

# **TIBCO ActiveMatrix BusinessWorks™ ActiveAspects Plug-in**

## **Installation and Configuration**

*Software Release 1.2  
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# Preface



**This software may be available on multiple operating systems. However, not all operating system platforms for a specific software version are released at the same time. Please see the readme file for the availability of this software version on a specific operating system platform.**

TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in (BWAA) extends the capabilities of TIBCO ActiveMatrix BusinessWorks by adding an Aspect Oriented Programming capability. This allows you to modularize and inject crosscutting concerns to enhance your ActiveMatrix BusinessWorks processes at deploy time while keeping the original ActiveMatrix BusinessWorks processes intact. It exposes a JAVA API to build jar files that can alter the execution of a BusinessWorks application.

This preface gives some information on the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in documentation set, related documentation, and on the conventions used in TIBCO manuals.

## Topics

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- [Changes from the Previous Release of this Guide, page vi](#)
- [Related Documentation, page vii](#)
- [Typographical Conventions, page ix](#)
- [Connecting with TIBCO Resources, page xi](#)

## Changes from the Previous Release of this Guide

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This section itemizes the major changes from the previous release of this guide.

- Updated the screenshot for the Custom Uninstallation ([Figure 1](#)).

## Related Documentation

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This section lists documentation resources you may find useful. The documentation road map shows the relationships between the books and online references in this product's documentation set.

### TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in Documentation

The following documents form the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in documentation set:

- *TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in Installation and Configuration* Read this manual for information on product installation.
- *TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in User's Guide* Read this manual to learn how to develop, build, and deploy aspects in ActiveMatrix BusinessWorks.
- *TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in API Reference* This manual gives information about the JAVA API for creating Advice Implementations in TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in.
- *TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in Getting Started* Read this manual for detailed information about creating and testing a ActiveMatrix BusinessWorks project using TIBCO Designer, setting development environment in Eclipse, advice development in Eclipse, and the expected final output.
- *TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in Release Notes* Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

### Other TIBCO Product Documentation

TIBCO ActiveMatrix BusinessWorks is a pre-requisite for TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in and is used with other products. You may find it useful to read the documentation for the following TIBCO products:

#### TIBCO ActiveMatrix BusinessWorks

- *TIBCO ActiveMatrix BusinessWorks Concepts* Read this manual before reading any other manual in the documentation set. This manual describes terminology and concepts of TIBCO ActiveMatrix BusinessWorks, and the

other manuals in the documentation set assume you are familiar with the information in this manual.

- *TIBCO ActiveMatrix BusinessWorks Getting Started* This manual steps you through a very simple example of designing, deploying, and monitoring a ActiveMatrix BusinessWorks process.
- *ActiveMatrix BusinessWorks Process Design Guide* This manual describes how to create, edit, and test business processes using TIBCO ActiveMatrix BusinessWorks.
- *ActiveMatrix BusinessWorks Palette Reference* This manual describes each of the palettes available in TIBCO ActiveMatrix BusinessWorks.
- *TIBCO ActiveMatrix BusinessWorks Administration* This manual describes how to use TIBCO Administrator to deploy, manage, and monitor TIBCO ActiveMatrix BusinessWorks processes.
- *TIBCO ActiveMatrix BusinessWorks Installation* Read this manual for information on installing one or more components of ActiveMatrix BusinessWorks and setting up a ActiveMatrix BusinessWorks domain.
- *TIBCO ActiveMatrix BusinessWorks Error Codes* This manual describes errors returned by TIBCO ActiveMatrix BusinessWorks.
- *TIBCO ActiveMatrix BusinessWorks Release Notes* Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release.

## Other TIBCO Products

- TIBCO Designer™ software: TIBCO Designer is an easy to use graphical user interface for design-time configuration of TIBCO applications. TIBCO Designer includes online help for each palette.
- TIBCO Administrator™ software: TIBCO Administrator is the monitoring and managing interface for new-generation TIBCO products such as TIBCO ActiveMatrix BusinessWorks.
- TIBCO Adapter software
- Third-Party Documentation






## Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
<i>TIBCO_HOME</i>	<p>Many TIBCO products must be installed within the same home directory. This directory is referenced in documentation as <i>TIBCO_HOME</i>. The value of <i>TIBCO_HOME</i> depends on the operating system. For example, on Windows systems, the default value is C:\tibco\bw\plugins.</p> <p>Incompatible products and multiple instances of the same product can be installed into different installation environments.</p>
<i>BW_HOME</i>	<p>TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in installs into the BW directory within <i>TIBCO_HOME</i>. This directory is referenced in documentation as <i>BW_HOME</i>. The value of <i>BW_HOME</i> depends on the operating system. For example on Windows systems, the default value is C:\tibco\bw\5.9.</p>
code font	<p>Code font identifies commands, code examples, filenames, pathnames, and output displayed in a command window. For example:</p> <p>Use MyCommand to start the foo process.</p>
<b>bold code font</b>	<p>Bold code font is used in the following ways:</p> <ul style="list-style-type: none"> <li>• In procedures, to indicate what a user types. For example: Type <b>admin</b>.</li> <li>• In large code samples, to indicate the parts of the sample that are of particular interest.</li> <li>• In command syntax, to indicate the default parameter for a command. For example, if no parameter is specified, MyCommand is enabled: MyCommand [<b>enable</b>   disable]</li> </ul>
<i>italic font</i>	<p>Italic font is used in the following ways:</p> <ul style="list-style-type: none"> <li>• To indicate a document title. For example: See <i>TIBCO ActiveMatrix BusinessWorks Concepts</i>.</li> <li>• To introduce new terms For example: A portal page may contain several portlets. <i>Portlets</i> are mini-applications that run in a portal.</li> <li>• To indicate a variable in a command or code syntax that you must replace. For example: MyCommand <i>PathName</i></li> </ul>

Table 1 General Typographical Conventions (Cont'd)

Convention	Use
Key combinations	<p>Key name separated by a plus sign indicate keys pressed simultaneously. For example: Ctrl+C.</p> <p>Key names separated by a comma and space indicate keys pressed one after the other. For example: Esc, Ctrl+Q.</p>
	The note icon indicates information that is of special interest or importance, for example, an additional action required only in certain circumstances.
	The tip icon indicates an idea that could be useful, for example, a way to apply the information provided in the current section to achieve a specific result.
	The warning icon indicates the potential for a damaging situation, for example, data loss or corruption if certain steps are taken or not taken.

## Connecting with TIBCO Resources

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### How to Join TIBCOCommunity

TIBCOCommunity is an online destination for TIBCO customers, partners, and resident experts—a place to share and access the collective experience of the TIBCO community. TIBCOCommunity offers forums, blogs, and access to a variety of resources. To register, go to <http://www.tibcommunity.com>.

### How to Access All TIBCO Documentation

After you join TIBCOCommunity, you can access the documentation for all supported product versions here:

<http://docs.tibco.com/TibcoDoc>

### How to Contact TIBCO Support

For comments or problems with this manual or the software it addresses, please contact TIBCO Support as follows.

- For an overview of TIBCO Support, and information about getting started with TIBCO Support, visit this site:

<http://www.tibco.com/services/support>

- If you already have a valid maintenance or support contract, visit this site:

<https://support.tibco.com>

Entry to this site requires a user name and password. If you do not have a user name, you can request one.



# Installing TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in

This document explains how to install TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in on Microsoft Windows and UNIX systems.

## Topics

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- [Installation, page 2](#)
- [Installation Registry, page 5](#)
- [Required and Optional TIBCO Products, page 7](#)
- [Installing on Microsoft Windows, page 9](#)
- [Installation on UNIX Systems, page 12](#)
- [Installation FAQs and Troubleshooting, page 15](#)

## Installation

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### Installer Overview

Universal installer enables the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in to be installed in multiple `TIBCO_HOME`s. During installation, you can select the existing `TIBCO_HOME` which may have other products installed including TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in.

The installer is responsible to create and setup directories under `BW_HOME/plugins`. All the files under `BW_HOME/plugins` are not modified by any other component except the installer.

### Installation Types

The installer allows you to run in different modes. Each mode is supported on all platforms.

- GUI mode
- Console mode
- Silent mode

#### GUI Mode

In GUI mode, the installer presents panels that allow you to make choices about product selection, product location, and so on. When you invoke the installer by double-clicking on the icon, GUI mode is used.

#### Console Mode

Console mode allows you to run the installer from the command prompt or terminal window. This is useful if your machine does not have a Windows environment.

#### Silent Mode

Silent mode either installs using default settings or uses a response file that was saved during an earlier installation. Silent mode installs without prompting you for information.

- If no response file has been recorded earlier and you invoke the installer with the `-silent` argument, the default installation parameters are used.

- If a response file exists, and the installer is started with `-options <responseFileName>` as an argument, the installer uses the values specified by the user when the response file was generated.

## Uninstalling TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in

The uninstaller removes all files that were installed as a part of TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in installation, even if those files were modified by the user or the application. Files that were created by the user are not deleted or modified.

