

# Oracle® Retail MICROS Workforce Management

Release Notes

Release 1.60.9.0

E93376-04

May 2018

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

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**Note:** The rebranding for the latest version of this documentation set is in development as part of post MICROS acquisition activities. References to former MICROS product names may exist throughout the existing 1.60.x documentation set.

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## Release Overview

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

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This document highlights the instructions for installation and usability of the Platform Data Privacy command line tool.

The fix is located at the following Patch number on My Oracle Support:

- 27946203

## Certified Platforms

The Oracle Retail MICROS Workforce Management version 1.60.9.0 release is supported on the following platforms:

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Type	Software and Version
Operating System	Windows 7 Professional *64 bit
	Windows 8
	Windows 8.1 Pro *64 bit
Database	Oracle 11g
	Oracle 12c
	Microsoft SQL Server 2008 SP3
	Microsoft SQL Server R2 SP1
	Microsoft SQL Server 2012
	Microsoft SQL Server 2014 *64 bit
Web Application Server	Tomcat9.0
Browsers	Internet Explorer 9 (or later when running in compatibility mode)

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## Data Privacy Overview

This enhancement enables customers 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 Retail MICROS Workforce Management application.

The retailer is responsible for fulfilling this requirement. However, to do so, the retailer requires the capability to request this data from our application as needed.

As a Data Privacy enhancement, 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 the personal information if requested.

Some of the examples of the personal information can be:

- First Name
- Last Name
- Address
- Email address
- Bank details
- Contact numbers and so on.

The following features are handled in the Platform Data Privacy 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 tool's Right to Access functionality.

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

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

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## Consent

Notice and consent for storing of personal data is taken as the employee signing the employment contract, and providing the personal information to the retailer / system owner for us on the workforce management system.

## Backup/Disaster Recovery

It is recommended that a regular backup is made of the Workforce management database. It is the responsibility of the data controller (retailer) to:

- Ensure a secure backup is made of the workforce management database
- Ensure data recovery from the secure backup can be made in a timely manner.
- All backups must be encrypted

## Data Retention and Purging

There is no scheduled automatic process within Workforce management to detect inactive employees and remove personal data. It is recommended that personal data be removed from the database at the earliest opportunity. The privacy tool may be used as employees leave the company, else a routine of maintaining employees and deleting those who no longer are employed may be implemented on a regular basis.

It is the retailer / system owner's responsibility to identify employees which are inactive and remove data from the system.

## Database Encryption

It is recommended that Transparent Data Encryption is used on the Workforce management database, to ensure that the database is encrypted at file level, ensuring protection of data at rest.

This may be implemented during installation of the database or may be configured at a later time.

The following tables contain personal information:

Tblemployee  
Tblemployeecontrol  
Tblemployeebank  
Tblemployeeaddress

## Installation

The services that are part of the Platform Data Privacy tool are executable via an http request, which may be implemented in a 3<sup>rd</sup> party application. Please see the following steps for more information:

- [Setting up the Java Development Kit \(JDK\)](#)
- [Download and Install Java 8](#)
- [Testing your JDK Installation](#)
- [Install Tomcat](#)
- [Installing the Privacy Tool](#)
- [Tomcat Changes](#)
- [Generating Privacy Tool Wallet](#)
- [Generating Privacy Tool Certificates](#)
- [Privacy Tool Testing](#)
- [Sample Request Information](#)
- [Updating the Privacy Tool](#)

## Setting up the Java Development Kit (JDK)

Java 1.8 is a prerequisite to install and test the command line tool. This should already be installed as part of the PPM installation. However, if the privacy tool is installed on a separate server, this document contains instructions on how to set up the correct version of the Java Development Kit (JDK).

## Download and Install Java 8

### Windows

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

Install in a location on your local machine and 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.

#### 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 here:

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

## Testing your JDK Installation

### Windows

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 returns with the Java version information. Make sure it matches the JDK version you just installed.

#### Example:

```
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
```

### UNIX

1. Start a new UNIX session (for example: A Putty Session).
2. Go-To the HOME directory:  
`export JAVA_HOME=<Absolute path where JAVA is installed>`  
`export PATH=$JAVA_HOME/bin:$PATH`  
The command returns with the Java version information. Make sure it matches the JDK version you just installed.

