Dookug Template Modul DB repo documentation

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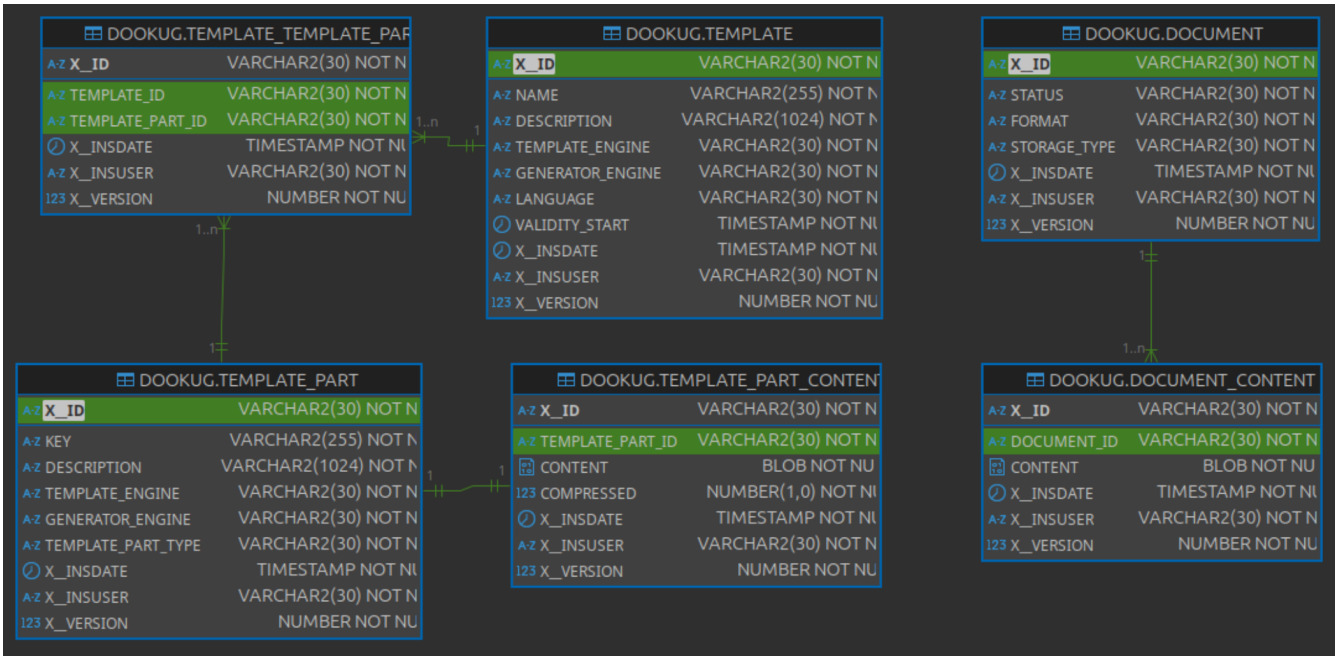
1. Brief overview

- Document generation module based on templates, which
  - can handle templates in different formats and inject parameter lists into them, then generate the finished document.
  - The module is designed to generate output documents (PDF, XLSX, HTML, TXT, ...) from various template formats with identifiers (TXT, HTML, object, JRXML, ...) by inserting the received parameter(s) into the received template.
  - The solution is based on a microservice architecture.
- Technologies:
  - Components and their versions:
    - Included local Postgres: 14.8-bullseye
    - Included local Oracle: 21.3.0-xe
    - Liquibase: 4.21
    - The latest final PGTools version: 0.10.0

2. Schemas

2.1. dookug

2.1.1. ERD



2.1.2. Tables

Table 1. document

Field	Type	Default Value	Required?	Description
x__id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	PK → unique identifier
template_id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		No	TEMPLATE identifier
status	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Document status

