TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe

User's Guide

Version 6.3.0

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Contents

TIBCO Documentation and Support Services

How to Access TIBCO Documentation

Documentation for TIBCO products is available on the TIBCO Product Documentation website, mainly in HTML and PDF formats.

The TIBCO Product Documentation website is updated frequently and is more current than any other documentation included with the product. To access the latest documentation, visit https://docs.tibco.com.

Product-Specific Documentation

Documentation for TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe is available on the TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe Product Documentation page.

The following documents for this product can be found on the TIBCO Documentation site:

- *TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe User's Guide*
- *TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe Installation*
- *TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe Release Notes*

How to Contact TIBCO Support

You can contact TIBCO Support in the following ways:

- For an overview of TIBCO Support, visit http://www.tibco.com/services/support.
- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the TIBCO Support portal at https://support.tibco.com.
- For creating a Support case, you must have a valid maintenance or support contract with TIBCO. You also need a user name and password to log in to https://support.tibco.com. If you do not have a user name, you can request one by clicking Register on the website.

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Plug-in Overview

TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe enables a user to connect to TIBCO AuditSafe and uniquely adds the secured business audit trails to the applications, which are supported by the blockchain technology.

TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe adds a TIBCO AuditSafe Palette to TIBCO Business Studio™

TIBCO ActiveMatrix BusinessWorks is an easy to use integration product suite for enterprise, web, and mobile applications. It uses the Eclipse graphical user interface (GUI), TIBCO Business Studio, for defining business processes and the process engine to execute them.

Getting Started

A typical workflow for using the plug-in to achieve different goals includes creating a process, testing it in the debugger, and deploying the application. By using TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe, you can create services and integrate applications, and deploy them at run time.

TIBCO ActiveMatrix BusinessWorks uses the Eclipse graphical user interface (GUI) provided by TIBCO Business Studio to define business processes and generate Enterprise Archives (EAR files). The EAR files are deployed and run in the ActiveMatrix BusinessWorks runtime, and also are managed by using TIBCO Enterprise Administrator (TEA).

The typical workflow for using the plug-in is:

- Creating a Project
- Creating a TIBCO AuditSafe Shared Resource Connection
- Configuring a Process
- Debugging and Running a Process
- Deploying Applications

Creating a Project

Projects are BusinessWorks application modules that are created in TIBCO Business Studio. The first task using the plug-in is creating a project. After creating a project, you can add resources and processes.

Procedure

1. Start TIBCO Business Studio using one of the following ways:

   - Microsoft Windows: click **Start**>**All Programs**>**TIBCO**>*TIBCO_HOME*>**TIBCO Business Studio** >*version_number*>**Studio for Designers**
   - Mac OS and Linux: run the TIBCO Business Studio executable file located in the `TIBCO_HOME/` `studio/`*version_number*`/eclipse` directory.

2. From the menu, click **File** > **New** > **Project**.

3. In the New Project dialog box, select **BusinessWorks** > **BusinessWorks Application** and click **Next**.

   > 📝 There are several ways to open the New BusinessWorks Application Module dialog box and create a new project in TIBCO Business Studio. For more information, see the *TIBCO ActiveMatrix BusinessWorks* documentation.

4. In the **Project name** field, type a name for the project that you are creating.

5. Keep the **Use default location**, **TIBCO Cloud**, and **Create Application Module** check boxes selected. Click **Finish**.