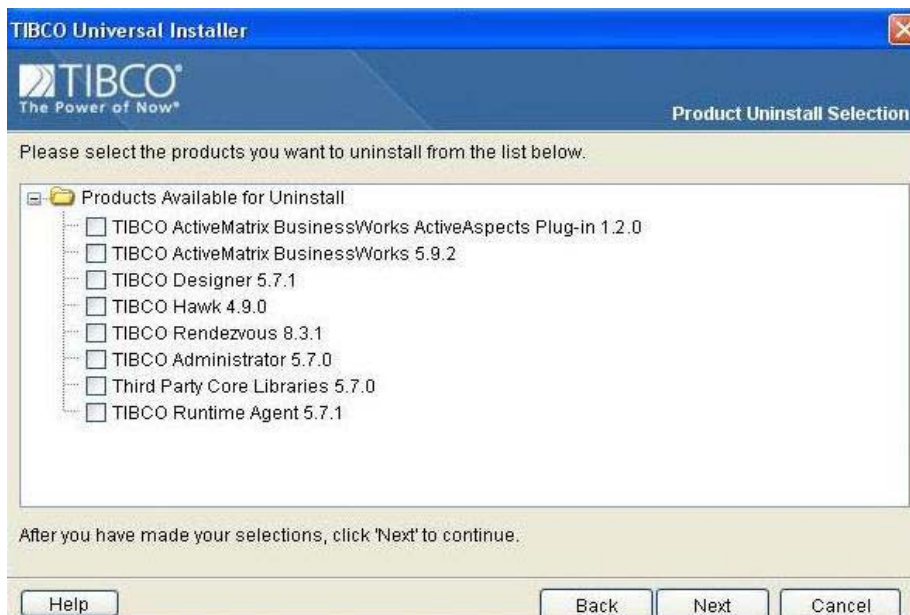


Make sure you have a backup of user-modified files before proceeding with the uninstallation.

### Microsoft Windows

Navigate to the `_uninst` directory located in the `TIBCO_HOME` directory and invoke the `universal_uninstall.exe` program. To selectively uninstall the products, select Custom Uninstall. Typical Uninstall removes all products from `TIBCO_HOME`.

Figure 1 Custom Uninstall



## **UNIX Systems**

Navigate to the `_uninst` directory located in the `TIBCO_HOME` directory and invoke the `universal_uninstall.bin` program.



## Installation Registry

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The installer maintains an installation registry. The registry location depends on the platform. The files have vpd as a prefix, which stands for Vital Product Database.



Do not edit, modify, rename, move, or remove any of the registry vpd files.

### Installer Disk Space Requirements in Temporary Area

The installer launcher first extracts a Java Virtual Machine (JVM) in a temporary directory and uses this JVM to launch itself. The size of the extracted JVM differs from platform to platform.

On UNIX platforms, the following disk space is required in the temporary area:

- On Solaris, 80 MB of free disk space in /var/tmp
- On HP-UX, 90 MB of free disk space in /var/tmp
- On AIX, 80 MB of free disk space in /tmp
- On Linux, 80 MB of free disk space in /tmp

If your system does not have sufficient free disk space in the above temporary area, you can still run the installer with a different temporary area using the following option when starting the installer:

```
<install_package_name>.bin -is:tempdir /new_tmp
```

where /new\_tmp has sufficient free disk space.

### Disk Space Requirement in User's Home Directory

When a regular (non-root) user installs a TIBCO product on UNIX platform, the installation registry (two vpd files) is maintained in the user's home directory. As more products are installed, entries are added into these vpd files.

The user's home directory must have the minimum 65 KB of free disk space.

## Installation History

The installer and uninstaller creates a file called \_env.xml in the same location where the installation registry is created. Each time an installation and uninstallation is performed, entries are appended to the file.

On Windows: %SystemRoot%\\_env.xml

On UNIX: `Users_Home_Directory/_env.xml`

The file `_env.xml` therefore contains the record of all installation and uninstallation activities of all products, features, and components.



Do not edit, modify, rename, move, or remove the `_env.xml` file.

## Required and Optional TIBCO Products

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Depending on the tasks you want to perform, you must install one or more TIBCO products.



Refer to the product readme to get the list of supported product versions.

### **TIBCO Rendezvous**

Required. TIBCO Rendezvous software uses messages to enable distributed application programs to communicate across a wide variety of hardware platforms and programming languages. TIBCO Rendezvous must be installed before you install TIBCO Runtime Agent.

### **TIBCO Runtime Agent**

Required. TIBCO Runtime Agent supplies a number of TIBCO and third-party libraries used by TIBCO ActiveMatrix BusinessWorks and other TIBCO products both at design-time and runtime.

You must install TIBCO Runtime Agent on each machine that hosts a TIBCO ActiveMatrix BusinessWorks process engine. TIBCO Runtime Agent must be installed before you install TIBCO ActiveMatrix BusinessWorks.

