further research. If there are any stuck jobs, go to the next step

SELECT JOB\_ID

FROM MAXDAT.ETL\_JOB\_LOG

WHERE LOG\_DESC = 'JOB STUCK - RESET MAY BE REQUIRED'

AND LOG\_UPD\_DT >= '2020-11-02 14:00:00';

-- The above date/time should be corresponding to when CRONs were enabled after the patch

1. Reset each stuck job by executing the RESET\_ETL\_JOB procedure in MAXDAT schema for each JOB\_ID returned in the previous step. Replace “?” below with each JOB\_ID returned in the previous step.

BEGIN

ETL\_JOB.RESET\_ETL\_JOB (?);

END;

1. Verify if the jobs that were reset above are now working fine. ETL Job management shell script is usually scheduled to run every 5 or 10 minutes. So, wait for the next execution of the ETL job management scripts and check if the stuck jobs are started running. If not, this needs further investigation.

# Data Flow Diagram

