**Reference:**

<https://github.com/anair-it/liquibase-example>

**Commands:**

1. **generateChangeLog:**

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd liquibase:generateChangeLog

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd liquibase:generateChangeLog"

<changeLogFile>src/main/resources/master-changelog.xml</changeLogFile>

<driver>oracle.jdbc.OracleDriver</driver>

<url>${DB\_URL}</url>

<username>${DB\_USERNAME}</username>

<password>${DB\_PASSWORD}</password>

<defaultSchemaName>${DB\_SCHEMA}</defaultSchemaName>

<contexts>${DB\_CONTEXT}</contexts>

<logLevel>${LOG\_LEVEL}</logLevel>

<promptOnNonLocalDatabase>false</promptOnNonLocalDatabase>

<tag>${project.version}</tag>

<migrationSqlOutputFile>target/liquibase/migration.sql</migrationSqlOutputFile>

<outputFile>target/liquibase/rollback.sql</outputFile>

<rollbackCount>${ROLLBACK\_COUNT}</rollbackCount>

<rollbackTag>${ROLLBACK\_TAG}</rollbackTag>

**Update: & UpdateSQL:**

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DDB\_DRIVER=oracle.jdbc.OracleDriver -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd liquibase:update

mvn -DDB\_DRIVER=oracle.jdbc.OracleDriver -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd liquibase:updateSQL

**DbDoc:**

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=\*\*\* -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd -Dliquibase.outputDirectory=target/docs liquibase:dbDoc

mvn liquibase:dbDoc -Dliquibase.outputDirectory=target/docs

Future Rollback Script

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=\*\*\* -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd - liquibase:futureRollbackSQL

**DiffChangeLog:**

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd

-DREF\_SRC\_URL=jdbc:oracle:thin:@//picom-s-01.internal.das:1525/picomd -DREF\_SRC\_USERNAME=autoadj -DREF\_SRC\_PASSWORD=aut0\_s1T liquibase:**diff**

**Working:**

**Diff:**

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd -DREF\_SRC\_URL=jdbc:oracle:thin:@//picom-s-01.internal.das:1525/picoms -DREF\_SRC\_USERNAME=autoadj -DREF\_SRC\_PASSWORD=aut0\_s1T liquibase:diff

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DDB\_DRIVER=oracle.jdbc.OracleDriver -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd -DREF\_SRC\_URL=jdbc:oracle:thin:@//picom-s-01.internal.das:1525/picoms -DREF\_SRC\_USERNAME=autoadj -DREF\_SRC\_PASSWORD=aut0\_s1T liquibase:diff

*From <*[*https://docs.liquibase.com/commands/community/diffchangelog.html*](https://docs.liquibase.com/commands/community/diffchangelog.html)*>*

|  |  |  |
| --- | --- | --- |
| PICOMD | ltreng | ltr3ng\_D3v |

picom-d-01.internal.das

**Fresh Start:**

"C:\Program Files\apache-maven-3.3.3\bin\mvn" liquibase:help

Liquibase Maven Plugin

A Maven plugin wraps up some of the functionality of Liquibase

This plugin has 20 goals:

1. **liquibase:changelogSyncSQL**

Generates SQL that marks all unapplied changes as applied.

Testing:

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd **liquibase:changelogSyncSQL**

**Output:** verify migrationSqlOutputFile file

Use this goal - when you have existing DB and want to create Tracking tables

This command uses the master-log-file to generate above o/p file. Pre-requisites: changelog file

1. **liquibase:changelogSync**

Marks all unapplied changes to the database as applied in the change log.

Testing:

Command: "C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd liquibase:**changelogSync**

1. **liquibase:clearCheckSums**

Clears all checksums in the current changelog, so they will be recalculated

next update.

1. **liquibase:dbDoc**

Generates dbDocs against the database.

1. **liquibase:diff**

Generates a diff between the specified database and the reference database.

The output is either a report or a changelog depending on the value of the

diffChangeLogFile parameter.

1. **liquibase:dropAll**

Drops all database objects in the configured schema(s). Note that functions,

procedures and packages are not dropped.

1. **liquibase:futureRollbackSQL**

Generates the SQL that is required to rollback the database to current state

after the next update.

1. **liquibase:generateChangeLog**

Generates SQL that marks all unapplied changes as applied.

Upon running above goal --> you will get change log file as output. We need to specify the output file path in pom.xml --> In this case "outputChangeLogFile"

How we can know about the configuration details? Either use mvn liquibase:help -Ddetail=true -Dgoal=generateChangeLog or refer the documentation

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd liquibase:generateChangeLog

1. **liquibase:help**

Display help information on liquibase-maven-plugin.