Result

A project and an application are created and displayed in the Project Explorer view. The Process editor opens automatically.
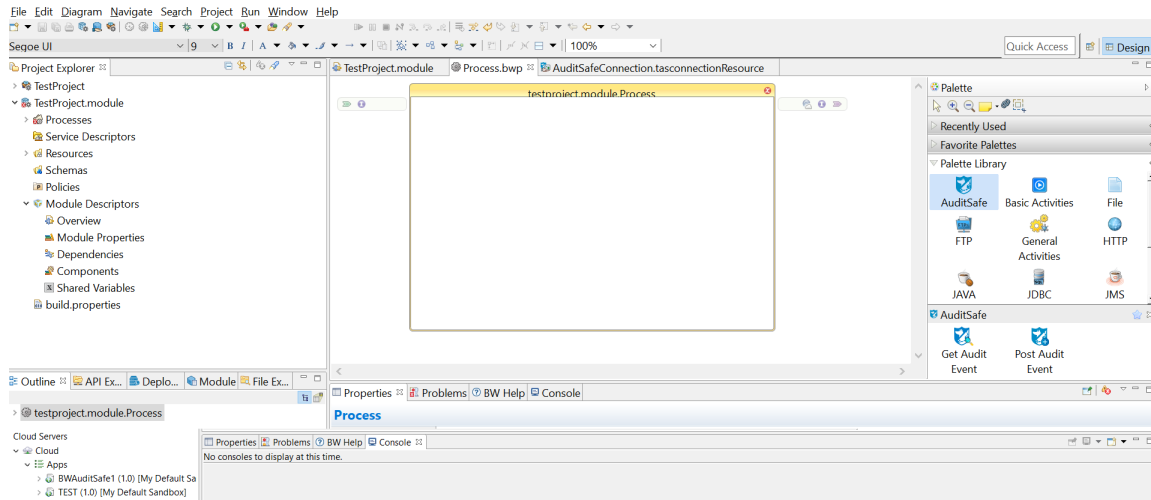
Creating a TIBCO AuditSafe Shared Resource Connection

Perform the following steps to create a TIBCO AuditSafe connection:

Procedure

1. In the Project Explorer view, expand the created project folder *projectname*.**module**.

2. Right-click the **Resources** folder and select **New** > **AuditSafe Connection**.

3. In the tasconnection dialog box, you can see a default name of the resource connection in the **Resource Name** field. Click **Finish** to open the tasconnection Editor.

4. In the displayed tasconnection Editor, configure the TIBCO AuditSafe shared resource connection. For more information, see TIBCO AuditSafe Shared Resource Connection.

5. Click **Test Connection** to validate the connection.

   If your account is associated with the multiple organizations, then after clicking **Test Connection**, you can select a desired organization from the Account Information pop-up menu.

6. After the test connection is successful, click **OK**.

Configuring a Process

After a project is created, you can see an empty process created automatically. You must configure the process by adding activities, conditions, and services to the empty process to complete a task.
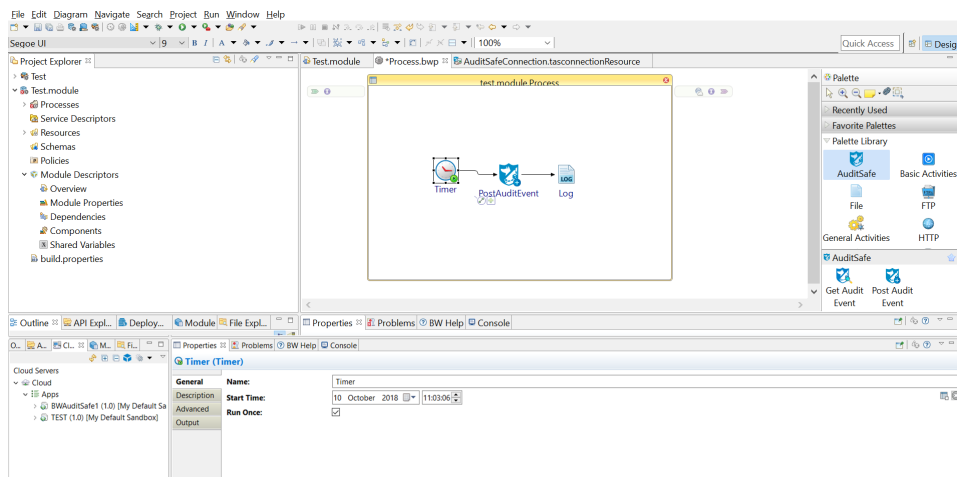
Procedure

1. Select an activity from the Palette view and drop it in the Process editor.
    For example, select and drop the **Timer** activity and **Log** activity from the **General Activities** palette and the **Post Audit Event** activity from the **AuditSafe** palette.

