



Compuware Enterprise Services

Installation and Configuration Guide

Release 05.00

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<http://go.compuware.com/>

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Introduction

This guide provides instructions on how to install Compuware Enterprise Services (CES).

Compuware Enterprise Services (CES) is a set of commonly used and shared services running on a web platform. Based on the theme of Modernize, Simplify, and Automate (MSA), CES can be accessed by any Compuware resource choosing to use its services.

Compuware Enterprise Services is a shared common server resource, designed to be used with other Compuware products (e.g. iStrobe and Fault Analytics) running on workstations. CES uses a Web browser that enables you to create a custom view of the product being used.

Compuware Enterprise Services is required for the plug-ins licensed through Topaz. It checks for valid LMS licensing through Compuware Enterprise Services' HCI Configuration as described in Chapter 4, "Configuring Compuware Enterprise Services".

Intended Audience

This installation guide is intended for the individual(s) installing CES. You should be familiar with administering the operating system, your network security policies, and your web server. If you are unfamiliar with any of the prerequisite software, contact your administrator for help.

How This Guide is Organized

This guide contains the following chapters and appendixes:

Chapter 1, "Installing Compuware Enterprise Services on Windows"

Chapter 2, "Installing Compuware Enterprise Services on z/OS UNIX"

Chapter 3, "Installing Compuware Enterprise Services on Linux"

Chapter 4, "Configuring Compuware Enterprise Services"

Chapter 5, "Uninstalling Compuware Enterprise Services"

Appendix A, "CES Repository Preparation"

How to Use This Guide

If you are installing CES for the first time, you should read the following chapters:

- The appropriate installation chapter or appendix for your environment
- Chapter 4, "Configuring Compuware Enterprise Services"

CES Publications

To learn more about using CES:

- See the CES online help within the product.
- Visit Compuware's GO/FrontLine at <http://go.compuware.com> and select CES, for the latest technical information on CES.

CES 3rd Party Licensing Documentation

To view CES 3rd party licensing documentation, refer to the legal subdirectory that is included as part of the CES installation.

Compuware CES Customer Support

Compuware provides a variety of support resources to make it easy for you to find the information you need.

Compuware Go Customer Support Website

You can access online information for Compuware products via our Compuware Go customer support website at <http://go.compuware.com>.

Compuware Go provides access to critical information about your Compuware products. You can review frequently asked questions, read or download documentation, access product fixes, or e-mail your questions or comments. The first time you access Compuware Go, you are required to register and obtain a password. Registration is free.

Contacting Customer Support

Phone

- USA and Canada: 1-800-538-7822 or 1-313-227-5444.
- All other countries: Contact your local Compuware office. Contact information is available at <http://go.compuware.com>.

Web

You can report issues via the Quick Link **Create & View Support Cases** on the Compuware Go home page.

Note: Please report all high-priority issues by telephone.

Mail

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Corporate Website

To access Compuware's site on the Web, go to <http://www.compuware.com>.

The Compuware site provides a variety of product and support information.

Chapter 1.

Installing Compuware Enterprise Services on Windows

This chapter guides you through the process for installing Compuware Enterprise Services on Windows.

Before Beginning

Before beginning the installation of Compuware Enterprise Services on Windows, you should have the following:

- Verify that you have a compatible version of Java installed. Those versions include either Java 1.7 or Java 1.8.
- A z/OS DB2, SQL Server, DB2 LUW, or Oracle database subsystem (host and port) accessible with administrator-level permissions.
- The Compuware Enterprise Services media image downloaded from the Compuware Enterprise Services media; or an image downloaded from an RFN order; or an image from the Enterprise Common Components (ECC) EP Media Browser.
- Enough allocated system temporary space to accommodate the installation. Compuware recommends 3 GB. When the installation is complete, the temporary installation files are removed.

Installing Compuware Enterprise Services on Windows

1. From the Compuware Enterprise Services media image downloaded from an RFN order, or from the Enterprise Common Components (ECC) EP media, select **Install CES for Windows**, and click **Start Install**. The Install Anywhere application prepares for the installation. The **Compuware Enterprise Services** dialog box appears.
2. Read the introduction content, and then click **Next** to proceed. The **License Agreement** page appears.
3. Accept the terms of the License Agreement and click **Next**. The **Oracle License Agreement** page appears.
4. Accept the terms of the Oracle Technology Network Development and Distribution License Agreement and click **Next**.
5. Specify an instance name for the CES Service. This is used to distinguish between different versions that can run on your system. The name entered here will be appended to 'Compuware Enterprise Services' as the service name. If this is the first instance of CES being installed, then this step is skipped. For example:

```
Compuware Enterprise Services$CES_16.3.0.36
```

6. Specify an installation folder using the **Choose...** button or accept the displayed installation folder for Compuware Enterprise Services (default: C:\Program Files\Compuware\CES).
7. Compuware Enterprise Services stores log and configuration **data** in a specific directory. Click **Choose...** to specify a folder path or click **Next** to accept the displayed location (default: C:\ProgramData\Compuware\CES\data).