### **TIBCO ActiveMatrix BusinessWorks**

Required. TIBCO ActiveMatrix BusinessWorks must be installed before you install TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in.

### **TIBCO Designer**

Required. TIBCO Designer is an easy to use graphical user interface for design-time configuration of TIBCO ActiveMatrix BusinessWorks.

TIBCO Designer is installed as part of the TIBCO Runtime Agent installation.

### **TIBCO Administrator**

Required. TIBCO Administrator is available in two editions, Repository Edition and Enterprise Edition. The Enterprise Edition is required for TIBCO ActiveMatrix BusinessWorks. Administrator includes the following modules:

- **User Management.** Management of authentication, roles and users, that is, connecting roles (groups) and users to access control lists (ACLs). This includes security for deployed applications at runtime.
- **Resource Management.** Monitoring of machines and of all running applications in a TIBCO administration domain. Alerts can be created, for example, to notify an administrator if the number of processes or disk usage exceed a certain number.
- **Application Management.** Uploading of Enterprise Archive (EAR) files, creation, configuration, deployment, and monitoring of applications. This console is also used to start and stop applications.

TIBCO Administrator is available as a separate installation and can be installed after installing TIBCO ActiveMatrix BusinessWorks.

### **TIBCO Enterprise Message Service**

Optional. TIBCO Enterprise Message Service (EMS) allows you to send messages from your applications in a format that conforms to the Java Messaging Service (JMS) specification. It also provides a reliable delivery mode and a no-acknowledge acknowledgement mode.

TIBCO Enterprise Message Service is available as a separate installation and can be installed after TIBCO ActiveMatrix BusinessWorks is installed.

## Installing on Microsoft Windows

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Before installing the product, review the topics in this section to determine that your system meets the basic requirements and that you have the prerequisite software installed.

### Supported Operating Systems

Refer to the readme for the supported platforms and versions.

### Installation Prerequisites

The installer maintains an installation registry. The registry location depends on the platform. The files have vpd as a prefix, which stands for Vital Product Database. See [Disk Space Requirement in User's Home Directory on page 5](#) for additional disk space requirements.

Before you install TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in, you must install TIBCO ActiveMatrix BusinessWorks. If you select the Typical option during installation, the installer places all libraries and other products required by TIBCO ActiveMatrix BusinessWorks into the TIBCO\_HOME directory.

During installation, the installer checks for the availability of all dependent products in the target system. If any of the dependencies are not available, the installer immediately exits. Otherwise, installation proceeds.

### Disk Space and Memory

This section lists the minimum free disk space and memory required for each platform.

During installation, the entire package is extracted into a temporary directory, typically one of the following:

- *SystemDrive*: \Temp
- *SystemDrive*: \Documents & Settings\user\_name\Local Settings\Temp

Before actually installing the files, the installer calculates the disk space that the selected components will require in the installation directory. The installer will proceed only if sufficient free disk space is available in the installation directory.

If some of the required disk space is taken by another process during installation, the installer may fail and display a failure message.

### Temp Directory

At least 80 MB free space is required in the temp directory.

### Installer Account

You must have administrator privileges for the machine on which TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in is installed.

If you do not have administrator privileges, the installer exits. You must then log out of the system and log in as a user with the required privileges, or request your system administrator to assign the privileges to your account.

## Installing on Microsoft Windows

You can either download the product installation package or install the components from a CD. The installer prompts you to accept the license agreement, then to choose to perform a typical install or custom install.

- A typical install has minimal prompts and installs standard components in default locations.
- A custom install prompts you to choose which components of the product suite to install and installs only those components.

If you are installing for the first time, you can specify the installation directory where the products in this product suite will be installed. On Microsoft Windows, the default installation directory is `c:\tibco\bw`.

Use one of the following modes to install TIBCO ActiveMatrix BusinessWorks ActiveAspects Plugin.

### GUI Mode

GUI mode performs the installation in an interactive graphical interface. The installer prompts you for values specific to your environment.

To install, double-click the icon named `TIBCOUniversalInstaller.exe`.

### Console Mode

Console mode allows you to install the software in a non-windows environment. The installer will prompt you for values.

To install from a Microsoft Windows command window, type:  
`TIBCOUniversalInstaller -console`

When running in console mode, you can move through the installation process as described next:

```
Enter Key = Moves forward in the installer
2 = Returns to the previous screen
3 = Cancels the Wizard and exits the installation or uninstallation
4 = Redisplays the current screen
```

## Silent Mode

The Silent mode allows you to install the product with default values. The `TIBCOUniversalInstaller-bwaa_<version>.silent` file is packaged in the directory that contains the universal installer. You must edit the file with information for your environment before launching the silent installation. The file includes comments that describe the installation properties you can set.