2. Click the link ⌀ icon to create links between the activities and configure the condition types.

3. Configure the added activities. For more information, see TIBCO AuditSafe Palette.

    > TIBCO AuditSafe shared resource is required when configuring the activities. For more details on how to create the TIBCO AuditSafe shared resource connection, see Creating a TIBCO AuditSafe Shared Resource Connection.

4. To save the configured project, click **File** > **Save**.

Debugging and Running a Process

Debug the application you have configured to ensure that the application configuration is correct.

Procedure

1. Open the process you have configured in TIBCO Business Studio.

2. On the toolbar, click **Run** > **Debug Configurations**.

3. In the left panel, click **BusinessWorks Application** > **BWApplication**.

4. In the right panel, ensure only the application you want to debug and run is selected on the **Applications** tab.

5. To locate the `logback` file, click the **Advanced** tab and click **Browse**.

    By default, the log file resides in the `TIBCO_HOME/bw/6.x/config/design/logback` directory and error logs are captured. For more details, see Managing Logs .

6. Click **Debug**.
    TIBCO Business Studio changes to the Debug perspective. Logs are displayed in the Console view.

Checking Output of an Activity

After debugging the application, you can check the output of activities.

Procedure

1. In the Debug perspective, expand **BWApplication** and click the activity in the upper-left panel.
2. In the upper-right panel, click the **Job Data** view and click **Output**.

Result

The output of the activity is displayed.

> You can also check the activity output in the plug-in logs. For more information, see
> Managing Logs

Generating an EAR File

Application archives are enterprise archive (EAR) files that are created in TIBCO Business Studio. An EAR file is required when deploying an application.

Prerequisites

An application project has already been created, as described in Creating a Project.

> For more information about other ways of generating an EAR file, see *TIBCO ActiveMatrix BusinessWorks Administration* guide.

Procedure

1. Go to the File Explorer view and click the **Open Directory to Browse** icon.
2. Select the folder where you want to generate the EAR file and click **OK**.
   The new folder is displayed in the File Explorer view.
3. Drag the application from the Project Explorer view to the new folder in the File Explorer view.

   The EAR file is generated with the name `<name>.<application>_<version>`.ear.

Deploying Applications

After deploying applications, you can manage BusinessWorks applications by using TIBCO Enterprise Administrator.

Prerequisites

The following tasks are required before deploying applications:

- Creating a Project.
- Generating an EAR file.

A typical workflow of deployment includes:

Procedure

1. Upload an EAR file.
2. Deploy an application.
3. Configure an application.
4. Start an application.

TIBCO AuditSafe Shared Resource Connection

You can use the TIBCO AuditSafe shared resource connection to specify the configuration details.

General

The **General** panel contains the following fields:

Field	Module Property?	Description
Package	No	Name of the package where the new shared resource is added.
Name	No	Name to be displayed as the label for the TIBCO AuditSafe shared resource in the process.
Description	No	Short description for this shared resource.

tasconnection Configuration

The **tasconnection Configuration** panel is used to provide the information of the TIBCO AuditSafe server that the plug-in connects to.

The **tasconnection Configuration** panel contains the following fields:

Field	Module Property?	Description
Server URL	YES	Server URL of TIBCO AuditSafe dataserver .
Username	YES	User name used to access the TIBCO AuditSafe server.
Password	YES	Password for authenticating the connection with the TIBCO AuditSafe server.
On-Prem Version	YES	Select this check box to connect with the TIBCO AuditSafe On-Prem server. For a successful connection, you are required to specify the AuditSafe dataserver URL, username, and password applicable for TIBCO AuditSafe.

TIBCO AuditSafe Palette

TIBCO AuditSafe Palette contains Post Audit Event activity and Get Audit Event activity.

Post Audit Event Activity

You can use this activity to post one or multiple audit events to the TIBCO AuditSafe server.

General

The **General** tab contains the following fields.

Field	Module Property?	Description
Name	NO	The name to be displayed as the label for the activity in the process.
AuditSafe Connection	YES	Connection details that must communicate with the TIBCO AuditSafe shared resource. Click the search 🔍 icon to select the **AuditSafe Connection** shared resource. If no matching shared resources are found under **Matching items:** in Select TasconnectionResource Resource Template window, click **Create Shared Resource** to create one. See Creating a TIBCO AuditSafe Shared Resource Connection

Description

You can enter a short description for the Post Audit Event activity on this **Description** tab.