Note: The **ProgramData** folder is a hidden folder in MS Windows. If you choose this default location, be sure that all hidden files and folders are displayed in MS Windows. Refer to MS Windows Help for instruction on revealing hidden files and folders.

8. If the URL to access CES will use HTTPS, select the **Use HTTPS** checkbox. You may need to provide a keystore and password. Otherwise, these fields can be ignored. Click **Next**. The **CES Occupied Ports** page appears.
9. Specify the port settings that CES will use to access Compuware technology:
 - **Web Application port** (default: 48226) to access the web application via a browser.
 - **Web Application Listener secure port** (default: 48443) See the Jetty web application server documentation for further information on setting up HTTPS
 - **Service Stop port** (default: 8465) uses this port to signal the server to stop.
 - **Infocenter port** (default: 10250) to access online help.
10. (*Optional*) If you plan to use a DB2 database, select the **Using DB2 database** check button, then specify the path to the **DB2 driver location**, click **Next**. Otherwise, leave the check box unselected. Click **Next**.
11. Review the installation information. If it is incorrect, use the **Previous** button to navigate back to the appropriate page and make revisions to the installation settings as necessary. If the information is correct, click **Install** to start the Compuware Enterprise Services installation. The **Install Complete** page appears when the installation finishes.
12. Click **Done**. CES automatically launches within the default browser. It is recommended that you bookmark this URL for future access.
13. The Compuware Enterprise Services installation process is complete. Continue with configuring a database (see Chapter 4, “Configuring Compuware Enterprise Services”).

Chapter 2.

Installing Compuware Enterprise Services on z/OS UNIX

This chapter guides you through the process for installing Compuware Enterprise Services on z/OS UNIX.

If the Compuware Enterprise Services has already been installed in support of previously installed Compuware products (for example, iStrobe, Topaz, or Abend-AID Fault Analytics), you do not need to re-install it.

A z/OS UNIX system administrator should install CES.

You will need a database administrator to create the database (and tablespace for DB2).

Depending on your site standards, you may also need an MVS systems programmer to set up the CES Manager on JZOS. You may also need a security administrator.

Before Beginning

Before beginning the installation of Compuware Enterprise Services on z/OS UNIX, you should have the following:

- Verify that you have a compatible version of Java on the z/OS machine. Those versions include either Java 1.7 or Java 1.8.
- A z/OS DB2, SQL Server, DB2 LUW, or Oracle database subsystem (host and port) accessible with administrator-level permissions.
- The Compuware Enterprise Services media image downloaded from the Compuware Enterprise Services media; or an image downloaded from an RFN order; or an image from the Enterprise Common Components (ECC) EP Media Browser.
- Enough allocated system temporary space to accommodate the installation. Compuware recommends 1,132,000 1k blocks. When the installation is complete, the temporary installation files are removed.

Installing Compuware Enterprise Services on z/OS UNIX

1. Select **Install CES for z/OS UNIX**. The **Mainframe FTP Information** tab appears.
2. Specify a valid **Host**, **User ID/Password**, **Port** number (default = 21), and finally an existing **z/OS UNIX Path** in which to upload the `install.jar` and `install.sh` files from the Compuware Enterprise Services product image to the mainframe as binary.
3. Select **Upload files to mainframe** to begin the upload.
4. Log on to the mainframe and navigate to an OMVS command prompt. Change the directory to the location where the `install.jar` and the `install.sh` files were transferred.


```
cd <directory containing the uploaded install.jar and install.sh files>
```

5. Ensure that the `install.sh` file has execute authority and execute it. From the prompt, enter `chmod 777 install.sh` to open up permissions, if necessary.
6. Execute the `install.sh` file. For example:

```
./install.sh
```

The Compuware Enterprise Service installer starts.

Notes:

- You can cancel the installation at any time by typing `quit`.
 - You can go back in the installation panels at any time by typing `back`.
7. Enter the directory path to a supported installation of JAVA. For example:


```
/usr/lpp/java/J7.1_64.b1d111513
```
 8. The installer requires use of the system temp folder and may require up to 1,132,000 1k blocks of pre-allocated space. Specify Y (Yes) or N (No) for changing the installation temporary space location from the system's `/tmp` directory to another location. If N, the installation launches. If Y, you are prompted to enter a directory path to the designated temporary directory space. Press **Enter**. The **License agreement** panel appears.
 9. Read the CES License agreement, press **Enter** to page through the entire agreement until you are prompted to accept the terms of the license. Type Y and press **Enter** to accept the terms of the license agreement. The **Oracle License Agreement** panel appears.
 10. Read the Oracle License agreement, press **Enter** to page through the entire agreement until you are prompted to accept the terms of the license. Type Y and press **Enter** to accept the terms of the license agreement.

