

This document highlights a patch available on My Oracle Support to address Data Privacy.

Note: This application's base code is not changing for this numbered version unless the patch referenced below is applied.

The fix is located at the following patch numbers on My Oracle Support:

- 27121825
- 27370748

Data Privacy Overview

As part of Data Privacy enhancements, Oracle has created a Platform Data Privacy command line tool to provide retailers with services for requesting access to personal information for review and forget/update of personal information if requested.

Some of the examples of personal information can be:

- Full Name
- Home address
- Email address
- Date of birth
- Credit card numbers

The following features are handled in the Platform Data Privacy command line tool:

- End User Access/Right to Access (RTA): Enables retailers to accept and respond to end-user requests for data access, correction, and deletion for individual end-user data records they store in the Oracle service.
- Right to be Forgotten (RTF): Based on the end-user's right to request to forget and/or update their personal information, this feature enables the retailer to delete and/or update (mask) the end-user's personal data during the services period. Some of the data critical for the business or is part of a legal requirement might not be deleted.
- Validate Forgotten: Based on the end-user's right to request to forget and/or update their personal information, this feature enables the retailer to validate end-user requests.
- Data Portability: End-users have the right to receive the personal data concerning their own information stored in retail applications. The feature will be handled as part of the Platform Data Privacy command line tool's Right to Access functionality.

Note: With regard to Purging functionality, output files created by the Platform Data Privacy command line tool may be purged.

Note: With regard to Logging functionality, server logs created by the Platform Data Privacy command line tool may be purged.

Installation

The services that are part of the Platform Data Privacy command line tool are executable through a command line executable JAR file:

RetailAppsDataPrivTool.jar.

Setting up the Java Development Kit (JDK)

Java 1.8 is a prerequisite to install and test the Platform Data Privacy command line tool. This section contains instructions on how to set up the Java Development Kit (JDK).

Download and Install Java 8

Download the latest 64-bit version of the Java SE Development Kit 8.

Install the kit in a location on your machine. Ensure that the installation folder name does not contain any whitespaces (For example: Program Files).

Define Environment Variables for JDK

To effectively use the JDK on your workstation you will need to define environment variables on your system.

Define the JAVA_HOME Variable

Define a new environment system variable named JAVA_HOME with a value referring to the path where your JDK is installed. For example:

```
JAVA_HOME=D:\Java\jdk1.8_66
```

Modify the PATH Variable

Modify your system's existing PATH variable to include the executable program location on your JDK installation. These executables are located under:

```
%JAVA_HOME%\bin.  
PATH=%JAVA_HOME%\bin;%PATH%
```

Testing Your JDK Installation

1. Start a new command line window by selecting Start>Run>Open> and then type cmd.exe.
2. Go to the root directory by typing: cd c:\ <enter>
3. Run the Java compiler and query its version by typing: javac -version
The command should return with the Java version information. Make sure it matches the JDK version you just installed.

```
D:\gdpr>java -version
java version "1.8.0_66"
Java(TM) SE Runtime Environment (build 1.8.0_66-b18)
Java HotSpot(TM) 64-Bit Server VM (build 25.66-b18, mixed mode)

D:\gdpr>javac -version
javac 1.8.0_66
```

RWMS Application

Compile RWMS Objects

As part of the data privacy enhancement, a new package and a table type has been created that has to be compiled in the RWMS database.

1. For the RWMS 16.0.x version, download the RWMS patch 27121825 and apply the hotfix in the RWMS database using the Orpatch utility. The hotfix contains create_datapriv.sql, dataprivsvc.pks and dataprivsvc.pkb.
2. The hotfix will create the new type RAF_DATAPRIV_CTX_PARAM_REC, RAF_DATAPRIV_CTX_PARAM_TBL and a new package DATAPRIV_SVC.

