Working with Software AG Designer

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About This Guide

Software AG Designer enables you to create and maintain a wide number of applications, services, tasks, and other components to implement and execute your solutions in the webMethods product suite. When you install a Designer feature, the online help for that feature appears in the Designer Guides node of the Eclipse Help table of contents. Expand this node to view the available help sets.

If a feature is not installed, there will be no help set available for it. However, you can view PDF versions of all Designer features on the Software AG Documentation website.

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Narrowfont	Identifies service names and locations in the format *folder.subfolder.service*, APIs, Java classes, methods, properties.
Italic	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
		Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the	symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Product Documentation

You can find the product documentation on our documentation website at https://documentation.softwareag.com.

In addition, you can also access the cloud product documentation via https://www.softwareag.cloud. Navigate to the desired product and then, depending on your solution, go to "Developer Center", "User Center" or "Documentation".

Product Training

You can find helpful product training material on our Learning Portal at https://knowledge.softwareag.com.

Tech Community

You can collaborate with Software AG experts on our Tech Community website at https://techcommunity.softwareag.com. From here you can, for example:

- Browse through our vast knowledge base.

- Ask questions and find answers in our discussion forums.

- Get the latest Software AG news and announcements.

- Explore our communities.

- Go to our public GitHub and Docker repositories at https://github.com/softwareag and https://hub.docker.com/publishers/softwareag and discover additional Software AG resources.

Product Support

Support for Software AG products is provided to licensed customers via our Empower Portal at https://empower.softwareag.com. Many services on this portal require that you have an account. If you do not yet have one, you can request it at https://empower.softwareag.com/register. Once you have an account, you can, for example:

- Download products, updates and fixes.

- Search the Knowledge Center for technical information and tips.

- Subscribe to early warnings and critical alerts.

- Open and update support incidents.

- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

1 Tips for Working with Software AG Designer

The following topics provide information on how to work with various aspects of your Software AG Designer installation:

Managing Designer User Configuration

Software AG Designer is, by default, configured to support a single user with full read/write permission to the Eclipse installation area.

The following three locations in the Eclipse installation are important and must be considered when you configure Software AG Designer.

- The *install area*, which is the location where the Eclipse Platform is installed. The default location is `Software AG_directory \Designer\eclipse`.

- The *configuration area*, which is the location where Eclipse stores essential runtime metadata and cached data in general. The default location is `Software AG_directory \Designer\eclipse\configuration`.

- The *instance area*, which is also known as the workspace. The default location is `<user-home-dir>\workspace<product-version>`.

These default locations might vary if,

- The user does not have full read/write permission to the *configuration area*.

- The Designer installation is shared by multiple users.

During installation, Designer/Eclipse creates a configuration directory within the Eclipse installation. Each time Designer/Eclipse starts, it verifies that the configuration directory is writable. If it is not writable, by default, Designer/Eclipse creates a private configuration folder in the user home directory. The size of the configuration area varies depending on the features installed. The default location for a private configuration area is:

`<user-home-dir>/.eclipse/<product-id>_<product-version>_<hashcode>_<os-ws-arch>/configuration`

The user home directory is determined by the user.home Java system property. The product id and version are obtained from the product marker file .eclipseproduct under the Eclipse install.

A non-default configuration area can be defined by setting the osgi.configuration.area system property. This property can be set by the end user when starting Designer from a shortcut or, from the command line. It is convenient to set the property either in the launcher.ini file or in the config.ini file at the base configuration location.

In most cases, there is no need to change the default behavior. However, after installing Software AG Designer in a Windows environment, you may find that attempts to start Designer from a shortcut or from the command line result in an "access denied" error. In these cases, Eclipse has failed to determine that some files in the configuration area are not writable.

To resolve these issues, use any one of the following approaches:

■ Define a non-default configuration area by setting the osgi.configuration.area system property. This is the preferred approach.

■ If you have administrator privileges, change the access rights to the configuration area.

■ If you have administrator privileges, when starting Designer from a shortcut, right-click the shortcut and select **Run as administrator**.

If you want the Designer installation to be shared by multiple users, ensure that none of the users have write privileges to the shared configuration area. In this case, set the osgi.configuration.area system property and restrict access to the configuration area.