Notes:

- You can cancel the installation at any time by typing `quit`.
 - You can go back in the installation panels at any time by typing `back`.
11. Specify the absolute installation directory path you wish to install Compuware Enterprise Services, or press **Enter** to accept the default location (Default: `/opt/Compuware/CES`).

Notes:

- If you choose an alternate installation directory instead of the default, the recursive directory path will be created using privileges of 775.
 - The installer requires use of up to 1,132,000 1k blocks of pre-allocated space to install properly. You may be prompted to create free space in order to continue the installation.
12. Specify a data directory into which CES will store log and configuration data. You can accept the default directory by pressing **Enter**. (Default: `<your absolute installation directory path>/data`).
 13. Enter the user ID needed to install and run the CES job (Default: current user ID).

Note: The CES job is a long running process for CES to function. Choose a user ID appropriate for that condition.
 14. Specify Y or N whether you want to modify the default port numbers (Default: N)
 - **Web Application Port** (Default: 48226) to access the web application via a browser.
 - **Web Application Listener secure port** (Default: 48443) See the Jetty web application server documentation for further information on setting up secure HTTPS.

- **InfoCenter** (Default: 10250) to access online help.
15. Specify Y or N to whether you plan on using a DB2 database. Press **Enter**. If you specified Y, you will be prompted to specify the path to the DB2 driver location. Press **Enter**.
 16. Review the summary installation parameters you just entered. If any of them are incorrect, type **Back** and revise the installation settings as necessary. If they are correct, press **Enter** to start the Compuware Enterprise Services installation. The **Installation Complete** panel appears once the installation finishes.
 17. Press **Enter** to exit the installer.

The Compuware Enterprise Services installation process is complete. You must run CES in a browser and configure a database by following the CES URL specified on the post-installation screen. See “Running Compuware Enterprise Services Web Application” on page 2-3 and “Running Compuware Enterprise Services as a Started Task” on page 2-3

```
Install path: /u/jsmith/CES123
Data folder: /u/jsmith/CES123/data
CES URL: http://<hostname>:48226/compuware
Web Application Port: 48226
Web Application Listener secure port: 48443
Infocenter port: 10250
```

Running Compuware Enterprise Services Web Application

Following is a summary of steps needed to run CES as a Started Task.

- In the CES installation directory, edit the SAMPLE_FTP.JCL member by following the editing instructions in the comments.
- Submit the job.
- Go to member JZOSPROC in the newly created dataset.
- Change QUAL to the prefix of the dataset.
- Change the job card to match your system requirements for PDS member MANAGER.
- Submit the MANAGER JCL job.

Running Compuware Enterprise Services as a Started Task

1. Create a dataset for the CES Manager runtime files. A partitioned dataset (PDS) will lend itself better to updating and customizing the JCL prior to submission. The job shown in step 2 illustrates creation of a new PDS for this FTP transfer.
2. FTP the following files from the CES installation directory in z/OS UNIX to MVS:

- JZOSPROC.JCL
- PARMLIB.CESAMN
- SAMPLE.JCL
- PARMLIB.CESEMN

The files that start with “PARMLIB” are input parameter files used to start the appropriate CES Manager service. These file names can be shortened by eliminating the prefix “PARMLIB.”. The files that are qualified as JCL are the PROC and JOB samples for executing on the z/OS system; these file names can be shortened by removing the “.JCL” qualifier.

Refer to the SAMPLE_FTP.JCL in the CES directory and edit it as follows:

- Modify the job card

- Change **sysid** on JOBPARM card to the target z/OS system name.
 - Change **userid** to your z/OS user ID throughout the JCL.
 - In the INPUT DD, make the following changes:
 - Change **sysid** on JOBPARM card to the target z/OS system name.
 - Change **password** to the password associated with the z/OS user ID to the FTP server.
 - Change directory (**cd**) to your Compuware Enterprise Services installation location.
 - Add the extra **get** command that appears at the bottom of the job before the **quit** command.
 - Submit the job to transfer the files.
3. After the FTP process is complete, modify the JCL members in the dataset you created as needed:
- JZOSPROC — Change the dataset name for DDNAME STDENV and MAINARGS to a system dataset where you store the PARMLIB.CESxxx members. The PROC is shipped by default to use &QUAL.PARMLIB where QUAL defaults to SYSA. This PROC should be put into a system PROCLIB to be referenced automatically when the job for the CES Manager is submitted. You can rename the PROC to follow your system standards (for example: CESMANGR).
 - VERSION - Set the VERSION variable to the level of Java installed on the system. The VERSION variable is used within the JZOSPROC to invoke the proper version of the Java Batch Launcher. The default is set to 70 to invoke Java 7.
 - REGSIZE - The REGSIZE variable specifies a specific region memory allocation. The default is 0, which sets the region memory size based on the system defaults defined within the JES2 sub-system.
 - LEPARM - The LEPARM variable is the mechanism used by the JZOS to establish settings for the z/OS language environment. The initialization of Java is performed by LE as part of the z/OS operating system. By default, the setting assigns the UMASK to files created in the HFS file system. Note that UMASK is a compliment to the permission assignment. The default value is 022, which will give new files a permission setting of 644 for files and 755 for directories. Refer to z/OS UNIX documentation for valid values and other information.
 - MANAGER - Change the job card to match your system requirements.
 - ARG=CESAMN is set by default to start the CES Manager.

```
000001//SAMPLE01 JOB ('ACCOUNT',78,1,1),'CES WEB APP SERVER',
000002// CLASS=L,MSGCLASS=H,NOTIFY=&SYSUID,REGION=0M
000003//*****
000004//* Use CESEMN for the env memeber for all uses
000005//* Use ARG=CESAMN" to run CES Web Application
000006//*****
000007//CESSRVR EXEC JZOSPROC,ENV=CESEMN,ARG=CESAMN
000008//*
```