#### Example:

```
/vol.rtk/java/oracle_linux/jdk1.8.0_112.64bit>java -version
java version "1.8.0_112"
Java(TM) SE Runtime Environment (build 1.8.0_112-b15)
Java HotSpot(TM) 64-Bit Server VM (build 25.112-b15, mixed mode)
/vol.rtk/java/oracle_linux/jdk1.8.0_112.64bit>
```

## Install Tomcat

On the Application server, install Tomcat 9 from:

<https://tomcat.apache.org/download-90.cgi>

Install Tomcat 9 to a local folder, for example: `C:\apache-tomcat\apache-tomcat-9.0.4` which is referred to as [tomcat-home].

modify

[tomcat-home]\conf\server.xml by replacing:

Connector port="8080" with Connector port="8082"

## Installing the Privacy Tool

Place the `datapriv.war` file into the `[tomcat-home]\webapps` folder, and run tomcat in order to initially expand the war file.

The `DP-Global.xml` file within the expanded folder needs to be altered to link to the correct database name in the installation. Edit this file and replace the connections for Oracle or SQL server as appropriate.

The xml files containing the queries are named `DP-xxxx.xml`.

`DP-Get.xml` and `DP-Forget.xml` require the query to take the form:

```
<query>
  <sql>
    <![CDATA[]]>
  </sql>
</query>
```

Two "types" have been included in the `DP-Get.xml` and `DP-Forget.xml`

- `employee_oracle`
- `employee_sqlserver`

One each for Oracle databases and for MS SQL Server databases.

1. Run Tomcat and ensure that the `datapriv.war` file expands out into the `datapriv` folder.
2. Once done, ensure that in the `datapriv\web_inf\classes` folder the `runtime.properties` file is present (see the following section in the document for contents).
3. Restart tomcat to pick up the `runtime.properties` file.

## Tomcat Changes

A Tomcat change for use with the privacy tool when running SQL Server is required as follows:

When using a SQL server database, copy file `mssql-jdbc-6.2.2.jre8.jar` to `[tomcat-home]\lib`.

## Generating Privacy Tool Wallet

The following actions are required if use of the privacy tool is required, and a wallet does not already exist with the required database credentials – a new wallet is required for each database installation.

1. Obtain `datapriv.jar` in order to create a wallet.
2. Run the executable jar to create a wallet:

```
java -cp datapriv.jar
com.oracle.retail.datapriv.pki.CredentialStoreMain createWallet ./

(createWallet location-of-wallet)
```

3. Run the executable jar to create a user:

```
java -cp datapriv.jar
com.oracle.retail.datapriv.pki.CredentialStoreMain createUser ./
[USERNAME] [PASSWORD]

(createUser location-of-wallet, username, password)
```

4. Run the executable jar to create database connection:

```
java -cp datapriv.jar com.oracle.retail.datapriv.pki.CredentialStoreMain  
createDSN ./ jdbc:oracle:thin:@[SERVERNAME]:1521/[DATABASENAME] [username]  
[password]
```

(createDSN location-of-wallet, database-url, username, password)

The following command lists the details contained in the wallet:

```
java -cp datapriv.jar com.oracle.retail.datapriv.pki.CredentialStoreMain  
listCredentials ./
```

You may observe a SecurityException which appears to indicate that the wallet has not been created / updated. Despite this, the file is created successfully.

Two files are created: ewallet and cwallet.sso.

Only the cwallet.sso is required. This file should be placed in the [tomcat root]\bin folder.

## Generating Privacy Tool Certificates

The following actions are required if use of the privacy tool is required and certificates are not already available – certificates may be generated once per installation.

1. keytool -genkey -alias tomcat -keyalg RSA

Enter keystore password: USER GENERATED PASSWORD

Re-enter new password: USER GENERATED PASSWORD

What is your first and last name?

[Unknown]: {enter name here}

What is the name of your organizational unit?

[Unknown]: {enter unit}

What is the name of your organization?

[Unknown]: {enter organization}

What is the name of your City or Locality?

[Unknown]: {enter location}

What is the name of your State or Province?

[Unknown]: {Enter region}

What is the two-letter country code for this unit?

[Unknown]: {Enter country code}

{confirm}

[no]: yes

Enter key password for

(RETURN if same as keystore password): password

Re-enter new password: password

Note: This will create the .keystore in the users' home location for example, (Windows) - C:\users\username.

