



## Installation and Configuration Manual

# Oracle Java Commercial Updates for WAY4™

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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.

# 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

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

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

### 2.1 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.

*Table. List of platforms for download*

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-i586 for Linux x86 linux-x64 for Linux x64	Oracle Solaris on SPARC (64-bit)	Microsoft Windows x64 (64-bit)


The installation packages has the following name:

- For Unix: jdk-8u<release>-<os>-<architecture>.tar.gz.
- For Windows: jdk-8u<release>-<os>-<architecture>.exe.

For example, for Microsoft Windows (32-bit) – jdk-8u251-windows-i586.exe.

### 2.2 Installing Oracle Java 8 Commercial Updates

1. 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](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](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](https://docs.oracle.com/javase/8/docs/technotes/guides/install/windows_jdk_install.html).
  2. 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\_251.
      - ii. Or directory <local\_drive>:\Java\jdk8, for example, C:\Java\jdk8.
  3. When installing on Windows, it is recommended to disable installation of "Source Code" and "Public JRE" (select "This feature will not be available").

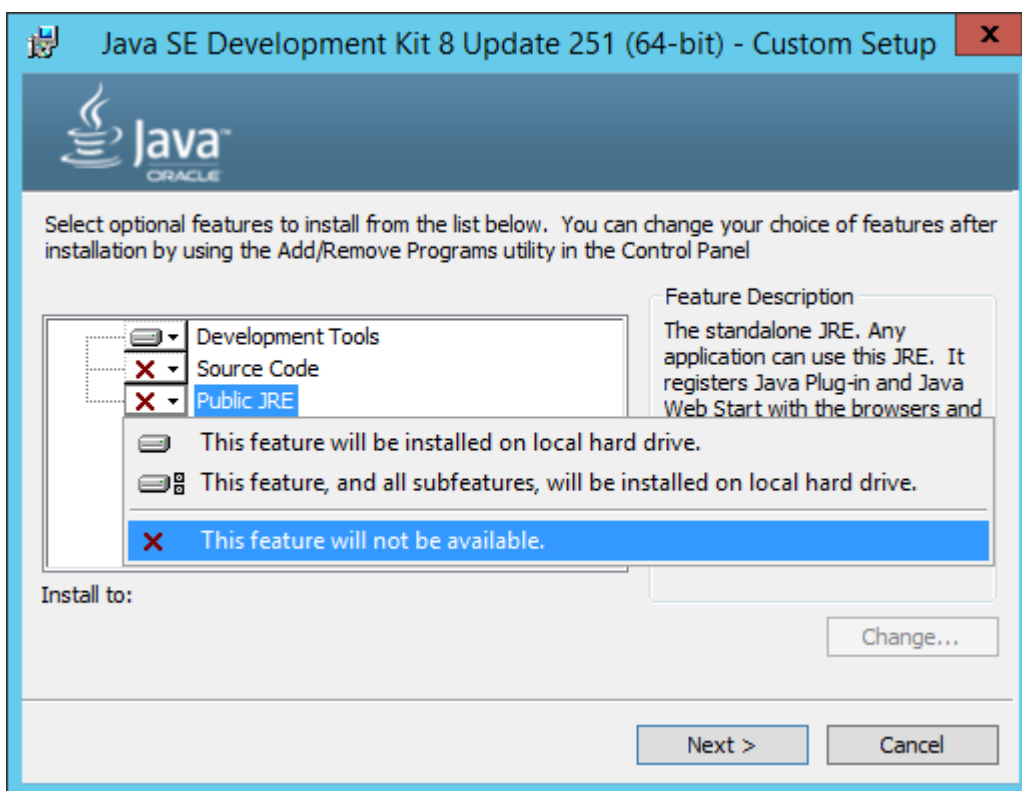


Fig. Installing Java 8 on Windows

## 2.3 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.

## 2.4 Importing and installing additional Java components

Components of WAY4 may require installation of additional Java components.

### 2.4.1 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.

### 2.4.2 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](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.



## 3. Configuring the operating system environment

For WAY4 components to operate 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. Validation of the OS environment installation.

### 3.1 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
```

 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 component, 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).



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

## 3.2 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.

## 3.3 Checking the correctness of the operating system environment installation

To validate the installation of the OS environment, 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%
```

## 3.4 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):

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

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

If a WAY4 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%  
set OWS_JAVA_HOME=C:\...\java8_32bit  
start %OW_HOME%\client\dbm\dbm.exe  
set OWS_JAVA_HOME=%OWS_JAVA_HOME_OLD%
```

## 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 section "[Troubleshooting](#)".

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;
};
```

## 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.

## 6. Troubleshooting

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

If errors occur while validating the installation (update), contact OpenWay Support. When contacting 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) included with the WAY4 component.



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.