- As shown in the JCL above, you can insert a JCLLIB statement if you want to invoke the JZOSPROC from the CESOSGI.CNTL dataset.

For example:

```
// JCLLIB ORDER=(<USER>.CESOSGI.CNTL)
```

4. Submit the JCL from member MANAGER, or start the system task (described below), to start the CES OSGi.

Executing the CES Jobs as Started Tasks

You can, optionally, set up the CES OSGi to execute as a started procedure on your z/OS system by adding the start command to the SYS1.PARMLIB(COMMNDxx) member. Your installation may require special security authorizations for the started task to actually execute.

CES OSGi as a started task

You can rename the PROC at your discretion so that the long-running task is identifiable as the CES Manager (for example: CESMANGR) or to match your systems standards. In this setup, you would only have to start the CES Manager the first time with a z/OS console command:

```
START JZOSPROC
```

or

```
START CESMANGR
```

For stopping the CES Manager, you can cleanly terminate it by using the following console command:

```
STOP JZOSPROC
```

or

```
STOP CESMANGR
```

Changing the Time Zone for CES OSGi

The member name CESEMN defines the Time Zone variable.

For example:

```
TZ = EST5EDT
```

- **EST** is Eastern Standard Time
- Standard Time is 5 hours west of the universal reference time
- **EDT** is Eastern Daylight Savings Time

For more information on setting time zones in Compuware Enterprise Services, refer to IBM's z/OS Information Center on the Web.

Modifying Java Heap Size for CES OSGi

The member name CESEMN defines the startup options. The CES Server is configured with an initial heap size of 256 MB (java option = '-Xms256M') and a maximum heap size of 1024 MB (java option = '-Xmx1024m').

To modify these parameters:

1. Stop the CES Server.
2. Locate the following two lines in member CESEMN.

```
# INSTALLER: Sets java heap allocation if more becomes necessary
DEFS="-Xms256M -Xmx1024m "
```

3. Make the appropriate changes to the heap sizes.
4. Restart the CES OSGi.

Chapter 3.

Installing Compuware Enterprise Services on Linux

This chapter guides you through the process for installing Compuware Enterprise Services on Linux.

Before Beginning

Before beginning the installation of Compuware Enterprise Services, you should have the following:

- Verify that you have a compatible version of Java on the Linux machine. Those versions include either Java 1.7 or Java 1.8.
- Ensure that the installable media is on the machine on which you intend to install.
- If Java home is not set as a system variable, identify the path to your installed JRE.
- Issue the following two export commands before executing the `install.bin` file.

```
JAVA_HOME=<path to JRE>
PATH=$JAVA_HOME/bin:$PATH
```

Installing Compuware Enterprise Services on Linux

1. Select **Install CES for Linux** and locate the file `install.bin`. This file is located at `Disk1\InstData\NoVM`.
2. Ensure that the `install.bin` file has execute authority. Perform a `chmod 777 install.bin` to open up permissions, if necessary.
3. Execute the following commands:

```
JAVA_HOME=<path to JRE>
PATH=$JAVA_HOME/bin:$PATH
./install.bin
```

The CES installer starts.

4. After reading the Introduction panel, press **Enter**. The **License agreement** panel appears.
5. Read the Compuware and Oracle license agreements, pressing **Enter** until you have scrolled through the pages and read the entire agreement. Type `Y` and press **Enter** to accept the terms of the license agreement.

Note: If at any point you wish to move back during this installation, type back on the command line. If you need to quit the installation, type `quit` on the command line.

6. Specify the absolute directory path in which to install Compuware Enterprise Services, or press **Enter** to accept the default location (Default: `/opt/Compuware/CES`).

Note: If you specified an absolute installation directory other than the default, a confirmation message appears. Confirm the directory path you chose was correct by typing **Y** and pressing **Enter**.

7. Specify an absolute directory path into which CES will store log and configuration data. You can accept the default directory (default: /<installation directory path>/data) by pressing **Enter** or type an absolute path and press **Enter**.
8. Specify the user ID needed to install and run the CES daemon (Default: current user ID).