Field	Type	Default Value	Required?	Description
format	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Document format
filename	Oracle: VARCHAR2(100 CHAR) Postgres: VARCHAR(100)		No	Document filename
error_message	Oracle: VARCHAR2(512 CHAR) Postgres: VARCHAR(512)		No	Error message during process
storage_type	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Storage type
storage_id	Oracle: VARCHAR2(128 CHAR) Postgres: VARCHAR(128)		No	Unique invoice identifier in the calling system
parameters	Oracle: BLOB Postgres: BYTEA		No	Parameter key-value pairs json
parameter_data	Oracle: BLOB Postgres: BYTEA		No	Parameter data structure json
config	Oracle: CLOB Postgres: TEXT		No	Configuration
x__insdate	TIMESTAMP(6)	Oracle: sysdate Postgres: now()	Yes	Insertion timestamp

Field	Type	Default Value	Required?	Description
x__insuser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	Yes	Not used, default value 0
x__moddate	TIMESTAMP(6)		No	Modification timestamp, null at insertion
x__moduser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	No	Not used, default value 0
x__version	Oracle: NUMBER Postgres: INT	0	Yes	Change versioning

Table 2. document constraints and indexes

Field	Type	Value	Related Field	Referenced Field
pk_document	primary key		x__id	
pk_document	unique index		x__id	

Table 3. document_content

Field	Type	Default Value	Required?	Description
x__id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Generated primary key (PK)
document_id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	DOCUMENT unique identifier
content	Oracle: BLOB Postgres: BYTEA		Yes	Document content (gzip)

Field	Type	Default Value	Required?	Description
expiry	Oracle: TIMESTAMP(6) Postgres: TIMESTAMP(6)		No	Expiration date
x__insdate	timestamp(6)	Oracle: sysdate Postgres: now()	Yes	Insertion timestamp
x__insuser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	Yes	Not used, default value 0
x__moddate	timestamp(6)		No	Modification timestamp, null at insertion
x__moduser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	No	Not used, default value 0
x__version	Oracle: number Postgres: int	0	Yes	Change versioning

Table 4. document_content constraints and indexes

Field	Type	Value	Related Field	Referenced Field
pk_document_content	primary key		x__id	
fk_document_content_document	foreign key constraint		document_id	document.x__id
ix_document_content_document_id	index		document_id	
pk_document_content	unique index		x__id	

Table 5. template

Field	Type	Default Value	Required?	Description
x__id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Generated primary key (PK)
name	Oracle: VARCHAR2(255 CHAR) Postgres: VARCHAR(255)		Yes	Template name
description	Oracle: VARCHAR2(1024 CHAR) Postgres: VARCHAR(1024)		Yes	Description
template_engine	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Template engine. Possible values: HANDLEBARS, NONE
generator_engine	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Document generation engine. Possible values: PDF_BOX, NONE
language	Oracle: VARCHAR2(30 CHAR) Postgres: varchar(30)		No	Template language
validity_start	Oracle: TIMESTAMP(6) Postgres: TIMESTAMP(6)	Oracle: sysdate Postgres: now()	Yes	Validity start

Field	Type	Default Value	Required?	Description
validity_end	Oracle: TIMESTAMP(6) Postgres: TIMESTAMP(6)		No	Validity end
x__insdate	timestamp(6)	Oracle: sysdate Postgres: now()	Yes	Insertion timestamp
x__insuser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	Yes	Not used, default value 0
x__moddate	timestamp(6)		No	Modification timestamp, null at insertion
x__moduser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	No	Not used, default value 0
x__version	Oracle: number Postgres: int	0	Yes	Change versioning

Table 6. template constraints and indexes

Field	Type	Value	Related Field	Referenced Field
ck_template_generator_engine	check constraint	PDF_BOX, NONE, SAXON	generator_engine	
ck_template_template_engine	check constraint	HANDLEBARS, NONE	template_engine	
pk_template	primary key		x__id	
pk_template	unique index		x__id	

Table 7. template_part

Field	Type	Default Value	Required?	Description
x__id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Generated primary key (PK)
key	Oracle: VARCHAR2(255 CHAR) Postgres: VARCHAR(255)		Yes	Template key. For template engine.
description	Oracle: VARCHAR2(1024 CHAR) Postgres: VARCHAR(1024)		Yes	Description
template_engine	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Template engine. Possible values: HANDLEBARS, NONE
generator_engine	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Document generation engine. Possible values: PDF_BOX, NONE
template_part_type	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Template type. Possible values: HEADER, CONTENT, FOOTER, MAIN, OTHER
x__insdate	timestamp(6)	Oracle: sysdate Postgres: now()	Yes	Insertion timestamp