Input

On the **Input** tab, you can specify the fields that you require. The following table lists the input items for the activity:

Input Item	Data Type	Description
transaction_id	String	(Mandatory) Unique ID assigned to a business transaction. A common transaction ID assigned to an audit event can be linked to the next audit event. This results in a chronological chain of all audit events which can be viewed graphically on the "Audit Trail" page. For a single transaction, only one transaction ID is required whereas a complex branched transaction requires the data from **event_id** and **parent_id**. Enclose the transaction number in double quotation marks.

Input Item	Data Type	Description
biz_proc	String	(Mandatory) Name of the business process that must be tracked. For example: `Order business process`, `Trade business process`, `Purchase Order business process`, `Claim`, or `Payment`. Each business process specifies an audit trail of events and their respective status.
audit_event	String	(Mandatory) State of the business process that must be recorded. For example: `Order Accepted`, `Payment Authorized`, `Payment Settled`, `Order Cancelled`, `Order Filled`, `Claim Filed`, `Claim Adjusted`, `Order Routed`, and `Order Shipped`. By default, the **Needs validation** property is disabled on the plug-in page. If you enable it, the value of the **audit_event** is verified against the user-defined values entered under **List of audit events**.
event_desc	String	(Mandatory) Short description for an audit event.
event_timestamp	String	(Mandatory) Digital record which denotes the time at which an event occurred during the lifecycle of a transaction. Timestamps of the events are used to build a chronological audit trail of an entire transaction. Date time stamps are specified in `YYYY-MM-DDThh:mm:ssZ` format.
event_status	String	(Mandatory) Status of an audit event. For example: The status of the placed order can be `Pending`, `Failed`, `Processed`, `In Progress` or `Completed`. By default, the **Needs validation** property is disabled on the plug-in page. If you enable it, the value of an **event_status** is verified against the user-defined values entered under **List of Status**.
event_id	String	(Optional) User-defined ID assigned to a particular audit event. If an **event_id** is not provided, TIBCO AuditSafe uses the **event_timestamp** to link the events having the same transaction number in chronological order.

Input Item	Data Type	Description
event_source	String	(Optional) Source of an event trigger. For example: It can be a nonphysical logical entity (Credit Checker program), an actual business department (Warehouse Department, Shipping Department), or an application/system (CRM, OMS, Purchasing System) through which the transaction processes.
event_destination	String	(Optional) Destination of an event. For example: It can be an API being called by the source, or the system having the web service that receives a message from the message source.
parent_event_id	String	(Optional) **event_id** of a previous event that is used to identify the hierarchy of the chain of events. In the absence of a user-generated **event_id**, the **tas_event_id** is used as the parent event ID for subsequent events in branched workflows (to form a tree structure). You can view the parent-child relationship of the entire business transaction by using the parent event ID.
payload	String	(Optional) Additional information about an event. It can be an XML file, a JSON file, or a PDF document that is uploaded to the system for further reference.
extra_props*	String	(Optional) User-defined additional properties describing an event other than the input fields provided. Lists the two additional fields for an event: **prop_name** and **prop_value**. For example: The **prop_name** can be Invoice number and **prop_value** can be any value which describes the property. You can add multiple properties for an event.

Output

On the **Output** tab, you can check the response information. The following table lists the output items for the activity:

| Output Item	Data Type	Description
transaction_id	String	Unique ID of a business transaction.

Output Item	Data Type	Description
tas_event_id	String	Unique ID generated by the system for every event sent to TIBCO AuditSafe. This ID can be used as the parent ID in the subsequent events for branched transactions to form a tree structure. If an **event_id** is not generated by the customer, **tas_event_id** is used as the parent ID in subsequent events for branched transactions to form a tree structure.
event_id	String	Event ID which is populated only if an **event_id** is provided when data is sent to TIBCO AuditSafe. This ID can be used as the parent ID in the subsequent events for branched transactions to form a tree structure.

Get Audit Event Activity

You can use this activity to get one or multiple audit events from the TIBCO AuditSafe server.

General

The **General** tab contains the following fields.