Note: The CES daemon is a long running process for CES to function. Choose a user ID appropriate for that condition.

9. Specify **Y** or **N** whether you want to modify the default port numbers. If you select **Y**, you will be prompted to enter a new port number for the following ports.
 - **Web Application Port** (default: 48226) to access the web application via a browser.
 - **Web Application Listener secure port** (default:48443)
 - **Web Application Stop** (default: 8465)
 - **InfoCenter** (default: 10250) to access online help.
10. Specify **Y** or **N** to whether you plan on using a DB2 database. Press **Enter**. If you specified **Y**, you will be prompted to specify the path to the DB2 driver location. Press **Enter**.
11. The Ready to Install panel displays a summary of the parameter information you have entered for this installation. If it is incorrect, type back and revise the installation settings as necessary. If it is correct, press **Enter** to start the Compuware Enterprise Services installation. The Installation Complete panel appears when the installation finishes.
12. From the Installation Complete panel, a listing of the parameters you chose during the installation are again displayed, plus the CES URL that will be used to access CES. Please record this information for future reference. And bookmark the URL once you have invoked it in a browser.
13. The Compuware Enterprise Services installation is complete. You must now proceed to configure the database by starting CES (accessed from a browser using the CES URL from step 12). Information for configuring the database; along with establishing a host connection to the mainframe via HCL, licensing, and email settings.
14. Press **Enter** to exit the installer.

Chapter 4.

Configuring Compuware Enterprise Services

After installing Compuware Enterprise Services, there are additional configuration considerations. The CES configuration process requires that you configure the following:

- Database Setup settings
- Email settings
- Host connection settings
- Licensing settings
- Infocenter settings

The first time you launch the CES application, you are automatically prompted to set up the database. You *must* configure the database and restart Compuware Enterprise Services.

Once the database is configured, you may select the Administration icon to perform further configurations within the CES application interface.

Database Setup

After installing CES, and before using it, you are required to configure the database used for Compuware's web products. You will not be able to access other parts of CES until a database is properly configured.

Full access to the CES interface becomes available only after you have successfully installed a database. Upon subsequent invocations of CES, the **Database Settings** window can be accessed from the **Administration** window, then selecting **Database**.

Further details for CES database setup are provided in Appendix A, "CES Repository Preparation".

1. Open the Compuware Enterprise Services application in a browser using the URL specified in the installation. For example:

```
http://<hostname>:48226/compuware
```

2. From the **Database Settings** window, select a DBMS type by choosing a DBMS from the drop-down list. You must choose the same DBMS type that you created before installing Compuware Enterprise Services.
 - For an **IBM DB2 z/OS** database, enter the following:
 - Database server
 - Port
 - Database location
 - Database name
 - Tablespace name
 - Schema
 - JDBC Driver Path
 - Security mode—Choose one of the following secure log on modes:
 - Standard—Log on to DB2 using a user ID and password in plain text.
 - ID Only—Log on to DB2 using a user ID that does not require a password.
 - AES Encrypted Password—Log on to DB2 using an unencrypted user ID, and an AES encrypted password.

- AES Encrypted ID and Password—Log on to DB2, using AES encryption for both the user ID and password.
 - Database user ID
 - Database password
 - Database administrator ID
 - Database administrator password
- For an **IBM DB2 for LUW** database, enter the following:
- Database server
 - Port
 - Database name
 - Schema
 - JDBC Driver Path
 - Database user ID
 - Database password
 - Database administrator ID
 - Database administrator password
- For a **Microsoft SQL Server** database, enter the following:
- Database server
 - Port
 - Instance name—if you select an instance name other than the default, the port value is ignored.
 - Database name
 - Schema
 - Database user ID
 - Database password
 - Database administrator ID
 - Database administrator password
- For an **Oracle** database, enter the following:
- Database server
 - Port
 - Database name
 - Schema
 - Database user ID
 - Database password
 - Database administrator ID
 - Database administrator password

When completed, click **Test Connection**. If your connection is good (indicated by a pop-up message), click **Apply**.

Other Compuware Enterprise Services Configurations

In addition to the setting up the database, there are a few other configuration steps needed for the Compuware Enterprise Services. In CES, navigate to the Administration window and select the following configuration items.

Email

In the Email settings you can specify your outgoing mail server and enter CES@compuware.com as the sender.

Host Connections

You must have at least one HCI port configured on one LPAR. Specify the host connection of the HCI port on the LPAR that contains the license file that is available to the License Management System (LMS) connected to that LPAR. (In the case where

multiple HCIs have been defined to Compuware Enterprise Services, each HCI instance is checked until a valid license is encountered.)

Licensing

Set your Lease Timeout (default 10 hours): Use this to set an active time duration for a license that has been checked out. Once the time duration expires, that license then becomes available to be checked out again.

Infocenter Settings

In the Infocenter settings, specify a port for the Compuware documentation information center.

Chapter 5.