Call

mvn liquibase:help -Ddetail=true -Dgoal=<goal-name>

mvn liquibase:help -Ddetail=true -Dgoal=rollbackSQL

"C:\Program Files\apache-maven-3.3.3\bin\mvn" liquibase:help -Ddetail=true -Dgoal=tag

"C:\Program Files\apache-maven-3.3.3\bin\mvn" liquibase:help -Ddetail=true -Dgoal=rollbackSQL

to display parameter details.

1. **liquibase:listLocks**

Lists all Liquibase updater locks on the current database.

1. **liquibase:migrate**

Deprecated. Use the LiquibaseUpdate class or Maven goal 'update' instead.

1. **liquibase:migrateSQL**

Deprecated. Use LiquibaseUpdateSQL or Maven goal 'updateSQL' instead.

1. **liquibase:releaseLocks**

Removes any Liquibase updater locks from the current database.

1. **liquibase:rollback**

Invokes Liquibase rollbacks on a database.

1. **liquibase:rollbackSQL**

Generates the SQL that is required to rollback the database to the specified

pointing attributes 'rollbackCount', 'rollbackTag'

1. **liquibase:status**

Prints which changesets need to be applied to the database.

1. **liquibase:tag**

Writes a Liquibase tag to the database.

1. **liquibase:update**

Applies the DatabaseChangeLogs to the database. Useful as part of the build

process.

1. **liquibase:updateSQL**

Generates the SQL that is required to update the database to the current

version as specified in the DatabaseChangeLogs.

1. **liquibase:updateTestingRollback**

Applies the DatabaseChangeLogs to the database, testing rollback. This is done

by updating the database, rolling it back then updating it again.

Imp learning:

Leverage maven for liquibase.

In pom

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sno** | **Goals** | **Description** | **Usage Usecase** | **Additional remarks** | **Command** |
| 1 | liquibase:changelogSyncSQL |  | Use this goal - when you have existing DB and want to create Tracking tables  This command uses the master-log-file to generate above o/p file. Pre-requisites: changelog file | After generating changeLog using generateChangeLog --> Use changelogSyncSQL to generate SQLs of tracking tables | **liquibase:changelogSyncSQL**  <migrationSqlOutputFile>target/liquibase/migration.sql</migrationSqlOutputFile> |
| 2 | liquibase:changelogSync |  |  | Same as above but this will actually execute the SQLs | **liquibase:changelogSync** |
| 3 | liquibase:clearCheckSums |  |  |  |  |
| 4 | liquibase:dbDoc |  |  |  | **liquibase:dbDoc**    <outputDirectory>target/liquibase/Docs</outputDirectory> |
| 5 | liquibase:diff |  |  |  | Generate Diff between databases |
| 6 | liquibase:dropAll |  |  |  |  |
| 7 | liquibase:futureRollbackSQL |  |  |  |  |
| 8 | liquibase:generateChangeLog | Step-1 for existing DB | Generate ChangeLog of an existing DB | Connect to existing DB and generate ChangeLog | Liquibase:generateChangeLog    <outputFile>target/liquibase/rollback.sql</outputFile>   * We can generate it any required format - xml, yaml, json |
| 9 | liquibase:help |  |  |  |  |
| 10 | liquibase:listLocks |  |  |  |  |
| 11 | liquibase:migrate(Deprecated) |  |  |  |  |
| 12 | liquibase:migrateSQL(Deprecated) |  |  |  |  |
| 13 | liquibase:releaseLocks |  |  |  | Rollback changes |
| 14 | liquibase:rollback |  |  |  |  |
| 15 | liquibase:rollbackSQL |  |  |  |  |
| 16 | liquibase:status |  |  |  | Review changes before applying |
| 17 | liquibase:tag |  |  |  |  |
| 18 | liquibase:update |  |  |  |  |
| 19 | liquibase:updateSQL |  |  |  | Review changes before applying |
| 20 | liquibase:updateTestingRollback |  |  |  |  |

Screenshots:

1. Status

Files\apache-maven-3.3. -DLOG LEVEL-INFO -DDB 
TEXT=10ca1 liquibase:status 
[INFO] Scanning for projects. 
[INFO] 
[INFO] - 
I[INFO] Building liquibase example ø.e.5 
[INFO] - 
[INFO] 
[INFO] 
[INFO] - 
liquibase-maven-p1uein:3.5.3:status (default-cli) @ liquido - 
JINFO 9/25/20 3:21 PM: liquibase: Could not set check compatibility mode on OracleDatabase, 
ter: ORA-øø942: table or view does not exist 
[INFO] Executing on Database: 
2 change sets have not been applied to 
src/main/resources/Test/Test. sql: :create table testl: 
src/main/resources/Test/Test. sql: :A1ter table testl 1: 
src/main/resources/Test/Test.sq1: :A1ter table testl 2: 
src/main/resources/Test/Test.sq1: :A1ter table testl 3: 
src/main/resources/Test/Test.sq1: :A1ter table testl 4: :JK 
src/main/resources/Test/Test.sq1: :A1ter table testl 5: :JK 
src/main/resources/Test/Test.sq1: :create table test3: 
src/main/resources/Test/Test.sq1: :A1ter table test3 1: .JK 
src/main/resources/Test/Test2.sq1: :create table test2: :JK 
src/main/resources/Test/Test2.sq1: :A1ter table test2 1::JK 
src/main/resources/Test/Test2.sq1: :A1ter table test2 2: 
src/main/resources/Test/Test2.sq1: :A1ter table test2 3: .JK 
[INFO] - 
[INFO] 
[INFO] - 
[INFO] 
BUILD SUCCESS 
[INFO] 
[INFO] 
Total time: 8.961 s 
[INFO] 
Finished at: 
INFO] 
Final memory: 
assuming not running in any sort of compatibility mode: 
Cannot read from v$paral 

Demo:

Pre-req:

Run Drop Tracking tables

1. Run liquibase:generateChangeLog

"C:\Program Files\apache-maven-3.3.3\bin\mvn" -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=autoadj -DDB\_PASSWORD=aut0\_D3v -DDB\_SCHEMA=autoadj -DDB\_URL=jdbc:oracle:thin:@//picom-d-01.internal.das:1525/picomd liquibase:generateChangeLog

Output: Target/liquibase/ChangeLogFile.oracle.sql

1. Make some change and run "status"
2. updateSQL: target\liquibase\migration.sql

liquibase:updateSQL

liquibase:tag -Dliquibase.tag=checkpoint1

Rollback

liquibase:rollback -Dliquibase.rollbackTag=1.0

liquibase:rollback -Dliquibase.rollbackCount=1

PICOM Issues

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sno | Issue | Turbo DB | Liquibase | Remarks |
| 1 | Stored Prod | Created a branch develop\_liquibase\_test in PICOM\_DB and created a plan branch.    Turbo DB shows it as Invalid SQL    java.sql.SQLSyntaxErrorException: ORA-00900: invalid SQL statement  *From <*[*https://bamboo.anthem.com/download/ACRCI-PICDO5-JOB1/build\_logs/ACRCI-PICDO5-JOB1-1.log*](https://bamboo.anthem.com/download/ACRCI-PICDO5-JOB1/build_logs/ACRCI-PICDO5-JOB1-1.log)*>*    *Next Steps: Need to run manually and then run in TurboDb* | Created a Liquibase Pipeline <https://bamboo.anthem.com/browse/ACRCI-PICOMLDBD>    Able to create Stored proc in DB but it is having SQL errors | Need to run manually and then run either using TurboDB or Liquibase |
| 2 | Failed with ; at end |  |  |  |
| 3 | More entries in SQL | Increase the **maximum open cursor** in the database |  |  |

There is a need to limit Turbo DB - OnPrem to DDL execution

1. Complex

**Repo details:**

|  |  |
| --- | --- |
| Liquibase repo : | [EDA-Liquibase](https://bitbucket.anthem.com/users/af38889/repos/eda-liquibase/browse) |
| Developer repo : | [DA-AppTeam-Liquido](https://bitbucket.anthem.com/users/af38889/repos/eda-appteam-liquido/browse) |
| Bamboo Plan : | [Liquibase-CICD](https://bamboo.anthem.com/browse/EDO-LIQUIDO) |

**Limitation:**

1. **Dev team need to adopt the Liquibase format in SQL file**

* **Currently developers run the DDL given by the modeller**

|  |  |
| --- | --- |
| liquibase\_dbDoc | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:dbDoc |
| liquibase\_futureRollbackSQL | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:futureRollbackSQL |
| liquibase\_generateChangeLog | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:generateChangeLog |
| liquibase\_rollback | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:rollbackSQL -Dliquibase.rollbackTag=ACRCI-PICOMLDBD-JOB1-40 |
| liquibase\_rollbackCountSQL | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:rollbackCountSQL -Dliquibase.rollbackCount=1 |
| liquibase\_tag | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:tag -Dliquibase.tag=${bamboo.buildResultKey} |
| liquibase\_update | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:update |
| liquibase\_updateSQL | mvn -DDB\_DRIVER=${bamboo.DB\_DRIVER} -DLOG\_LEVEL=INFO -DDB\_CONTEXT=local -DDB\_USERNAME=${bamboo.DB\_USER} -DDB\_PASSWORD=${bamboo.user\_password} -DDB\_SCHEMA=${bamboo.DB\_SCHEMA} -DDB\_URL=${bamboo.DB\_URL} liquibase:updateSQL |
|  |  |
|  |  |