Field	Module Property?	Description
Name	NO	The name to be displayed as the label for the activity in the process.
AuditSafe Connection	YES	Connection details required to communicate with the TIBCO AuditSafe shared resource. Click the search 🔍 icon to select the **AuditSafe Connection** shared resource. If no matching shared resources are found under **Matching items:** on Select TasconnectionResource Resource Template window, click **Create Shared Resource** to create one. See Creating a TIBCO AuditSafe Shared Resource Connection
Only Get Total Count	NO	Select the checkbox to view only the total number of the records returned by the event in the search criteria.
Sort by Column	YES	The name of the column for which data is to be sorted. If you do not specify the name of the column, data is not sorted.
Descending Order	NO	Select the checkbox in order to sort the data in descending order. The data to be sorted depends on the name of the column specified in the **Sort by Column** field.

Field	Module Property?	Description
Exact Match	NO	Select the checkbox in order to get the exact match of the data.
		The data returned depends on the inputs provided in an **Input** tab.
Include Event Payload	NO	Select the checbox if you wish to view the payload of the event in the output.
Set Return Limit	NO	Enter the number of records you wish to view in the output. Default setting is 1000.

Description

You can enter a short description for the Get Audit Event activity on this **Description** tab.

Input

In the **Input** tab, you can specify the fields that you require. The following table lists the input items for the activity:

Input Item	Data Type	Description
biz_proc	String	Name of the business process that needs to be tracked. For example: Order business process, Trade business process, Purchase Order business process, Claim, or Payment. Each business process specifies an audit trail of events and their respective status.
audit_event	String	State of the business process. For example: Order Accepted, Payment Authorized, Payment Settled, Order Cancelled, Order Filled, Claim Filed, Claim Adjusted, Order Routed, and Order Shipped.
event_status	String	Status of an audit event. For example: The status of the placed order can be Pending, Failed, Processed, In Progress or Completed.
transaction_id	String	Unique ID of the business transaction.
event_source	String	Source of an event trigger.
event_destination	String	Destination of an event.

Input Item	Data Type	Description
event_start_timestamp	String	Date and time which represent the starting point to search for results.
		If an **event_start_timestamp** is not specified, the system will use the default start time of 01/01/1970. Date time stamps are expressed in `YYYY-MM-DDThh:mm:ssZ` format.
event_stop_timestamp	String	Date and time which represents the ending point to search for results .
		If you do not specify the **event_stop_timestamp**, all the records matching the search criteria are returned in the output along with the records that have a date later than current date. Date time stamps are expressed in `YYYY-MM-DDThh:mm:ssZ` format.
		If end timestamp is not specified, all the records following the time specified in an **event_start_timestamp** are displayed.
extra_props*	String	(Optional) User-defined additional properties describing an event other than the input fields provided. List of extra_prop which has two additional fields:**prop_name** and **prop_value**. For example: The **prop_name** can be `Invoice number` and **prop_value** can be any value which describes the property.
		You can add or search multiple properties for an event.
		You can search for multiple extra properties as follows:
		For the different **prop_name**: Enter separate search conditions. This search displays all the transactions, which includes all the property names.
		For the same **prop_name**: Define separate searches, each with a different **prop_value**. This search displays all the transactions, which include either of the property values.

Output

In the **Output** tab, you can check the response information. The following table lists the output items for the activity:

Output Item	Data Type	Description
totalResults	Integer	Number of records returned.

Output Item		Data Type	Description
errorMessage		String	Message displayed in case of error.
			For one cycle of **GetAuditEvent** activity, the maximum number of rows returned is same as the value specified in the **Set Return Limit** field. If the number exceeds the set value, the following error message is displayed: `WARNING: Total Count of events for this query is <n>, which exceeds the <limit> limit. Only first <limit> events are fetched.`
data	transaction_id	String	Data related to the specified transaction ID of a business transaction.
	tas_event_id	String	Unique ID which is returned by the system for every event searched.
	event_desc	String	Information about the specified audit events.
	event_source	String	Source of the specified event.
	event_destination	String	Destination of the specified event.
	biz_proc	String	Type of the business process.
	event_timestamp	String	Date and time of the specified event.
	audit_event	String	Data about the events specified in a particular state.
	event_status	String	Status of the specified event.
	event_id	String	Event ID which is populated only if an **event_id** is provided when data is sent to TIBCO AuditSafe. This ID can be used as the parent ID in the subsequent events for branched transactions to form a tree structure.