Uninstalling Compuware Enterprise Services

Uninstall Compuware Enterprise Services using one of the following processes.

CAUTION:

It is important to recognize that uninstalling CES will also uninstall any of the Compuware web-based products. If you want to uninstall a specific product, you must follow the uninstall instructions for that product.

Uninstalling CES from Windows

1. Locate and launch the `uninstall.exe` file from the directory in which CES was installed.
2. Click **Uninstall**. The uninstall process begins.
3. When the uninstall process indicates it has completed, click **Done**.

Uninstalling CES from z/OS UNIX or Linux

1. From a command line, execute the following command:

```
rm -r <ces installation directory>
```


Appendix A.

CES Repository Preparation

This worksheet helps database administrators prepare a new repository for Compuware Enterprise Services. CES supports DB2 z/OS, DB2 LUW, SQLServer, and Oracle RDBMS. Follow the guidance specific to your platform below and contact Compuware Support with any questions.

Note: At this time, DB2 v.10 JDBC drivers are not compatible with Java 1.8.

In addition to those preparation guidelines outlined in the following environments, it is assumed that the database user will have the ability to insert, select, update, and delete records from the database.

DB2 z/OS

Choose any single, non-destructive DB2 subsystem, running DB2 Version 10 (New Function Mode) or later, in which to create a database and tablespace prior to starting the CES installation. Requirements for the database and tablespace are found below under the heading 'Database/Tablespace Name'. The installation process loads some initial data- manual creation of the DB2 objects is not possible. JDBC universal drivers are also required to be available on the DB2 for z/OS subsystem that will be used. Additional information to support the connection to JDBC is found below under 'JDBC Driver Path'.

You must supply the directory containing the driver (db2jcc.jar) and license file (db2jcc_license_cu.jar or db2jcc_license_cisuz.jar) during the CES database installation process.

Database Server

This is the DNS name or the IP address of the server on which DB2 for z/OS is installed. Look for "DOMAIN", by browsing the *ssidMSTR* job and doing a find on 'DSNL004I'.

Note: The *ssid* refers to the DB2 subsystem id. *ssidMSTR* is a required DB2 address space that must be running for DB2 to be operational. 'DSNL004I' is a message generated by DB2 that can be found in the JES log output of *ssidMSTR*.

Port

This is the port on which this database is listening. Look for "TCPPORT", by browsing the *ssidMSTR* job and doing a find on 'DSNL004I'.

Database location

This is the location name of your DB2 host. Look for "LOCATION", by browsing the *ssidMSTR* job and doing a find on 'DSNL004I'.

Database/Tablespace Name

This is the name of the database and tablespace created in your DB2 for z/OS subsystem that will be used to hold the DB2 tables and indexes that CES will create. The tablespace

associated with the database must be created in a 32k bufferpool. The tablespace must be segmented (SEGSIZE >0). A CCSID of EBCDIC should be specified on the create database. The CES tables contain LOB data. Include “**SET CURRENT RULES = 'STD';**” prior to creating the database and tablespace and the LOB tablespace, auxiliary tables and indexes will be implicitly created for you. An implicitly created LOB tablespace will require “*USE*” privileges to the default bufferpool for user LOB data.

Schema

This is the Creator/Schema Name to use for the CES DB2 tables, indexes, and views. If this name is different than the “*Database user ID*” then the “*Schema*” should be set up as a secondary authorization ID to the “*Database user ID*”. Compuware recommends keeping the Schema and the Database user ID the same.

JDBC Driver Path

The IBM Data Server DB2 Driver for JDBC and SQLJ must be installed and the packages bound for that DB2 subsystem. Be sure that the driver files can be read by the CES installation program running on z/OS UNIX. To connect to the JDBC location, several z/OS DB2 stored procedures must be installed on the DB2 subsystem. See ‘DSNTESR’ and ‘DSNTIJMS’ found in the DB2 SDSNSAMP dataset. The JDBC connection will be verified, prior to installation, by clicking the ‘Test Connection’ button.

For additional information, refer to the reference manual “*DB2 for z/OS Application Programming Guide and Reference for Java*” found in the IBM Knowledge Center for your release of DB2.

Security Mode

Specifies the log on mode to use when accessing the CES database.

- **Standard:** Log on to DB2 using a user ID and password in plain text.
- **ID Only:** Log on to DB2 using a user ID that does not require a password.
- **AES Encrypted Password:** Log on to DB2 using an unencrypted user ID and an AES encrypted password.
- **AES Encrypted ID and Password:** Log on to DB2 using AES encryption for both the user ID and password.

Database User ID/Database Password

This ID is required. It is for use by CES to run the applications.