2. Copy / move the file to the correct location, for example, place the .keystore file at the following location:

c:/privtoolkeys/

and ensure that the properties file for the keystore is set accordingly (see the following section).

## Configuring the Data Privacy Tool

In order for the privacy tool to be run within Tomcat, the following changes are required to the standard tomcat configuration:

1. A new file `runtime.properties` is required containing the following entries:

```
APPLICATION_SERVER=tomcat
DP_PROVIDER=com.oracle.retail.datapriv.SqlProvider
GET_PROVIDER=com.oracle.retail.datapriv.GetQueryProvider
FORGET_PROVIDER=com.oracle.retail.datapriv.ForgetQueryProvider
VALIDATE_PROVIDER=com.oracle.retail.datapriv.ValidateQueryProvider
CONNECTION_PROVIDER=com.oracle.retail.datapriv.ConfigDBConnectionProvider
CONFIG_DATA_PROVIDER=com.oracle.retail.datapriv.ConfigDataProvider
CONFIG_PATH=ppm
```

This file should be placed in the tomcat root folder.

2. A second file, `Jaas.config` should contain:

```
DataPrivRealm {
    com.oracle.retail.datapriv.LoginModule required debug=true;
};
```

3. Take the following files:

```
jaas.config
runtime.properties
```

and place as:

```
[tomcat-home]\webapps\datapriv\jaas.config
[tomcat-home]\webapps\datapriv\WEB-INF\classes\runtime.properties
```

4. Edit `[tomcat-home]\conf\server.xml`, and replace:

```
<Connector port="8009" protocol="AJP/1.3" redirectPort="8443" />
```

with:

```
<Connector SSLEnabled="true" acceptCount="100" clientAuth="false"
disableUploadTimeout="true" enableLookups="false" maxThreads="25"
port="8443" keystoreFile="/privtoolkeys/.keystore" keystorePass="[REPLACE WITH
USER GENERATED PASSWORD]"
protocol="org.apache.coyote.http11.Http11NioProtocol" scheme="https"
secure="true" sslProtocol="TLS">
</Connector>
```

Where `keystoreFile` points to the location where the `.keystore` resides.

5. Copy the `wallet.sso` to tomcat root (when running in Eclipse) or `tomcat\bin` folder when running Tomcat.
6. Copy the `runtime.properties` to tomcat root (when running in Eclipse) or `tomcat\webapps\datapriv\web-inf\classes` folder when running Tomcat.
7. Change `catalina.bat` to include `jaas.config`.
8. In `catalina.bat`, replace:

```
set "JAVA_OPTS=%JAVA_OPTS% -
Djava.protocol.handler.pkgs=org.apache.catalina.webresources"
```

with:

```
set "JAVA_OPTS=%JAVA_OPTS% -
Djava.protocol.handler.pkgs=org.apache.catalina.webresources -
Djava.security.auth.login.config==%CATALINA_BASE%\conf\jaas.config"
```



## Privacy Tool Testing

In order to test the web service, a testing tool may be employed to query the database using a set of requests. Examples of the requests are listed below:

Name	Method URL
Delete (Oracle)	DELETE https://[host]:8443/datapriv/rest/privatedata/[EMPNUMBER]?type=employee_oracle
Delete (SQL)	DELETE https://[host]:8443/datapriv/rest/privatedata/[EMPNUMBER]?type=employee_sqlserver
Get (Oracle)	GET https://[host]:8443/datapriv/rest/privatedata/[EMPNUMBER]?type=employee_oracle
Get (SQL)	GET https://[host]:8443/datapriv/rest/privatedata/[EMPNUMBER]?type=employee_sqlserver
Ping	GET https://[host]:8443/datapriv/rest/privatedata/ping
Validate (Oracle)	GET https://[host]:8443/datapriv/rest/privatedata/validateForget/[EMPNUMBER]?type=employee_oracle
Validate (SQL)	GET https://[host]:8443/datapriv/rest/privatedata/validateForget/[EMPNUMBER]?type=employee_sqlserver

where [EMPNUMBER] is replaced with the required employee number

[host] specifies the application server on which the data privacy tool is running and will be either localhost if running tomcat on the local machine, or a remote host name.