While you can use the `TIBCOUniversalInstaller-bwaa_<version>.silent` file, it is a good practice to copy the file to a different name and edit that file for the silent installation.

If errors occur during installation, they will be listed in the installation log file (see the *User\_Home/.TIBCO* directory).

1. Open the physical media or download the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in product package.
2. Extract the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in product archive file to a temporary directory.
3. Using a console window, navigate to the temporary directory that contains the universal installer.
4. Copy the `TIBCOUniversalInstaller-bwaa_<version>.silent` file and rename the copy.
5. Using a text editor, open the copied file and update the install location, and features to install.
6. Run the installer using this command line:  
`TIBCOUniversalInstaller-bwaa_<version>.exe -silent`



If `.silent` file is not named `TIBCOUniversalInstaller.silent`, the command to call silent installation is `TIBCOUniversalInstaller.exe -silent -V responseFile="<pathAndFilename>"` where `<pathAndFilename>` is the absolute directory path with the `.silent` file name.

A line similar to the following is written to the installer log file when installation completes:

```
... Install, com.tibco.installer.util.TIBCOInstaller,
dbg.Debug, Executing Event::OnEndInstall
```

## Installation on UNIX Systems

---

### Supported Operation Systems

Refer to the readme for the supported platforms and versions.

### Installation Prerequisites

See [Installer Disk Space Requirements in Temporary Area on page 5](#) for additional disk space requirements.

Before you install TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in, you must install TIBCO Runtime Agent and then TIBCO ActiveMatrix BusinessWorks. If you select the Typical option during installation, the installer places all libraries and other products required by TIBCO ActiveMatrix BusinessWorks into the `TIBCO_HOME` directory.

During installation, the installer checks for the availability of all dependent products in the target system. If any of the dependencies are not available, the installer immediately exits. Otherwise installation proceeds.

### Installer Account

TIBCO 5.x products can be installed by a regular (non-root) user and super-user (root). Different users can install the same product at different locations.

Product dependencies at install time are resolved at user level through the installation registry maintained at user's home directory. See [Installation Registry on page 5](#) for more information.

### Windows Environment

A window environment such as CDE (that is, X Windows) is required to run the installer in GUI mode. It is not required for a console installation.

### Installing on UNIX

After unpacking the software and accepting the license agreement, you can choose to perform a typical install or custom install.

- A typical install has minimal prompts and installs standard components in default locations.



- A custom install prompts you to choose which pieces of the product suite to install and installs only those components.

If you are installing for the first time, you must specify the installation directory where the products in this product suite will be installed. The default installation directory depends on who performs the installation:

- For root users, the default installation directory is `/opt/tibco`.
- For non-root users, the default installation directory is `/<myhome>/tibco`, where `<myhome>` is the home directory of the user.
- For AIX platform, use a non-root user account.

Use one of the following modes to install the software. The examples assume you are installing the product on Solaris 2.7.

### GUI Mode

GUI Mode allows you input values in panels. Type the following in a terminal window:

```
TIBCOUniversalInstaller-bwaa_<version>-sol-sparc.bin
```

### Console Mode

Console mode allows you to install the software in a non-windows environment. The installer prompts you for values. Type the following in a terminal window:

```
TIBCOUniversalInstaller-bwaa_<version>-sol-sparc.bin
-is:javaconsole -console
```

When running in console mode, you can move through the installation process as described next:

```
Enter Key = Moves forward in the installer
2 = Returns to the previous screen
3 = Cancels the Wizard and exits the installation or uninstallation
4 = Redisplays the current screen
```

### Silent Mode

The following procedure explains how to install a TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in product in the silent mode. The `TIBCOUniversalInstaller-bwaa_<version>.silent` file is packaged in the directory that contains the universal installer.

While you can use the `TIBCOUniversalInstaller-bwaa_<version>.silent` file, it is good practice to copy the file to a different name and edit that file for the silent install.

If errors occur during installation, they will be listed in the installation log file (see the *User\_Home/.TIBCO* directory).

1. Open the physical media or download the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in product package.
2. Extract the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in product archive file to a temporary directory.
3. Using a console window, navigate to the temporary directory that contains the universal installer.
4. Copy the `TIBCOUniversalInstaller-bwaa_<version>.silent` file and rename the copy.
5. Using a text editor, open the copied file and update the install location, and features to install.
6. Run the installer using this command line:

```
TIBCOUniversalInstaller-bwaa_<version> -is:silent -silent
```

If you are using the `TIBCOUniversalInstaller.silent` file (rather than a copy), you need not supply the file name and can use this command line:

```
TIBCOUniversalInstaller-bwaa_<version> -silent
```

A line similar to the following is written to the installer log file when installation completes:

```
... Install, com.tibco.installer.util.TIBCOInstaller,
dbg.Debug, Executing Event:::OnEndInstall
```

## Installation FAQs and Troubleshooting

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This section lists some common errors along with their causes and solutions.