For RWMS versions 12.0, 12.1, 13.0, 13.1, 13.2, 14.0, 14.1, 15.0 customers can retrofit by referring to the solution included in RWMS patch 27121825. The changes done for the 16.0 version will be applicable for the older versions as well.

For versions 14.0 and before, email_address1 and email_address2 columns in the dms_user are not present. Also the following columns in STOCK_ORDER table, BILL_FIRST_NAME, BILL_PHONETIC_FIRST, BILL_LAST_NAME, BILL_PHONETIC_LAST, BILL_PREFERRED_NAME, BILL_PHONE, SHIP_FIRST_NAME, SHIP_LAST_NAME, SHIP_PHONETIC_FIRST, SHIP_PHONETIC_LAST, SHIP_PREFERRED_NAME, SHIP_PHONE do not exist in versions 14.0 and below.

For versions 13.1 and below, the table CONT_LABELS_TO_PRINT is not present. The mailing details table namely MAILING_DETAILS is not present in 13.2 versions and below. Due to these, changes are required in dataprivsvc.pkb (DATAPRIV_SVC package) for versions 14.0 and earlier.

Customer can refer to the diff report present in the RWMS patch 27121825 wms_dataprivsvc_13.2.html for versions 13.2 and below and wms_dataprivsvc_14.0.html for 14.0 to retrofit the changes to older versions.

Platform Data Privacy Command Line Tool

Download the RWMS patch 27370748. The hotfix contains:

- RetailAppsDataPrivTool.jar
 - DATAPRIV-Global.xml
 - ContextOverride.properties
 - DATAPRIV-ValidateForget.xml
 - DATAPRIV-Get.xml
 - DATAPRIV-Forget.xml
1. Create a folder called DataPrivacy and copy the RetailAppsDataPrivTool.jar into this folder.

2. Create a folder called WmsDataPrivConfig under the DataPrivacy folder and copy DATAPRIV-Global.xml, ContextOverride.properties, DATAPRIV-ValidateForget.xml, DATAPRIV-Get.xml and DATAPRIV-Forget.xml into this folder.

Configure the Configuration Files

There are a few changes necessary to some of the configuration files.

- DATAPRIV-Global.xml
 - No changes necessary to this file.
- ContextOverride.properties.xml
 - Contains details of the connection string to be used in Oracle Wallet.
 - Customer needs to update the datasource string with the environment database details.
 - The JDBC URL must comply with the following format to reference the Oracle Wallet credentials at runtime:
 - A forward slash “/” must be specified BEFORE the “@” character. This instructs the Oracle database driver to be aware of Oracle Wallet aliases.
 - The identifiers following the “@” character must be registered as an alias in the Oracle Wallet. The wallet creation and configuration steps are explained in the next section.

Datasource string format - datasource-url=jdbc:oracle:thin:@hostname:port/SID

For example:

```
datasource-url=jdbc:oracle:thin:@myhost:1521/mydb
```
- DATAPRIV-Get.xml
 - Contains the query or function to perform the right to access.
 - No changes necessary for this file.
- DATAPRIV-Forget.xml
 - Contains the query or function to perform the right to forget.
 - No changes necessary for this file.
- DATAPRIV-ValidateForget.xml
 - Contains validations to perform prior to right to forget.
 - No changes necessary for this file.

Creating and Configuring Oracle Wallet

The Platform Data Privacy command line tool uses Oracle Wallet to securely store the database credentials. The wallet can be created using the RetailAppsDataPrivTool.jar present in RWMS patch 27370748.

Here are the steps to be performed to create and configure the Oracle Wallet for the Platform Data Privacy command line tool.

1. Create an empty wallet file in the DataPrivacy directory by running the below command in a command prompt (cmd) in DataPrivacy folder.

```
java -classpath RetailAppsDataPrivTool.jar  
oracle.security.pki.OracleSecretStoreTextUI  
-wrl <wallet directory>  
-create
```

For example:

```
java -classpath ./RetailAppsDataPrivTool.jar
oracle.security.pki.OracleSecretStoreTextUI -wrl ./tmp_wallet -create
```

The user will be prompted to enter a password. This will be the password to manage the contents of the wallet files.