This ID will be used to create the CES tables, indexes and views when the database administration ID below, is not specified. To create the objects, DB2 will require that the ID has the following minimum DB2 authorizations:

```
GRANT USE OF BUFFERPOOL "default-bufferpool-for-user-LOB-data"
TO "Database user ID";

GRANT USE OF STOGROUP "user-specified-storage-group(see database create)"
TO "Database user ID";

GRANT DBADM ON DATABASE "user-specified-database-name" TO "database user
ID";

GRANT SELECT ON TABLE "SYSIBM"."SYSSEQUENCES" TO "Database user ID";

GRANT SELECT ON TABLE "SYSIBM"."SYSDATABASE" TO "Database user ID";

GRANT SELECT ON TABLE "SYSIBM"."SYSTABLESPACE" TO "Database user ID";
```

Note: If the Schema Name is something other than the Database user ID, then the “*Schema*” should be set up as a secondary authorization ID to the “*Database user ID*”.

Secondary Authorization ID

When specified, this ID will be used in a 'SET CURRENT SQLID' statement prior to any execution of DDL. It is used when the Database user ID and/or Database administrator ID does not have the privileges to create the CES tables, indexes and views. The ID must have the minimum DB2 authorizations, outlined under the Database user ID and Database administrator ID options.

Database Administrator ID/Database Administrator Password

This ID is optional. When specified, it is used to create the CES tables, indexes, and views. This ID and password may be removed after the installation of CES is complete, by accessing the installation panel and clearing the data.

An ID with the following *minimum* DB2 authorizations or SYSADM authorization is required:

```
GRANT USE OF BUFFERPOOL "default-bufferpool-for-user-LOB-data"
TO "Database administrator ID";

GRANT USE OF STOGROUP "user-specified-storage-group(see database create)"
TO "Database administrator ID";

GRANT DBADM ON DATABASE "user-specified-database-name"
TO "database administrator ID";

GRANT SELECT ON TABLE "SYSIBM"."SYSSEQUENCES" TO "Database administrator
ID";

GRANT SELECT ON TABLE "SYSIBM"."SYSDATABASE" TO "Database administrator
ID";

GRANT SELECT ON TABLE "SYSIBM"."SYSTABLESPACE" TO "Database administrator
ID";
```

Sample Create Database, Tablespace, and Grant DDL

```
SET CURRENT RULES = 'STD';

CREATE DATABASE "user-specified-database-name"
    BUFFERPOOL user-specified-32k-bufferpool-id
    INDEXBP user-specified-bufferpool
    CCSID EBCDIC STOGROUP "user-specified-storage-group";

CREATE TABLESPACE "user-specified-tablespace-name"
    IN "user-specified-database-name"
    USING STOGROUP "user-specified-storage-group" PRIQTY -1 SECQTY -1
    FREEPAGE 0 PCTFREE 5
    LOCKSIZE ANY CLOSE YES SEGSIZE 8;

GRANT the following permissions to the ID being used to create the CES
tables, indexes and views.

-Either the "Database user ID" or the "Database administrator ID".
```

-Not necessary if ID is a SYSADM.

```
GRANT USE OF BUFFERPOOL "default-bufferpool-for-user-LOB-data" TO "Database user ID/Database administrator ID";
```

```
GRANT USE OF STOGROUP "user-specified-storage-group(see database create)" TO "Database user ID/Database administrator ID";
```

```
GRANT DBADM ON DATABASE "user-specified-database-name" TO " Database user ID/Database administrator ID";
```

Note: If you are a CES user migrating from 05.00.02 or later, you may need to GRANT DROPIN authorization on the Schema, if the Database user ID and/or the Database administrator ID has changed since the original installation of 05.00.02.

DB2 for Linux, UNIX, and Windows

Compuware requires a Unicode code page. DB2 for Linux, UNIX and Windows JDBC URLs use the database name. There is no location.

- The IBM Data Server DB2 Type 4 Driver for JDBC and SQLJ must be installed for that DB2 instance.
- You must supply the directory containing the driver (db2jcc.jar) and license file (db2jcc_license_cu.jar or db2jcc_license_cisuz.jar) during the CES database installation process.
- You must know the DNS name or IP address of your DB2 server.
- You must know the port on which the DB2 instance is listening.
- Create a database for CES.
 - The table space associated with the database must be created in a 32K BUFFERPOOL.
- You need an authorization ID and password for use by the CES application.
- This authorization ID needs one of the following sets of privileges:
 - CREATETAB authority for the database; USE privilege for its table spaces
 - DBADM authority for the database
 - SYSADM authority

Note: Be sure the Data Server DB2 Type 4 Driver for JDBC and SQLJ files can be read by the CES installation program from the server on which it will run.

Database Server

This is the DNS name or the IP address of the server on which DB2 for Linux, UNIX, and Windows is installed.

Port

This is the port on which this database is listening.

Database Name

This is the name of the database you wish to use. This must be created in advance. CES will not create the database programmatically.

Note: The table space associated with the database must be created with a 32K BUFFERPOOL.

Schema

This is the schema you would like to associate the data objects with. This will get created if it does not already exist.

JDBC Driver Path

The IBM Data Server DB2 Driver for JDBC and SQLJ must be installed for that DB2 subsystem. Be sure that the driver files can be read by the CES installation program running on your system.