For example, define the configuration area in the config.ini file by adding the system property as follows, `osgi.configuration.area=$user.home$/.eclipse/Designer_12345`. Define the configuration area in the shortcut or the command line, by adding the following Java option: `-vmargs -Dosgi.configuration.area=$user.home$/.eclipse/Designer_12345`

Note:
When Designer/Eclipse starts, it checks the shared configuration area for changes. Migration Wizard prompts you to reapply the changes made to the private configuration area.

For detailed information about the Eclipse configuration directory and runtime options, refer to the Eclipse documentation at:

■ http://help.eclipse.org/luna/topic/org.eclipse.platform.doc.isv/reference/misc/multi_user_installs.html

■ http://help.eclipse.org/luna/topic/org.eclipse.platform.doc.isv/reference/misc/runtime-options.html

Changing the JRE or JDK Used by Designer

By default, Software AG Designer uses the JDK that the Software AG Installer installs as described in the PDF publication *Installing Software AG Products*. You can modify the Designer configuration to use a different JRE or JDK. If you want to switch back to the JDK installed by the Software AG Installer, it is located in the *Software AG_directory* \jvm directory.

Important:
If you switch to a non-default JRE or JDK, apply maintenance updates from the appropriate vendor on a regular basis, as you would for any JREs and JDKs you install yourself.

> **Note:**
> Software AG tests products only with the JDKs installed by the Software AG Installer. If you
> change to a different JDK or JRE and encounter problems, Software AG may require you to
> reproduce the issues with the JDK that is installed by the Software AG Installer.

> **To change the Designer JRE or JDK**

1. Locate the following file in your Designer installation:

   Software AG_directory \Designer\eclipse\eclipse.ini

2. Open the file in a text editor.

3. Locate the -vm parameter and modify it to contain the directory path to the JRE or JDK you
   want to use.

4. Save the file and restart Designer.

Configuring the Secure Storage

Eclipse uses PBEWithSHA1AndDES as the default algorithm for encrypting the information in
the secure storage. This algorithm is considered to be vulnerable.

The secure storage is located in the user's home directory and applies to all Eclipse installations.
If you have used the secure storage with Eclipse or Software AG Designer, the secure storage file
is configured to use the default algorithm.

Software AG Designer is enhanced with PBEWithSHA1AndDESede as the preselected algorithm.
However, this algorithm applies only to the new storage files created with
PBEWithSHA1AndDESede algorithm.

To enable the PBEWithSHA1AndDESede algorithm, you must delete the old secure storage file.
You can find the secure storage settings at **Window >Preferences > General > Security > Secure
Storage > Contents**. The **Contents** tab displays the location of the secure storage file. Save a copy
of the old secure storage file. Delete the old secure storage settings and restart Software AG
Designer. The secure storage file is created when the first credentials are stored.

Secure Storage Runtime Options

Changing the location of secure storage

By default, secure storage is located in your home directory. For example, on Windows the default
location of the secure storage file resolves to C:\Users\<user_name>\.eclipse\
org.eclipse.equinox.security. Software AG Designer selects this location to allow multiple
Eclipse-based applications to share the same secure storage.

If you need to modify the location of the default secure storage, you can use the "-eclipse.keyring <file_path>" runtime option. The <file_path> is a path to the file which is used to persist the secure storage data.

For more information about the secure storage, see **Workbench User Guide > Reference > Secure Storage** in Software AG Designer help.
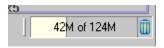
Password file

The password provider mechanism can be bypassed if you specify the "-eclipse.password <file_path>" runtime option. In this case, the contents of the file you specified as the argument will be used as a master password. While this option is valuable in some circumstances (such as headless applications), the protection of the password file becomes a consideration. The password file can be protected by the operating system access rights and/or by placing it on removable storage, such as a USB key.

Monitoring and Modifying Memory Usage

As you work with Software AG Designer, background processes are constantly writing to system memory. Some processes can consume a considerable amount of memory while they are running. This can cause Designer to slow down or become unresponsive if its memory requirements approach or exceed the configured maximum.

Eclipse provides a heap status monitor function, and by default, this feature is enabled in Designer. The monitor appears in the status bar at the lower right of Designer:

The display shows the amount of memory in use and the total amount available. If the display frequently shows values near the configured maximum, consider increasing the maximum. For more information, see "Adjusting the Designer Memory Settings" on page 13.