Note: Remember this password as it will be needed in succeeding commands against the wallet files.

2. Add the database credentials into the wallet by running the below command in the command prompt (cmd) in the DataPrivacy folder. This will prompt you to enter the password you created in step 1.

```
java -classpath RetailAppsDataPrivTool.jar
oracle.security.pki.OracleSecretStoreTextUI
-wrl <wallet directory>
-createCredential <db connect string> <db user> <db password>
```

<db connect string> - is the database connection string included in a JDBC connection URL in the ContextOverride.properties.xml. It is the part of the JDBC URL after the "@" character.

It is specified using the format: <hostname>:<port>/<SID>

For example:

myhost:1521/mydb

- <db user> - DB user to connect to the RWMS database.
- <db password> - password to connect to the RWMS database.

For Example:

```
java -classpath ./RetailAppsDataPrivTool.jar
oracle.security.pki.OracleSecretStoreTextUI -wrl ./tmp_wallet -
createCredential myhost:1521/mydb wmsuser password
```

Verify the database credentials in the wallet by running the following command in the command prompt (cmd)

```
java -classpath RetailAppsDataPrivTool.jar
oracle.security.pki.OracleSecretStoreTextUI
-wrl <wallet directory>
-listCredential
```

For example:

```
java -classpath ./RetailAppsDataPrivTool.jar
oracle.security.pki.OracleSecretStoreTextUI -wrl ./tmp_wallet -listCredential
```

Make sure the credential information shown by the command is as expected.

Using the Platform Data Privacy Command Line Tool

The Platform Data Privacy command line tool is an executable JAR file that uses the "java -jar" option:

```
java -Ddatapriv.action=<action>
-Dinvoked.by=<user ID>
-DContextOverride.properties=<Context Override Properties file>
-Duse.jdbc.oracle.wallet=true
-Doracle.net.wallet_location=<Oracle wallet directory>
-Dconfig.xml.dir=<configuration files directory>
-Dcustomer.id=<query parameters for the tool>
-Did.type=<getPersonalInfo or updatePersonalInfo>
-Doutput.file.dir=<output file directory>
<other parameters>
-jar RetailAppsDataPrivTool.jar
```

The parameters are given to the command line via system property JVM arguments (-D options).

Understanding the Command Line Parameters

System Property/Parameter	Required	Description
datapriv.action	Always	The data privacy actions to be performed: Valid values: <ul style="list-style-type: none"> ▪ access Retrieve Personal Data in the system. Required properties to set: customer.id, id.type ▪ forget RemoveP Data in the system. Required properties to set: customer.id, id.type
invoked.by	Always	The ID of the user calling the Platform Data Privacy command line tool (for audit purposes)
ContextOverride.properties	Always	The path to a Java properties file that will contain the connection details of the database the Platform Data Privacy command line tool will connect to. Refer to 'Configure the configuration files' for more details.
config.xml.dir	Always	The directory that contains the DATAPRIV configuration XML files
use.jdbc.oracle.wallet	Always	Set to true to use Oracle Wallet files as a source for database credentials. Refer to 'Creating and configuring Oracle Wallet' for more details.
oracle.net.wallet_location	Always	The path to the Oracle Wallet directory. Refer to 'Creating and configuring Oracle Wallet' for more details.
customer.id	Always	The input parameters to the query/update the personal data.
id.type	Always	The query group type for which the data privacy action will be performed. Id.type should be getPersonalInfo for datapriv.action=access Id.type should be updatePersonalInfo for action=forget
output.file.dir	No	The output files directory. Default is the user's home directory.
datapriv.summary.file.name	No	The output summary file of the action. Defaulted to "ActionSummary-{%datapriv.action%}.xml"
access.output.file.name.no.ext	No	The output file name for access requests. Defaulted to "AccessResults". The file extension depends on the access.output.format

System Property/Parameter	Required	Description
access.output.format	No	The output file format for access requests Valid values: html (default) txt
datapriv.audit.log.dir	No	The directory where the audit log file will be located. The default is the user's home directory.
datapriv.audit.log.name	No	The file name of the audit log file. The default is "datapriv_audit.log".

