Oracle Java Commercial Updates for WAY4™

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Introduction

The document describes the installation and update process for Oracle Java 8 Commercial Updates.

Warnings and information messages are marked as follows:

> ⊘ Warnings about potentially hazardous situations or actions.

> ⓘ Messages with information about important features, additional options, or the best use of certain system functions.

Chapter 1. Overview

The document describes:

- Installation and update process for Oracle Java 8 Commercial Updates.

- Environment setup in an operating system used for WAY4 components that are required by Oracle Java 8.

> ⊘ These instructions must not be used for the AIX POWER platform. For this platform, Java 8 is supplied along with WAY4 components.

Hereinafter, the platforms on which installation and setup will be made are split into two groups:

- Unix platforms:
  - Red Hat Enterprise Linux (RHEL) / Oracle Enterprise Linux (OEL)
  - Oracle Solaris SPARC
- Windows platform:
  - Microsoft Windows Server / Workstation

Chapter 2. Downloading, installing and updating Oracle Java 8 Commercial Updates

Procedures to download, install, and update Oracle Java 8 Commercial Updates are described below.

Downloading Oracle Java 8 Commercial Updates

Oracle Java 8 Commercial Updates can be downloaded after the appropriate Oracle license has been purchased on the website https://support.oracle.com.

Oracle provides instructions for downloading updates and notifies by email when they are published. The table shows the list of platforms for which download is possible.

Platform options for downloading

Component	Linux	Solaris SPARC	Windows
WAY4 client components (DB Manager and others)	-	-	Microsoft Windows (32-bit)
WAY4 server components (WAY4 Application Server and others)	Linux x86 for linux-i386 Linux x86-64 for linux-x64	Oracle Solaris on SPARC (64-bit)	Microsoft Windows x64 (64-bit)

Installation package:

- For Unix platforms: p<patch_number>_<java_numeric_version>_Linux-x86-64.zip for Linux and p<patch_number>_<java_numeric_version>_SOLARIS64.zip for Solaris SPARC

- For Windows platforms: p<patch_number>_<java_numeric_version>_MSWIN-x86-64.zip.

Where, for example, java_numeric_version = 180181 for 1.8.0_181.

Installing Oracle Java 8 Commercial Updates

1. Unpack the installation package on the target system, using:

    a. The "unzip" command (the unzip package must be installed on the system) on the Unix platform.

    b. File Explorer on the Windows platform

2. Install Java 8 according to the instructions:

    a. For Unix platforms:

        i. Linux: https://docs.oracle.com/javase/8/docs/technotes/guides/install/linux_jdk.html.

      ii. Solaris SPARC: https://docs.oracle.com/javase/8/docs/technotes/guides/install /solaris_jdk.html.

   b. For Windows platforms: https://docs.oracle.com/javase/8/docs/technotes/guides/install /windows_jdk_install.html.

   c. If it is possible to select components for installation, leave the components that are selected by default.

3. When selecting the target folder for installation (Install to:):

   a. It is recommended to install to the local drive/partition of the operating system. Installation to a network drive/mount point is not recommended.

   b. When updating, it is recommended to specify a new directory for installation (saving the old directory for the test period in order to switch to the old version if necessary).

> ⊘ Installation to a subdirectory in a directory with a WAY4 component is prohibited.

   c. On the Windows platform install to (the directory name must not contain spaces):

      i. Directory <local_drive>:\Java\jdk1.8.0_<update>, for example, C:\Java\jdk1.8.0_181.

      ii. Or directory <local_drive>:\Java\jdk8, for example, C:\Java\jdk8.

4. When installing JRE (Windows platform) follow the instructions from Item 3 for the directory <local_drive>:\Java\jre1.8.0_<update>, for example, C:\Java\jre1.8.0_181.

Updating Oracle Java 8 Commercial Updates

Updating Oracle Java 8 Commercial Updates is similar to installation.

Before starting to update, stop the component (see the documentation for the corresponding component).