If the display has been disabled, you can re-enable it by clicking **Window > Preferences**, selecting the General entry, and selecting the **Show heap status** option.

For more information about memory allocation in Eclipse, see the topic "Running Eclipse" in the *Workbench User Guide* online help (**Workbench User Guide > Tasks > Running Eclipse**).

Adjusting the Designer Memory Settings

> **To adjust the Designer memory settings**

1. Locate the following file in your Designer installation:

    Software AG_directory \Designer\eclipse\eclipse.ini

2. Open the file in a text editor.

3. Locate the -Xmx parameter and modify it as required:

   ■ For systems with 1 GB or less of memory, set -Xmx=512m

   ■ For systems with more than 2 GB of memory, set -Xmx=2048m

4. Ensure that the value for -Xms is less than the value for -Xmx.

5. Save the file and restart Designer.

Verifying Java Byte Code

The Java class bytecode verification process helps you troubleshoot issues in code compiled by external compilers. This verification process is enabled by default. You can disable the Java class bytecode verification process in Designer by adding the parameter, -Xverify:none at the end of the *Software AG_directory*\Designer\eclipse\eclipse.ini file.

Important:
Disabling Java bytecode verification might decrease the Designer launch time by up to 40%. However, bytecode verification protects your application against malicious code, and identifies defects in code generated by external Java and non-Java frameworks. Disabling Java class bytecode verification process is recommended ONLY if you are using Designer in a stable, non-production environment.

Java Code Cache

Java uses its in-memory code cache to store native code generated for compiled methods. The default maximum size of this code cache is 240 MB, which is normally more than sufficient for Designer. The Java Runtime Environment indicates an overflow in the code cache with the following console message: CodeCache is full. Compiler has been disabled. A code cache overflow might result in serious performance degradation because the Java code is not compiled to native code. You can increase the maximum size of the cache code by adding the option, -XX:ReservedCodeCacheSize= *<newsize>* at the end of the *Software AG_directory*\Designer\eclipse\eclipse.ini file. For additional details, see the Java SE documentation available on the Oracle website.

Finding Installed Products, Versions, and Fixes

You can find the following information about the Software AG products installed with Software AG Designer:

■ Which products are installed

■ The version and fix level of a product

You can also view and copy information about the Software AG features installed including feature name, version, and ID.

For more information, see the following topics:

For technical details about Eclipse features, see the Features topic in the *Workbench User Guide* online help (**Workbench User Guide > Concepts > Features**).

Identifying Installed Products, Versions, and Fixes

You use the About Software AG Designer dialog box to find information about installed Software AG products, versions, and fixes.

In addition, the Welcome page provides a short description of each installed product as well as links to the Eclipse perspective associated with the product and the product documentation. The Welcome page opens the first time you start Designer. To view the Welcome page if it is closed, click **Help > Welcome**.

≫ **To find information about installed products, their versions, and applied fixes:**

1. In Designer: **Help > About Software AG Designer**.

2. The **Software AG** tab displays all installed Software AG products, their versions, and the latest fix levels, if a fix has been applied.

3. To view details about the Eclipse features and plug-ins associated with a product, click the product icon.

Viewing and Copying Information About Software AG Features

≫ **To view and copy information about the features provided by Software AG:**

1. In Designer, click either of the following:

   ■ **Window > Preferences > Software AG**.

   ■ **Help > About Software AG Designer > Software AG Preferences**.

   The Installed Software AG Features table displays all installed features, their versions, and IDs.

2. Select the feature or features you want to copy. Right-click the features and click **Copy**.

Using Designer with Software AG Runtime

You can install an instance of Software AG Runtime in your Software AG product directory with the Software AG Installer. This provides you with a convenient and integrated web server for testing the web projects you develop in Designer.

You can manage the Software AG Runtime instance using Designer Servers view. In this view, you can connect to an existing Software AG Runtime instance, check the server status, start it, stop it, and publish your projects to it.

You can determine the version of the installed Software AG Runtime by referring to the PDF publication *System Requirements for Software AG Products* for your version of Designer. This section explains how to add the Software AG Runtime instance and how to display it in Designer Servers view.