Understanding the customer.id

The customer.id is the place holder to pass the input parameters to the query/update for the personal data.

Customer.id format for datapriv.action=access (Right to Access)

```
Dcustomer.id="{%entityName%}::{%entityType%}::{%entityId%}::{%fullName%}::{%phone%}::{%email%}" />
```

- The customer-id-format is separated by ::
- All the input fields in the customer-id are not mandatory. The user can just pass entityName and leave the rest of the fields as blank.
- The user has to pass the input field separator even if only one input is passed.
For example: if the user wants to pass only entityName, then the value would be "carrier::::::::::"
- Enclose the customer-id string in quotes in case the input string has spaces. For example: "CARRIER::::::::::"
- The search results are restricted to 5 records at a time.
 - EntityName: Type of personal data requested from the Platform Data Privacy command line tool. For example: if the user wants to get the personal information about a carrier, then the EntityName will be passed as CARRIER.
 - Valid values are – CARRIER, MAILINGDETAILS, USER, STOCKORDER,SHIPDEST, LABELINFO
 - EntityType: For EntityName CARRIER, USER, or STOCKORDER, the entity type is the facility_id for which the user requests to access the information for.
 - EntityId: The entity ID is a unique id to identify the individual record such as carrier or user.
 - fullName: The user can search by passing the name along with EntityName.
 - Phone: User can search by passing the phone number along with EntityName.
 - Email: User can search by passing the email along with EntityName
 - Sample datapriv.action=forget query and result.

Query

```
java -
DContextOverride.properties=D:\DataPrivacy\WmsDataPrivConfig\ContextOverride.prope
rties
-Duse.jdbc.oracle.wallet=true
```

```

-Doracle.net.wallet_location=./tmp_wallet
-Dconfig.xml.dir=D:\DataPrivacy\WmsDataPrivConfig
-Ddatapriv.action=access
-Dcustomer.id="MAILINGDETAILS:::::::::::david.stew@oracle.com"
-Did.type=getPersonalInfo
-Dinvoked.by=user
-Doutput.file.dir=D:\DataPrivacy\Results -jar RetailAppsDataPrivTool.jar

```

Result

Get Personal Information

ENTITY_NAME	ENTITY_TYPE	ENTITY_ID	FULL_NAME	PHONE	EMAIL
MAILING DETAILS		PR			David.stew@oracle.com

Customer.id format for datapriv.action= forget (Right to Forget)

Dcustomer.id

```

="{%entityName%}::{%facilityId%}::{%entityType%}::{%entityId%}::{%fullName%}::{%phone%}::{%fax%}::{%email%}::{%shipaddr1%}::{%shipaddr2%}::{%shipaddr3%}::{%shipaddr4%}::{%shipaddr5%}::{%county%}::{%city%}::{%state%}::{%countryId%}::{%postalCode%}