### Frequently Asked Questions

#### **Where is the installation log file located?**

Install and uninstall log files are created in the `System_home/.TIBCO` directory.

## Setting Development Environment in Eclipse

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This section explains how an Eclipse JAVA developer can develop an ActiveMatrix BusinessWorks Aspect and subsequently debug it remotely in Eclipse after deploying the aspect in an ActiveMatrix BusinessWorks Engine instance.

### Topics

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- [Product Libraries, page 17](#)
- [Aspect Development in Eclipse, page 18](#)
- [Using TIBCO Designer with TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in, page 23](#)

## Product Libraries

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The installation of TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in contains the following jars:

1. `poa-core.jar` and `poa-bwaa.jar` - This is the core runtime library of this product.
2. `poa-api.jar` - Contains the public API of this product.
3. `gxml.jar`  
`gxmlBridges.jar`  
`gxmlProcessors.jar`
4. `poa-samplesImpl.jar` and `poa-bwaa-samplesImpl-src.jar` - Contains all the advice implementations for the sample advices.
5. `bwaa-palette.jar` - Contains information about the BWAA palette.
6. `bwconfig-api.jar` - Contains all the interfaces to get activity configuration data.
7. `bwconfig-impl.jar` - Contains all the provider implementations to get read-only access to activity configuration data.

# Aspect Development in Eclipse

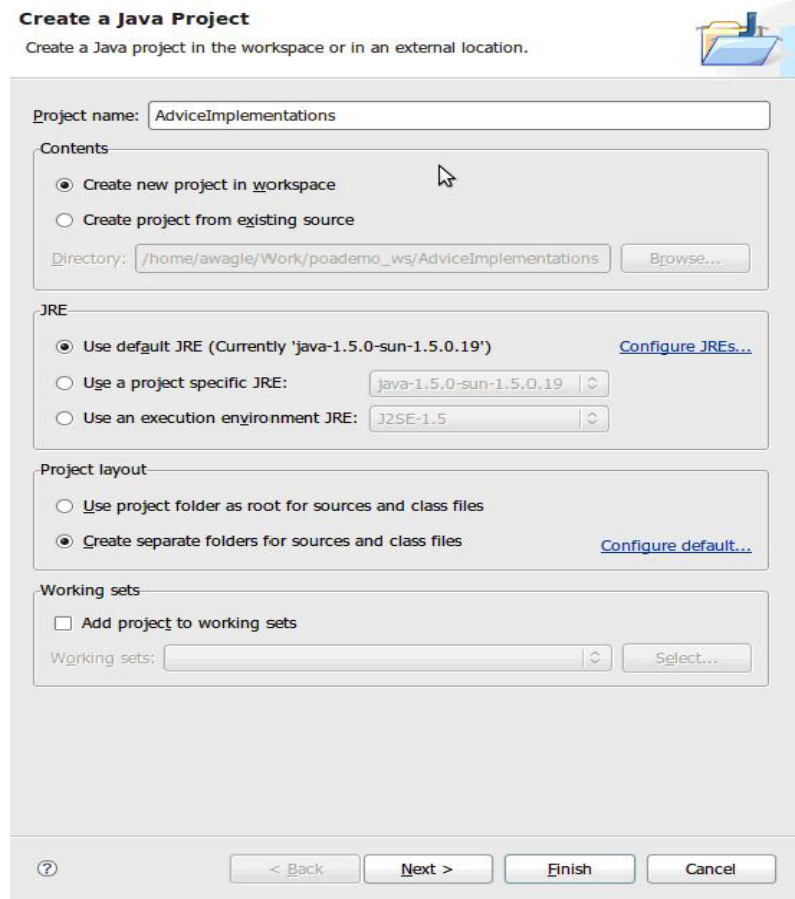
This section provides information about developing an aspect in an Eclipse environment.

## Setting up Eclipse for TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in Development

To setup eclipse for the TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in development, do the following:

- 1. Create a JAVA eclipse project.