When updating, it is recommended to specify a new directory for installation (saving the old directory for the test period in order to switch to the old version, if necessary). Previous, unused versions of Oracle Java 8 Commercial Updates can be deleted from WAY4 (to save disk space). It is recommended to delete only after the component's test period has been successfully completed.

Importing and installing additional Java components

Components of WAY4 may require installation of additional Java components.

Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files

Installation of this Java component is mandatory.

> ⓘ For JDK version 1.8.0_161 and higher, additional installation of JCE is not required.

Download the component from the website at the following link: https://www.oracle.com /technetwork/java/javase/downloads/jce8-download-2133166.html.

To install, do as follows:

1. Unpack the jce_policy-8.zip file.

2. Copy the files local_policy.jar and US_export_policy.jar to the directory <OWS_JAVA_HOME>\jre\lib\security (replacing the existing files, if any).

After installation, check that the file owner and file access privileges correspond to access privileges for the directory <OWS_JAVA_HOME>\jre\lib\security.

The Java Communications API 3.0

This Java component must be installed if required by documentation for the corresponding WAY4 component.

Download the component from the website at the following link: https://www.oracle.com /technetwork/java/javasebusiness/downloads/java-archive-downloads-misc-419423. html#java_comm_api-30u1.

Install according to the vendor's documentation.

Chapter 3. Configuring the operating system environment

For WAY4 components to o perate correctly, set the system environment variable OWS_JAVA_HOME that specifies the directory in which Oracle Java 8 Commercial Updates was installed.

Setup is performed in three steps:

1. Configuration of the system environment variable.

2. Reconfiguration and restart of services and/or restart of the operating system.

3. Check the correctness of the OS environment setup.

Configuring a system environment variable.

For Unix platforms, add to files (the path in the examples below is determined by the directory in which Java was installed):

- Linux

  - **/etc/environment**

    Example:

    ```
    OWS_JAVA_HOME=/usr/java/jdk1.8.0_<update>-amd64
    ```

    ⓘ If access privileges must be expanded to install the component, use the combination "sudo -E su" or"su" (without "-" to save the environment variable OWS_JAVA_HOME).

- Solaris

  - **/etc/profile**

    Example:

    ```
    OWS_JAVA_HOME=/usr/jdk/jdk1.8.0_<update>
    export OWS_JAVA_HOME
    ```

> (i) For Unix systems, for testing purposes without using the OS service, an environment variable can be set in user settings in **.bash_profile** files (instead of /etc/profile).
>
> If access privileges must be expanded to install the components, use the combination "sudo -E su -" or "su -" (with "-" to save the environment variable OWS_JAVA_HOME).

For Windows platforms:

- Using the "setx" command (for a description, see https://docs.microsoft.com/en-us/windows-server/administration/windows-commands/setx) in the command line interface (CLI) that was started with administrator privileges:

Example:

```
setx OWS_JAVA_HOME <local_drive>:\Java\jdk1.8.0_<update> /m
```

> (!) For the system variable OWS_JAVA_HOME to be available in the CLI after the value has been created or changed, restart the session (for example repeat login via SSH or restart cmd.exe).

> (i) For testing purposes without using the OS service, an environment variable can be set in user settings – the"setx" command without the "/m" modifier.

Restarting the operating system and/or restarting services

When WAY4 components are used that are integrated in the OS and that use OS services (WAY4 Application Server, WAY4 Remote Access), stop the component, reinstall OS services (using installation manuals for the corresponding WAY4 component), and then restart the component.

Components that operate on the WAY4 Application Server platform do not require additional actions. The actions required for WAY4 Application Server are sufficient.

If WAY4 components are used that are started as desktop applications, do as follows:

- If a system variable is used, restart the OS.

- If a custom variable is used, restart the WAY4 component.