Field	Type	Default Value	Required?	Description
x__insuser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	Yes	Not used, default value 0
x__moddate	timestamp(6)		No	Modification timestamp, null at insertion
x__moduser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	No	Not used, default value 0
x__version	Oracle: number Postgres: int	0	Yes	Change versioning

Table 8. template_part constraints and indexes

Field	Type	Value	Related Field	Referenced Field
ck_template_part_generator_engine	check constraint	PDF_BOX, NONE	generator_engine	
ck_template_part_template_engine	check constraint	HANDLEBARS, NONE	template_engine	
ck_template_part_template_part_type	check constraint	HEADER, CONTENT, FOOTER, MAIN, OTHER	template_part_type	
pk_template_part	primary key		x__id	
pk_template_part	unique index		x__id	

Table 9. template_part_content

Field	Type	Default Value	Required?	Description
x__id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Generated primary key (PK)

Field	Type	Default Value	Required?	Description
template_part_id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	TEMPLATE unique identifier
content	Oracle: BLOB Postgres: BYTEA		Yes	Template content
compressed	Oracle: NUMBER Postgres: INT		Yes	Is template content compressed
x__insdate	timestamp(6)	Oracle: sysdate Postgres: now()	Yes	Insertion timestamp
x__insuser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	Yes	Not used, default value 0
x__moddate	timestamp(6)		No	Modification timestamp, null at insertion
x__moduser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	No	Not used, default value 0
x__version	Oracle: number Postgres: int	0	Yes	Change versioning

Table 10. template_part_content constraints and indexes

Field	Type	Value	Related Field	Referenced Field
pk_template_part_content	primary key		x__id	
uk_template_part_content_template_part_id	unique index		template_part_id	

Field	Type	Value	Related Field	Referenced Field
fk_template_part_content_template_part	Foreign key constraint		template_part_id	template_part.x__id
pk_template_part_content	unique index		x__id	

Table 11. template_template_part

Field	Type	Default Value	Required?	Description
x__id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	Generated primary key (PK)
template_id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	TEMPLATE unique identifier
template_part_id	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)		Yes	TEMPLATE_PART unique identifier
x__insdate	timestamp(6)	Oracle: sysdate Postgres: now()	Yes	Insertion timestamp
x__insuser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	Yes	Not used, default value 0
x__moddate	timestamp(6)		No	Modification timestamp, null at insertion

Field	Type	Default Value	Required?	Description
x__moduser	Oracle: VARCHAR2(30 CHAR) Postgres: VARCHAR(30)	'0'	No	Not used, default value 0
x__version	Oracle: number Postgres: int	0	Yes	Change versioning

Table 12. template_template_part constraints and indexes

Field	Type	Value	Related Field	Referenced Field
pk_template_template_part	primary key		x__id	
fk_template_template_part_template	foreign key constraint		template_id	template.x__id
fk_template_template_part_template_part	foreign key constraint		template_part_id	template_part.x__id
ix_template_template_part_template_id	index		template_id	
ix_template_template_part_template_part_id	index		template_part_id	
pk_template_template_part	unique index		x__id	

2.1.3. Permissions

Table 13. Postgres permissions

Users	Permissions
dookug	SELECT, INSERT, UPDATE, DELETE
dookug_write	INSERT, UPDATE, DELETE
dookug_read	SELECT
dookug_exec	dookug_read, dookug_write
dookug_service	dookug_exec