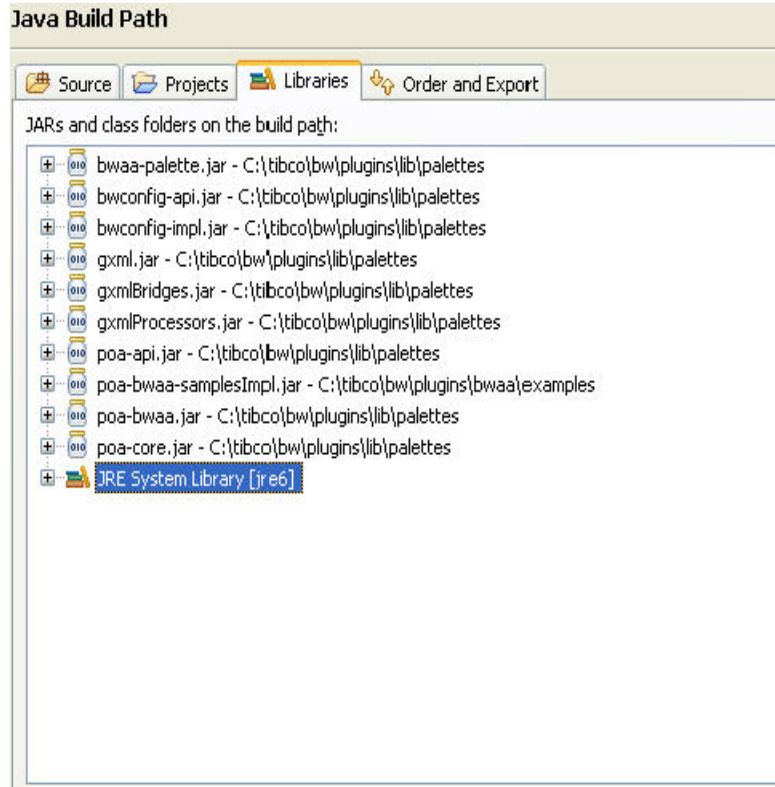
Figure 2 Creating a Java Project



2. Click **Add External JARs** to add all the required JARs contained in the installation to the build path.
  - `poa-core.jar` and `poa-bwaa.jar` - This is the core runtime library of this product.
  - `poa-api.jar` - Contains the public API of this product.
  - `gxml.jar`
  - `gxmlBridges.jar`
  - `gxmlProcessors.jar`
  - `poa-samplesImpl.jar` and `poa-bwaa-samplesImpl-src.jar` - Contains all the advice implementations for the sample advices.
  - `bwaa-palette.jar` - Contains information about the BWAA palette.
  - `bwconfig-api.jar` - Contains all the interfaces to get activity configuration data.
  - `bwconfig-impl.jar` - Contains all the Provider implementations to get read-only access to activity configuration data.
3. To attach the source to the `samplesImpl.jar`, right-click on the JAR in the Referenced Libraries in the Eclipse Project Explorer and select **properties**. In the **Java Source Attachment**, select **External File** and browse to **samplesImpl-src.jar**.

This will attach the source code to the JAVA classes.

Figure 3 Jars and Class Folders on the Build Path



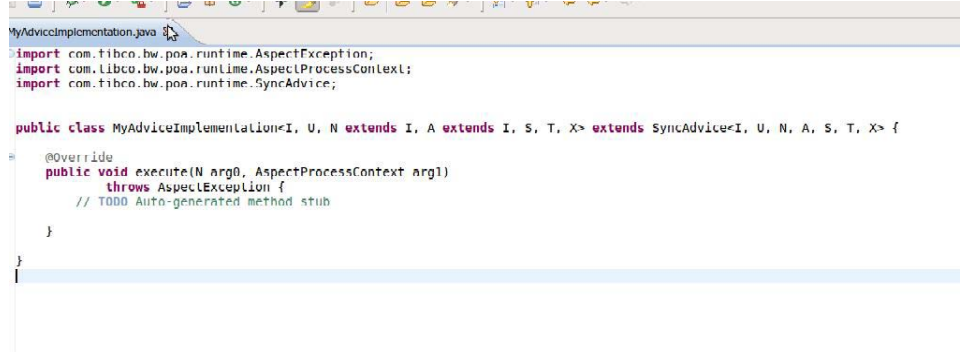
## Creating an Advice Implementation

To create an advice implementation, you would need to extend the `SyncAdvice` class.

1. Create a new class in the JAVA Eclipse Project.
2. Extend the `SyncAdvice` or `AsyncAdvice` (for Async Advice Implementations) class with the required generics.
3. Annotate the class with `@AdviceImpl` specify the `dataAccess` field for the annotation.
4. Override the `execute()` and `postExecute()` and `cancelled()` for Async Advice Implementations method in the advice implementation class.