Defining a Software AG Runtime Entry in the Servers View

You can define a Software AG Runtime entry in the Servers view. When you select Software AG Runtime in the Servers view, the toolbar buttons and menu commands for starting, debugging, and stopping the server are enabled. For more information about starting, debugging, and stopping Software AG Runtime, see the PDF publication *Software AG Infrastructure Administrator's Guide*.

Note:
With Software AG Runtime, you can deploy only web projects that contain servlets or JSPs.

Before you begin, make sure that you have installed Software AG Runtime and Software AG Platform Manager using the Software AG Installer.

To define a Software AG Runtime instance

1. In the Servers view, right-click and click **New > Server**.

2. In the **Select the server type** list, expand the **Software AG** folder, and select **Software AG Runtime**.

3. Accept the default value of `localhost` for **Server's host name** and specify a name for the server in the **Server name** box.

4. Click **Next**.

5. Specify the *Software AG_directory* installation directory or type the URL for the Platform Manager to select an installed instance of Software AG Runtime. Do one of the following:

   - In the **Installation Directory** box, type or browse to the *Software AG_directory* , for example, C:\SoftwareAG.

   - In the **Platform Manager URL** box, type the URL of the Platform Manager.

6. Enter your user name and password to connect to the Platform Manager. Click **List Servers**.

7. In the **Servers** list, select one of the listed instances of Software AG Runtime.

8. Click **Finish**.

Adding the Software AG Runtime Environment

Using the **Preferences** page, you can add Software AG Runtime environment definitions.

Before you begin, make sure that you have installed Software AG Runtime and Software AG Platform Manager. If Software AG Runtime is not installed, you will not have it as an entry in the **Servers** list as described later. Use the Software AG Installer to install the server in your Software AG installation.

> **To add a Software AG Runtime environment**

1. In Designer, click **Window > Preferences**.

2. In the **Preferences** window, expand the **Server** node and select **Runtime Environments**.

3. Click **Add**.

4. In the **Select the type of runtime environment** list, expand the **Software AG** folder, select **Software AG Runtime** and click **Next**.

5. Specify the *Software AG_directory* installation directory or type the URL for the Platform Manager to select an installed instance of Software AG Runtime. Do one of the following:

   - In the **Installation Directory** box, type or browse to the *Software AG_directory* , for example, C:\SoftwareAG.

   - In the **Platform Manager URL** box, type the URL of the Platform Manager.

6. Enter your user name and password to connect to the Platform Manager. Click **List Servers**.

7. In the **Servers** list, select one of the listed instances of Software AG Runtime.

8. Click **Finish**.

Enabling Designer Console Output on Windows

At times, users of Software AG Designer might want to view Designer output messages in a Windows Command Prompt session. This mechanism is disabled by default. If you want to use a Windows Command Prompt session to monitor Designer activity and error messages, you can implement any of the following solutions:

- Modify Designer configuration. This will enable output to a Command Prompt session whenever you start Designer.

- Start Designer from the command line with extra parameters. In this case, output is enabled only during the current session.

■ Modify Designer shortcut. This will enable output only during the session you start from the shortcut.

For additional information about configuring the Designer startup, refer to the Eclipse documentation at:

http://help.eclipse.org/luna/topic/org.eclipse.platform.doc.isv/reference/misc/runtime-options.html

Modifying the Designer Configuration to Enable Console Output

You can modify the Designer configuration to enable output of Designer activity and error messages to a Command Prompt session on Windows. After you modify the Designer configuration, the Designer output will be available every time you start Designer.

⟩ **To modify the Designer configuration to enable console output**

1. Locate the following file in your Designer installation:

   Software AG_directory \Designer\eclipse\eclipse.ini.

2. Open the file in a text editor.

3. Locate the -vm parameter and do the following:

   a. Type -consoleLog in a new line above the -vm parameter.

   b. Replace javaw.exe with java.exe at the end of the -vm parameter definition.

4. Save the file and start Designer.

Adding Parameters to the Command Line to Enable Designer Console Output

You can add parameters when starting Designer from the command line to enable output of Designer activity and error messages to a Command Prompt session on Windows. In this case, output is enabled only during the current session.

⟩ **To enable console output when starting Designer from a Command Prompt window**

1. Open a Command Prompt window in this directory:

   Software AG_directory \Designer\eclipse

2. Type the following command to start Designer with the console output enabled:

   ```
   eclipse -consoleLog -vm <path to java.exe>
   ```

Modifying a Designer Shortcut to Enable Console Output

You can add parameters to a Windows shortcut to enable output of Designer activity and error messages to a Command Prompt session on Windows when you start Designer from the shortcut. In this case, output is enabled only during the session started from the modified shortcut.