Table 14. Oracle permissions

Users	Permissions
DOOKUG_WRITE	INSERT, UPDATE, DELETE
DOOKUG_READ	SELECT
DOOKUG_EXEC	DOOKUG_READ, DOOKUG_WRITE

3. Configurations

- ENV variables:
  - **DOCKER_REPOSITORY**: Root location of images (*default value: DOCKER_REPOSITORY_*).
  - **DOCKER_LIQUIBASE_DOOKUG**: Indicates the image location (*schema1 default value: ${DOCKER_REPOSITORY}/liquibase/modules/dookug_db*).
  - **DBDWH_IMAGE_VERSION**: used version of liquibase, postgres, partman images (*default value: 0.10.0*)
  - **VERSION**: Project version, this is set automatically.
- Compose variables:
  - **LIQUIBASE_BASE_IMAGE**: central, corporate base liquibase image with version, used by dockerfile (*default value: DOCKER_REPOSITORY/db-base-liquibase:${DBDWH_IMAGE_VERSION}*).
  - **liquibase-release/LIQUIBASE_INSTALL_DIR**: local liquibase directory, used by dockerfile (*schema1 default value: ./liquibase/dookug*).
  - **LIQUIBASE_INSTALL_COMMON_DIR**: local liquibase/common directory, used by dockerfile (*default value: ./liquibase/common*).
  - **PG_TOOLS_IMAGE**: Postgres partition manager installer path, used by dockerfile (*default value: icellmobilsoft/db-base-pg_tools:${DBDWH_IMAGE_VERSION}'*).
- Before Liquibase variables:
  - **S2_SCHEMA_NAME**: Step 2 schema name, with default value, can be overridden externally (*default value: dookug*).
  - **INSTALL_PGTOOLS**: PG partition manager installer switch in Step 2 (*automatically copied in Dockerfile and installed in STEP2*), with default value, can be overridden externally (*default value: true*).
  - **INSTALL_USERNAME_ADMIN**: The Admin user for the main installs, with default value, can be overridden externally (*default value: postgres - system based on DB type*).
  - **INSTALL_USERNAME_PROJECT**: Only for Postgres! The Project user for the project schema installs, with default value, can be overridden externally (*default value: S2_SCHEMA_NAME*).
  - **INSTALL_PASSWORD_ADMIN**: The password of Admin user for the main installs, with default value, can be overridden externally (*default value: postgres*).
  - **INSTALL_PASSWORD_PROJECT**: The password of Project user for the project schema installs, with default value, can be overridden externally (*default value: postgres - developer based on DB type*).

- **INSTALL_URL_ADMIN**: The URL of Admin DB for the main installs, with default value, can be overridden externally (*default value: PostgreSQL: jdbc:postgresql://module-dookug-postgredb:5432/postgres - Oracle: jdbc:oracle:thin:@module-dookug-oracle:1521/xepdb1 based on DB type*).
- **INSTALL_URL_PROJECT**: The URL of Project DB for the project schema installs, with default value, can be overridden externally (*default value: PostgreSQL: jdbc:postgresql://module-dookug-postgredb:5432/dookug_db - Oracle: jdbc:oracle:thin:@module-dookug-oracle:1521/xepdb1 based on DB type*).
- **CREATE_DATABASE**: PostgreSQL DB. If the current DB needs to be embedded in another DB (*under a specific schema*), this variable prevents an empty DB from being created. Default value is TRUE in the before-liquibase file, can be overridden externally.
- **INSTALL_STEPS**: Before install, you can set the step(s) of the install, which you need to run. You can list multiple steps as well. (*default value: 1,2,3,4*), can be overridden externally.
- **INSTALL_SCHEMA**: Only for Oracle! The project schema to be installed. (*default value: dookug*), can be overridden externally.

- Properties variables:
  - Properties file: File belonging to the given DB that provides data for local db access and maps the liquibase changelog file to the given step compose file.
  - **URL**: URL of the DB to be installed, by default local DB access is specified, can be overridden externally.
    - Oracle DB: (default value: *jdbc:oracle:thin:@module-dookug-oracle:1521/xepdb1*).
    - Postgres DB/step1: (default value: *jdbc:postgresql://module-dookug-postgredb:5432/postgres*).
    - Postgres DB/step2: (default value: _jdbc:postgresql://module-dookug-postgredb:5432/dookug_db).
    - Postgres DB/step3: (default value: *jdbc:postgresql://module-dookug-postgredb:5432/postgres*).
    - Postgres DB/step4: (default value: _jdbc:postgresql://module-dookug-postgredb:5432/dookug_db).
  - **USERNAME**: Username for the DB to be installed, by default local DB access is specified, can be overridden externally.
    - Oracle DB/step1: (default value: *system*).
    - Oracle DB/step2: (schema2 default value: dookug).
    - Oracle DB/step4: (schema4 default value: dookug).
    - Postgres DB: (default value: *postgres*).
  - **PASSWORD**: Password for the DB to be installed, by default local DB access is specified, can be overridden externally.
    - Oracle DB: (default value: *developer*).
    - Postgres DB: (default value: *postgres*).
  - **CHANGELOGFILE**: Name of the liquibase changelog file, by default local changelog file