Figure 4 Creating an Advice Implementation



```

MyAdviceImplementation.java
import com.tibco.bw.poa.runtime.AspectException;
import com.tibco.bw.poa.runtime.AspectProcessContext;
import com.tibco.bw.poa.runtime.SyncAdvice;

public class MyAdviceImplementation<I, U, N> extends I, A<I, S, T, X> extends SyncAdvice<I, U, N, A, S, T, X> {

    @Override
    public void execute(N arg0, AspectProcessContext arg1)
        throws AspectException {
        // TODO Auto-generated method stub
    }

}

```

## Debugging an Advice Implementation

To debug an advice implementation, use the Remote Debugging feature provided by Eclipse.

To debug the advice implementation:

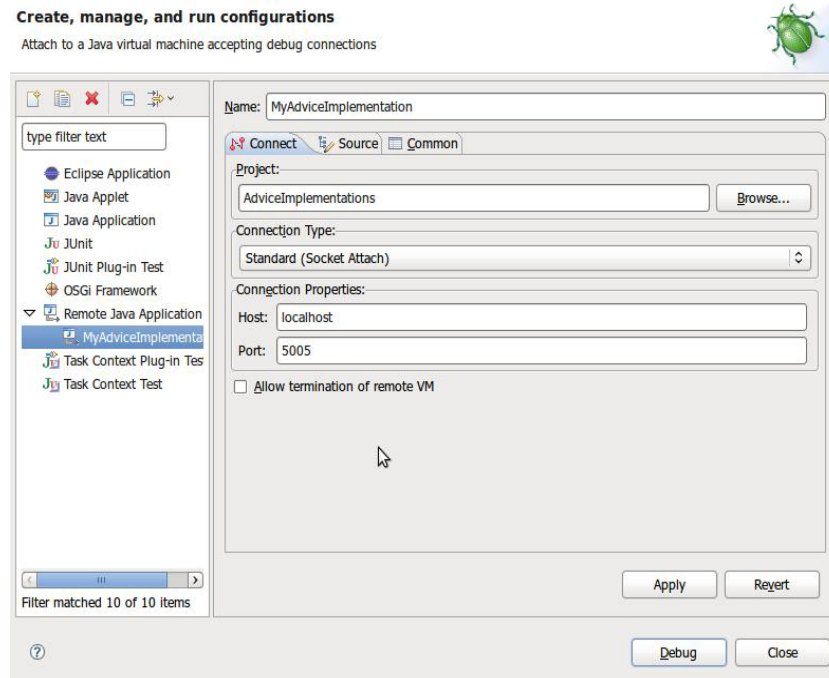
1. Export the class to debug in the bwengine classpath as a jar. (Adding in the hotfix/lib directory is recommended).
2. Add the following line in bwengine.tra:
 

```
java.extended.properties=-Xmx512m -Xms128m -XX:MaxPermSize=128m
-Xdebug -Xnoagent -Djava.compiler=NONE
-Xrunjdwp:transport=dt_socket,server=y,suspend=n,address=5005
```



The port number (address=5005) can be changed as per the eclipse remote debugger settings.

3. Create a new **Debug Configuration** of type **Remote Java Application** in Eclipse and add the IP address where the bwengine is running.
4. Select the project to debug.
5. Change the port number to the one specified in the bwengine.tra.

*Figure 5 Debugging an Advice Implementation*

6. Click **Debug** to connect to the running TIBCO ActiveMatrixBusinessWorks engine.

## Using TIBCO Designer with TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in

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The following steps provide the detailed information about using TIBCO Designer with TIBCO ActiveMatrix BusinessWorks ActiveAspects Plug-in.

1. Open `$TIBCO-HOME\Designer\<version_num>\bin\designer.tra` and append the aspect lib folder to the property `tibco.env.CUSTOM_CP_EXT`. The default aspect lib folder is `$TIBCO-HOME\bw\plugins\bwaa\lib`.
2. Create a properties file, for example, `C:\test\props.cfg`, and add the following properties to it:

```
— java.property.aspectPath C:/tibco/bw/plugins/bwaa/aspects
— ServiceAgent.poa.serviceagent.Class=com.tibco.bw5.poa.core.run
  time.DefaultBw5AspectServiceAgentImpl
— Jmx.Enabled=true
```

(Replace the value of the `aspectPath` property with the appropriate value based on your environment)

3. Start TIBCO Designer and open the project that you want to debug.
4. Go to the **Tester** tab, click the **"Start"** button to start debugging your project and then click the **"Advanced"** button to launch the advanced configuration. In the **Test Engine User Args** field, introduce the following:

```
-p C:\test\props.cfg
```

(Replace the path with the appropriate value based on where you saved the properties file that was created at step #2)

5. Start debugging your project.

At this point, the engine should also execute the aspects that are available in `aspectPath`. Ensure that all advice implementations as well as their dependent JARs are available in the classpath.