```

- The customer-id-format is separated by ::
- The entityName and entityId and facilityId are mandatory. All the other input fields in the customer-id are optional.
- When a user performs forget action, then the corresponding record in RWMS will get updated with masked characters. The user will have the option to pass the masking character.
- If the user does not pass the masking character, then the mandatory fields will get updated with XXXX characters and non-mandatory fields will get updated to NULL.
- The user has to pass the input field separator even if only one input is passed. For example: if the user wants to pass only entityName, then the value would be "carrier::::::::::"
- Enclose the customer-id string in quotes in case the input string has spaces. For example: "CARRIER::::::::::"
- Once the personal data is updated with NULL or masked using the Platform Data Privacy command line tool, the data cannot be reverted back.
 - **EntityName:** Type of personal data requested by user to update using the Platform Data Privacy command line tool. For example: if the user is a carrier and requests to update their personal information, then the EntityName will be passed as CARRIER.
 - Valid values are – CARRIER, MAILINGDETAILS, USER, STOCKORDER,SHIPDEST, LABELINFO
 - **EntityType:** For EntityName CARRIER, MAILINGDETAILS, or USER the EntityType would be the facility ID that would be fetched on the output html. The data is not being fetched based on the EntityType, hence the user can pass this as NULL.
 - **EntityId:** The entity ID is a unique id to identify the individual record such as carrier or user.
 - The other input fields in the customer-id (Fullname, phone, fax, email, shipaddr1,shipaddr2, shipaddr3,shipaddr4,shipaddr5, county, city, state, countryId, postalCode) can be used by user to pass the masking character. If left

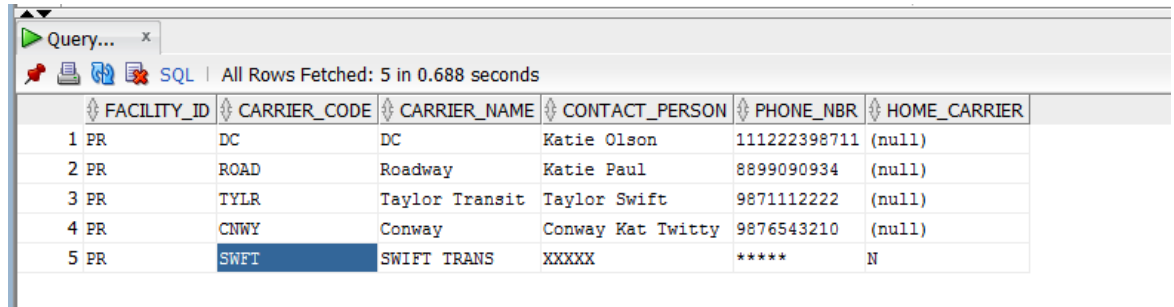
blank, they will either be masked with XXXX or updated to NULL based on if the columns are mandatory or optional.

For example: `datapriv.action=forget` query and result.

Query

```
java -
DContextOverride.properties=D:\DataPrivacy\WmsDataPrivConfig\ContextOverride.prope
rties
-Duse.jdbc.oracle.wallet=true
-Doracle.net.wallet_location=./tmp_wallet
-Dconfig.xml.dir=D:\DataPrivacy\WmsDataPrivConfig
-Ddatapriv.action=forget
-Dcustomer.id="CARRIER:PR:::::SWFT::::*****:"
-Did.type=updatePersonalInfo
-Dinvoked.by=user
-Doutput.file.dir=D:\DataPrivacy\Results -jar RetailAppsDataPrivTool.jar
```

Result



	FACILITY_ID	CARRIER_CODE	CARRIER_NAME	CONTACT_PERSON	PHONE_NBR	HOME_CARRIER
1	PR	DC	DC	Katie Olson	111222398711	(null)
2	PR	ROAD	Roadway	Katie Paul	8899090934	(null)
3	PR	TYLR	Taylor Transit	Taylor Swift	9871112222	(null)
4	PR	CNWX	Conway	Conway Kat Twitty	9876543210	(null)
5	PR	SWFT	SWIFT TRANS	XXXXX	*****	N

Understanding the command output files

The command line tool produces the output files after execution.

All files are generated by default in the user's home directory. Parameters are available to configure the directory.

Action Summary XML

Each successful call to the tool produces an action summary XML file written in the directory specified in the `output.file.dir` parameter.

Access Result File

For customer information access results (`datapriv.action=access`), a human readable report file is generated in the format indicated in the `access.output.format` parameter.

Out-of-the box format options include HTML or Text formats

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