access for the given DB step is specified.

- step1: DB installation, users, permissions, etc. (default value: *liquibase-install-step-01.xml*).
- step2: Liquibase installation, DB objects (default value: *liquibase-install-step-02.xml*).
- step3: ONLY PostgreSQL - CRON scheduler entry (default value: *liquibase-install-step-03.xml*).
- step4: Optional! Default (test/dev) template loading (default value: *liquibase-install-step-04.xml*).

4. Installation, Release, Deployment

▼ *Local install (click here)*

```
#=====================
#***Full install***
#INSTALL_STEPS: This is NOT required, the default value: "1,2,3,4".
#               The full is 1,2,3,4, or as many as you have, or you can give that
step(s) you want!
#INSTALL_PGTOOLS: ONLY in postgresql install!
#                 This is NOT required, the default value: true.
#                 In case of locale Postgresql development, this installer
automatically installs the PG_TOOLS as well in step2!
#                 If you turn this parameter on, the 2nd installation step is
mandatory in the INSTALL_STEPS env. variable!
#                 You can turn it off with the value=false
#AUTO_INSTALL: This is REQUIRED!
#              at the moment you can use postgresql or oracle
#INSTALL_SCHEMA: ONLY in oracle install!
#                This is NOT required, the default value: "dookug".
#=====================
#postgresql default local install:
#this runs all the 4 steps by default
#------------------------
docker run -it --rm \
  --network=dookug-local-network \
  -e AUTO_INSTALL=postgresql \
  -e INSTALL_USERNAME_PROJECT=dookug \
  icellmobilsoft/dookug_db:2.1.0-SNAPSHOT
#------------------------
#If you need only a specific step(s):
#------------------------
docker run -it --rm \
  --network=dookug-local-network \
  -e AUTO_INSTALL=postgresql \
  -e INSTALL_USERNAME_PROJECT=dookug_user \
  -e INSTALL_STEPS=2,4 \
  icellmobilsoft/dookug_db:2.0.0-SNAPSHOT
#------------------------
```

```
#oracle local install:
#this runs all the 4 steps by default
#------------------------
docker run -it --rm \
  --network=dookug-local-network \
  -e AUTO_INSTALL=oracle \
  -e INSTALL_PASSWORD_PROJECT=dookug_123 \
  icellmobilsoft/dookug_db:2.1.0-SNAPSHOT
#------------------------
#If you need only a specific step(s):
#------------------------
docker run -it --rm \
  --network=dookug-local-network \
  -e AUTO_INSTALL=oracle \
  -e INSTALL_SCHEMA=schema_name \
  -e INSTALL_STEPS=2,4 \
  icellmobilsoft/dookug_db:2.0.0-SNAPSHOT
```

- How "embed" Dookug DB into other "host" DB (*install Dookug-db dookug schema into other DB*):