≫ **To modify a Designer shortcut to enable console output**

1. Locate the Designer shortcut you want to modify, for example:

   Start > All Programs > *Software AG_directory* **> Tools > Software AG Designer 9.8**

2. Copy the shortcut and paste the copied shortcut onto your desktop.

3. Right-click the copied shortcut and click **Properties > Shortcut**.

4. In the **Target** field, add the following parameters to the end of the Target definition:

   ```
   –consoleLog –vm <path to java.exe>
   ```

5. Click **OK** to save the new Target definition.

6. Rename the copied shortcut as desired.

Configuring SSL Connections in Designer

Use the following procedure to configure a Secure Sockets Layer (SSL) connection in Software AG Designer.

For more information about Java SSL configurations, see the JSSE Reference Guide in the Java SE documentation.

≫ **To configure an SSL connection**

1. Locate the following file in your Designer installation:

   Software AG_directory \Designer\eclipse\configuration\config.ini

2. Open the file in a text editor.

3. Add the following lines to the file:

   ■ `javax.net.ssl.trustStore=`*truststore file path*

   where *truststore file path* is the path to the server truststore in your file system. For example:

   ```
   javax.net.ssl.trustStore=C\:\\keystore\\localhost.jks
   ```

> **Note:**
> Be sure to use the correct separators when specifying the path to the truststore file. For example: `C\:\\`

- `javax.net.ssl.trustStoreType=`*truststore file type*

  where *truststore file type* is the type of truststore file that the server supports. For example:

  ```
  javax.net.ssl.trustStoreType=JKS
  ```

4. Save the file and restart Designer.

Enabling Automatic Updates

The automatic updates are disabled by default, as Designer might not work on the newer Eclipse updates and also the updates are delivered through Update Manager and not through update sites.

> **To enable automatic updates**

1. In Designer, click **Window > Preferences**.

2. In the Preferences window, click **Install/Update > Automatic Updates**.

3. In the **Automatic Updates** section, select **Automatically find new updates and notify me**.

4. Select the appropriate options in the **Update schedule**, **Download options**, and **When updates are found** sections.

5. Click **Apply**.

6. Click **OK**.

Enabling Eclipse Update Sites

The Eclipse Update sites are disabled by default, as Designer might not work on the newer Eclipse updates.

> **To enable Eclipse update sites**

1. In Designer, click **Window > Preferences**.

2. In the Preferences window, click **Install/Update > Available Software Sites**.

3. In the **Available Software Sites** panel, select all the applications from Eclipse sites.

4. Click **OK**.

Enabling Error Reporting Notifications

The error reporting notifications as provided by Eclipse 4.19 are disabled by default. If you encounter issues with Designer, see "Online Information" section or contact Software AG support.

> **To enable error reporting notifications**

1. In Designer, click **Window > Preferences**.

2. In the Preferences window, click **General > Error Reporting**.

3. In the **Error Reporting** section, click **Notifications**.

4. In the **Notifications** section, select **Enable notifications**.

5. Click **Apply**.

6. Click **OK**.

Enabling Preference Recorder

Eclipse Oomph provides a tool to explore all the available preferences in Designer.

With Oomph installed in Designer, the preference choices are recorded as Oomph tasks that are applied to every open workspace opened in Designer.

The **Preference Recorder** feature is disabled by default.

> **To enable Preference recorder**

1. In Designer, click **Window > Preferences**.

2. In the Preferences window, click **Oomph > Preference Recorder**.

3. In the **Preference Recorder**, select **Enabled**.

4. Click **Apply**.

5. Click **OK**.

Excluding Derived Resources

The **Automatically ignore derived resources by adding them to .gitignore** check box in Git preferences is cleared by default so that the derived resources such as class files are automatically available to be included during a Git commit.

≫ **To exclude the derived resources**

1. In Designer, click **Window > Preferences**.

2. In the Preferences window, click **Version Control (Team) > Git > Projects**.

3. Select the **Automatically ignore derived resources by adding them to .gitignore** check box.

4. Click **Apply and Close**.