Each URL is in the form:

https://[host]:8443/datapriv/rest/privatedata/[EMPNUMBER]?type=employee\_oracle

Where 99999 is the refno of the employee and type refers to the queryGroup specified in the DP-Get.xml and DP-Forget.xml.

Each request will either be a GET or a DELETE.

All of these entries will require authorization.

A Request header entry "Authorization" is required. The value takes the form of: Basic username:password. Where [username]:[password] are base64 encoded.

The username and password need to match the entries created in the Wallet.

Select + add header and set first entry to Authorization, and set the value to:

Basic [encoded 64] [username]:[password]

In order to obtain your specific Authorization, use a base64encoding online tool.

To test the system, first attempt the ping to ensure a connection can be established.

The first time this occurs, the certificate will not be recognized by the testing application / browser plugin.

Select advanced and proceed to website to accept the certificate.

Once the ping is functional, other aspects of the privacy tool may be tested, for example, an attempt to get information for required employee numbers.

A validateForget should be attempted prior to Deleting an employee.

## Sample Request Information

Action - Get

Sample

```
GET
https://11g00dos.uk.oracle.com:8443/datapriv/rest/privatedata/validateForget/150?type=employee_oracle
```

Sample http request

```
GET /datapriv/rest/privatedata/validateForget/150?type=employee_oracle HTTP/1.1
Authorization: Basic Z3RwcjphZHGY
Host: xxxxx.uk.oracle.com:8443
```

Response (json data below has many fields modified to "txt" in this example for ease of reading)

```
{"employeeData":{"TITLE":"txt","SURNAME":"txt","FORENAMES":"txt","KNOWNAS":"txt","TELEPHONE":"7338683388","DATEOFBIRTH":"1970-01-01","NINUMBER":"txt","MAIDENNAME":"txt","MARITALSTATUS":"Single","PHARMRE GNUMBER":"6713073259","GENDER":"Default","EMAIL":"txt","VATREG":"2390916754","PAYROLLNUMBER":"9174205927","BADGENUMBER":"3551610117","CONTRACTTYPE":"Assistant Manager","CONTRACTEDHOURS":"37.5","JOBDESCRIPTION":"CA","PAYGRADE":"txt","PENSIONSCHEME":"Default","EMPLOYEE TYPE":"Employee","AGENCY":"None","ADDITIONALINFORMATION":"txt","CUSTOMFIELD":"txt","employeeControl":{"DISPLAYNAME":"txt","LOGIN":"txt","LOGINPASSWORD":"txt","JOINEDDATE":"2012-04-05","STARTDATE":"2012-04-05","FINISHDATE":"2018-01-01","LEAVINGREASON":"txt","RECORDSTATUS":"Active Employee"},"employeeAddresses":[{"TITLE":"txt","FORENAME":"txt","SURNAME":"txt","ADDRESSTYPE":"Home Address","CONTACTINFO":"txt","ADDRESS1":"txt","ADDRESS2":"txt","ADDRESS3":"txt","ADDRESS4":"txt","ADDRESS5":"txt","POSTCODE":"txt","COUNTY":"Default","COUNTRY":"Default","HOMEPHONE":"3282441353","WORKPHONE":"6701444521","MOBILEPHONE":"7296375734"}],"employeeP2yrate":[{"EFFECTIVEDATE":"Base Record","PAYRATE":"2.32","PAYRATETYPE":"Hourly"}]}}
```

## Updating the Privacy Tool

If the tool is previously installed and a new `datapriv.war` file is being provided, or an installation of the privacy tool is being refreshed, please perform the following actions:

- Remove the `[tomcat home]\webapps\datapriv` folder.
- Replace the `datapriv.war` file with the new provided file if available.
- Run tomcat, then ensure that the expanded `datapriv\web_inf\classes` folder contains the `runtime.properties` file (copy from previous installation, or use the details elsewhere in this document).

Alter the `DP-Global.xml` file in the `[tomcat-home]\webapps\datapriv\` folder to use the correct database location.

## DB Tables Impacted due to RTA/RTF Operation

Tblemployeemain  
Tblemployeecontrol  
Tblemployeebank  
Tblemployeetraining (read only)  
Tblhashtable (read only)  
Tblpayrates (read only)  
Tblemployeeaddress

## Output Files

There are no output files generated by the RTA/RTF calls – all data is returned via the http response.

## Known Issues

For a list of known issues, speak with your Oracle product representative.

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