▼ *Embed DookuG in to other DB (click here)*

```
#---------------------
#Postgres and Linux:
#INSTALL_STEPS: This is NOT required, the default value: "1,2,3,4".
#               The full is 1,2,3,4, or as many as you have, or you can give that
step(s) you want!
#INSTALL_PGTOOLS: ONLY in postgresql install!
#                 This is NOT required, the default value: true.
#                 In case of locale Postgresql development, this installer
automatically installs the PG_TOOLS as well in step2!
#                 If you turn this parameter on, the 2nd installation step is
mandatory in the INSTALL_STEPS env. variable!
#                 You can turn it off with the value=false
#AUTO_INSTALL: This is REQUIRED!
#              at the moment you can use postgresql or oracle
#INSTALL_USERNAME_PROJECT: ONLY in postgresql install!
#                          In case of oracle you have to use the INSTALL_SCHEMA, b/c
in oracle, the schema is the user as well.
#INSTALL_SCHEMA: ONLY in oracle install!
#                This is NOT required, the default value: "dookug".
#CREATE_DATABASE: When embedding this DookuG installer into another (host) DB, set
this to false to avoid creating an empty database.
#in case of server install, you must use the DEFAULT and PROJECT parameters.
#   INSTALL_URL_ADMIN
#   INSTALL_URL_PROJECT
#   INSTALL_USERNAME_ADMIN
#   INSTALL_USERNAME_PROJECT
#   INSTALL_PASSWORD_ADMIN
#   INSTALL_PASSWORD_PROJECT
#---------------------
```

```
#postgresql:
#-----------
docker run -it --rm \
  --network=host-local-network \
  -e AUTO_INSTALL=postgresql \
  -e INSTALL_URL_ADMIN=jdbc:postgresql://host_db-postgredb:port_num/postgres \
  -e INSTALL_URL_PROJECT=jdbc:postgresql://host_db-postgredb:port_num/host_db \
  -e INSTALL_USERNAME_ADMIN=postgres \
  -e INSTALL_PASSWORD_ADMIN=passw_from_secret \
  -e INSTALL_USERNAME_PROJECT=project_user_name \
  -e INSTALL_PASSWORD_PROJECT=passw_from_secret \
  -e CREATE_DATABASE=false \
  -e INSTALL_STEPS=1,2,3,4 \
  -e INSTALL_SCHEMA=dookug_schema_name \
  -e INSTALL_PGTOOLS=false \
  icellmobilsoft/dookug_db:2.0.0-SNAPSHOT
#-----------
#oracle:
#-----------
docker run -it --rm \
  --network=host-local-network \
  -e AUTO_INSTALL=oracle \
  -e INSTALL_URL_ADMIN=jdbc:oracle:thin:@host_db-oracle:1521/xepdb1 \
  -e INSTALL_URL_PROJECT=jdbc:oracle:thin:@host_db-oracle:1521/xepdb1 \
  -e INSTALL_USERNAME_ADMIN=system \
  -e INSTALL_PASSWORD_ADMIN=passw_from_secret \
  -e INSTALL_PASSWORD_PROJECT=passw_from_secret \
  -e CREATE_DATABASE=false \
  -e INSTALL_STEPS=1,2,3,4 \
  -e INSTALL_SCHEMA=dookug_schema_name \
  icellmobilsoft/dookug_db:2.0.0-SNAPSHOT
```

#on windows: the "\" needs to be changed to "`"!

- optional environment variable, only needed during password change:

```
  -e DB_SERVICE_USER_PASSWORD=<service user passw>
```

5. Release notes

- 0.1.0 Changes:
  - Dookug db install
  - Templates install
  - Documentation
- 1.0.0 Changes:
  - DATE type has been replaced with Timestamp(6) in Common.dtd file.

    - DKG-228 - Insert a new flexible template into the boards.
    - DKG-217 - Replacing new date types in the boards.
    - DKG-233 - Hash Fix
    - DKG-231 - Convert documentation
    - DKG-238- Load default templates in Step 4.
    - DKG-245 - Improvement of Dookug Installation Error
- 1.0.3 Changes:
    - DKG-246 - Template Content Fix
    - DKG-261 - Repair of Readme adoc.
    - DKG-261 - Repair of Install.adoc.
- 1.1.0 Changes:
    - DKG-265 - open source changes
    - DKG-297 - Drop validity_start, validity_end cols from template_part_content, drop template_part_content.template_part_id index, change template_part_content.template_part_id index to unique.
- 1.2.0 Changes:
    - Technical release: Backend version sync, no changes compared to 1.1.0
- 2.0.0 Changes:
    - DKG-319 - Refactoring the installation process.
- 2.1.0 Changes:
    - DKG-351 - Giving connect grant to oracle service user. Project password fix for project and service user.