Database User ID

This ID is required. If the Database administrator ID is not specified, then this ID will be used to create the tables, indexes, and views used by CES. Otherwise, the ID is for use by the CES application. The ID must have one of the following privileges:

- CREATETAB authority for the database; USE privilege for its table spaces
- DBADM authority for the database
- SYSADM authority

Database Password

This is the user's password associated with the database.

Database Administrator ID

This is the Administrator ID associated with this database. When specified, it will only be used to create the tables, indexes, and views used by CES. This is an optional field and only required if the Database User ID does not have the following roles:

- CREATETAB authority for the database; USE privilege for its table spaces
- DBADM authority for the database
- SYSADM authority

Database Administrator Password

This is the password associated with the Database Administrator ID.

Microsoft SQL Server

Observe the following when preparing a Microsoft SQL Server database:

- You must know either the DNS name or the IP address of the server on which Microsoft SQL Server is installed.
- You must know either the statically assigned port number or the instance name (dynamically assigned port) for the Microsoft SQL Server instance.
 - For the instance name option, the Microsoft SQL Server Browser Service must be running on that server.
- Select a name for the database.
 - Limit this name to alphabetic, numeric and underscore (_) characters
 - Strobe does not support delimited identifiers
- Identify or create a schema name to be used.

- Microsoft recommends that you back up the master database before creating a new database.

Note: Since CES connects through JDBC, Microsoft SQL Server authentication must be used.

Database Server

This is the DNS name or the IP address of the server on which Microsoft SQL Server is installed.

Port

This is the statically assigned port number or the instance name (dynamically assigned port).

Instance Name

This is the named instance of SQL Server. If your Microsoft SQL Server database uses a port, then you don't need this.

Database Name

This is the name of the database you wish to use. This must be created in advance. CES will not create the database programmatically.

Schema

This is the schema you would like to associate the data objects with.

Database User ID

This ID is required. If the Database administrator ID is not specified, then this ID will be used to create tables, indexes, and views used by CES. Otherwise, the ID is for use by the CES application. The ID must have the following privilege:

- SYSADM authority

Database Password

This is the user's password associated with the database.

Database Administrator ID

This is the Administrator ID associated with this database. This is an optional field and only required if the Database User ID does not have the following role:

- sysadmin

Database Administrator Password

This is the Database Administrator password. When specified, it will only be used to create the tables, indexes, and views used by CES. This is only required if configuring your database with an administrator's ID.

Oracle

For an Oracle Database, CES uses national character datatypes. Using a database with a Unicode character set is recommended, but not required.

You must create an Oracle database before the CES installation.

CES uses the JDBC Thin (type 4) driver with Thin-style server name syntax for its database URLs. You must know your database's service name for this syntax.

You must create a database user ID and password before the CES installation for database authentication. The Oracle CREATE USER command automatically creates a schema with the same name. CES will create all of its objects in this schema.

Before installing CES:

- An Oracle Database instance must be installed and running on a server.
- You must know either the DNS name or the IP address of the server on which the Oracle database is installed.
- You must know the port on which Oracle is listening.
- You need a database for CES and you must know its service name.
- You need a user ID and password within that database for use by the CES application with at least the following privileges:
 - CREATE SESSION system privilege
 - CREATE TABLE or CREATE ANY TABLE system privilege
 - CREATE VIEW or CREATE ANY VIEW system privilege
 - Space quota on the database table spaces or the UNLIMITED TABLESPACE system privilege
- Your Oracle DBA must change the default value of the *open_cursors* parameter to at least 400 to avoid the “Maximum open cursors exceeded” error message.

Database Server

This is the DNS name or the IP address of the server on which Oracle is installed.

Port

This is the port on which this database is listening.

Database Name

This is the name of the database you wish to use. This must be created in advance. CES will not create the database programmatically.

Schema

This will be the same as the name used for the CREATE USER command, this must be created prior to configuring the CES database.

Database User ID

This ID is required. If the Database administrator ID is not specified, then this ID will be used to the create tables, indexes, and views used by CES. Otherwise, the ID is for use by the CES application. The ID must have the following privileges:

- CREATE SESSION system privilege

- CREATE TABLE or CREATE ANY TABLE system privilege
- CREATE VIEW or CREATE ANY VIEW system privilege
- Space quota on the database table spaces or the UNLIMITED TABLESPACE system privilege

Database Password

This is the user's password associated with the database.

Database Administrator ID

This is the Administrator ID associated with this database. This is an optional field and only required if the Database User ID does *not* have the following roles:

- CREATE SESSION system privilege
- CREATE TABLE or CREATE ANY TABLE system privilege
- CREATE VIEW or CREATE ANY VIEW system privilege
- Space quota on the database table spaces or the UNLIMITED TABLESPACE system privilege.

Database Administrator Password

This is the Database Administrator password. This is only required if configuring your database with an administrator's ID.