Checking the correctness of the operating system environment installation

To check that the OS environment was installed correctly, run the following commands in the user session in which the WAY4 component will operate:

For Unix platforms:

```
echo $OWS_JAVA_HOME
```

For Windows platforms:

```
echo %OWS_JAVA_HOME%
```

Configuring the operating system environment for testing

For Windows platforms, when testing and it is necessary to simultaneously start several instances of a component (for example, DB Manager) in the same user session with different values of OWS_JAVA_HOME, it is recommended to set a variable right before starting the component.

For example, if DB Manager must be started with Java that is different from the one set in WAY4, it is necessary to sequentially execute the following commands in the same console session (an automation script can be created):

```
setx OWS_JAVA_HOME=C:\...\test_java8
start %OW_HOME%\client\dbm\dbm.exe
```

The value of the environment variable will change. If the value of the previous (original) environment variable must be restored, the automation script may appear as follows:

```
set OWS_JAVA_HOME_OLD=%OWS_JAVA_HOME%
setx OWS_JAVA_HOME=C:\...\test_java8
start %OW_HOME%\client\dbm\dbm.exe
setx OWS_JAVA_HOME=%OWS_JAVA_HOME_OLD%
```

For Windows platforms, when it is necessary to simultaneously start a WAY4 application on the WAY4 Application Server platform (for example, Scheduler) and DB Manager, a system variable is set up for WAY4 Application Server (64-bit version of Java). To start DB Manager, the following commands are executed for a 32-bit version of Java and the user under whom DB Manager will be started (different from Scheduler) .

```
setx OWS_JAVA_HOME=C:\...\java8_32bit
start %OW_HOME%\client\dbm\dbm.exe
```

If a W AY4 application on the WAY4 Application Server platform and DB Manager must be run under the same user, restore the value of the environment variable after starting DB Manager :

```
set OWS_JAVA_HOME_OLD=%OWS_JAVA_HOME%
setx OWS_JAVA_HOME=C:\...\java8_32bit
start %OW_HOME%\client\dbm\dbm.exe
setx OWS_JAVA_HOME=%OWS_JAVA_HOME_OLD%
```

Chapter 4. Checking the correctness of the installation (update)

To check that installation was performed correctly, run the appropriate command (under the user's name):

- For Unix platforms:

```
$OWS_JAVA_HOME/bin/java -version
```

- For Windows platforms:

```
%OWS_JAVA_HOME%\bin\java -version
```

- And get the result:

```
java version "1.8.0_<update>"
Java(TM) SE Runtime Environment (build 1.8.0_<update>-<build>)
...
```

If any other message is received, reconfigure the system variable to the correct directory or refer to the "Troubleshooting" section.

It is also necessary to check if the copied files "Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files": local_policy.jar and US_export_policy.jar are in the directory <OWS_JAVA_HOME>/jre/lib/security. The root directory of the archived file US_export_policy.jar must contain the file default_US_export.policy, and local_policy.jar must contain the file default_local.policy with the following content:

```
grant {
    // There is no restriction to any algorithms.
    permission javax.crypto.CryptoAllPermission;
};
```

Chapter 5. Rollback to the previous version of Oracle Java 8 Commercial Updates

If errors occur with an update of Oracle Java 8 Commercial Updates, roll back to the previous version according to the instructions in "Updating Oracle Java 8 Commercial Updates".

When it is not possible to switch to the previous version (there is no directory with the previous version of Oracle Java 8 Commercial Updates), import and install it according to the recommendations in "Downloading Oracle Java 8 Commercial Updates" and "Installing Oracle Java 8 Commercial Updates", respectively.

Chapter 6. Troubleshooting

If errors occur when installing JDK, repeat installation and contact Oracle Support if errors occur.

If errors occur when checking the correctness of installation (update), contact OpenWay Customer Support. When contacting Customer Support, include the diagnostic file check-ows_java_home-<hostname>.log that is generated using the utility check-ows_java_home.sh for Unix platforms (check-ows_java_home.bat for Windows platforms) that is included with the WAY4 component.

> (i) By default, a log file is saved in the same directory as the bat file. If a user does not have write privileges for this directory, the batch bat file must be copied in advance to the directory for which the user has write privileges.