Output Item		Data Type	Description
	parent_event_id	String	**event_id** of a previous event that is used to identify the hierarchy of the chain of events. In the absence of a user-generated **event_id**, the **tas_event_id** is used as the parent event ID for subsequent events in branched workflows (to form a tree structure). You can view the parent-child relationship of the entire business transaction by using the parent event ID.
	payload	String	Returns the payload value of the event as follows: • If you select the **Include Event Payload** checkbox in the **General** tab for the event that consists payload, it returns the payload value of that event , else it returns a null value. • If you select the **Include Event Payload** checkbox in the **General** tab for the event that does not consist the payload information, it returns the null value.
	create_timestamp	String	Digital record which denotes the time at which an event is created.
	extra_props	String	User-defined additional properties describing an event other than the input fields provided. Returns the list of of extra_prop which has two additional fields for an event: **prop_name** and **prop_value**. For example: The **prop_name** can be `Invoice number` and **prop_value** can be any value which describes the property.

Working with Sample Projects

TIBCO ActiveMatrix BusinessWorks™ Plug-in for TIBCO AuditSafe packages a sample project with the installer. The sample project shows how the plug-in works.

After installing the plug-in, you can locate the sample project in the `TIBCO_Home\bw\palettes\auditsafe\6.x\samples` directory. This sample project contains the BWAuditsafeDemoFlow.bwp process.

Importing Sample Project

Before running the project, you must import the sample project to TIBCO Business Studio. To import the data and view your transactions or events, you must first configure and map your application schema to the TIBCO AuditSafe fields. .

Prerequisites

You must have an active subscription to TIBCO AuditSafe before you can do this. You can also download the BWAuditSafeDemo sample project from the Connectors page of the TIBCO AuditSafe UI.

The newly created sample project, which you download from TIBCO AuditSafe UI cannot run in the TIBCO AuditSafe 6.1.0.

Procedure

1. Start TIBCO Business Studio.

2. Click **File** > **Import**.

3. In the Import dialog box, expand the **General** folder and select the **Existing Studio Projects into Workspace** item. Click **Next.**

4. Click **Browse** next to the **Select root directory** field to locate the samples. Click **Finish.**

    The sample project BWAuditSafeDemo.zip is located in the `TIBCO_Home\bw\palettes\auditsafe\6.x\samples` directory. You must extract the files before using them.

Result

The sample project is imported to TIBCO Business Studio.
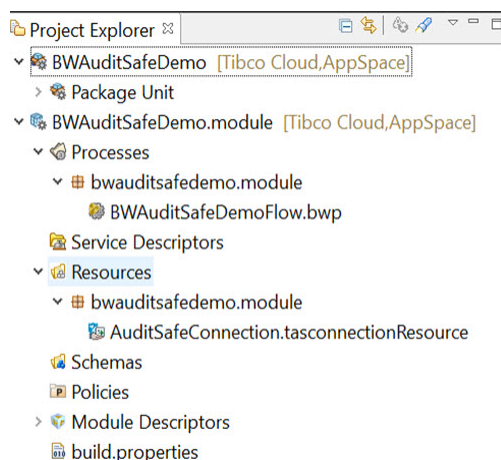
Running the Sample Project

You must configure the TIBCO AuditSafe Shared Resource Connection packaged in the sample before running the process.

Prerequisites

Ensure that you have imported the sample project, as described in Importing Sample Projects.

Procedure

1. In the Project Explorer view, expand **BWAuditSafeDemo.module**.

2. Expand **Resources** > **bwauditsafedemo.module**.

3. Double-click **AuditSafeConnection.tasconnectionResource** to configure the TIBCO AuditSafe Connection, and then click **Test** to validate your connection.

4. After successfully connecting to the TIBCO AuditSafe server, expand **Processes** > **bwauditsafedemo.module**.

5. Double-click **BWAuditsafeDemoFlow.bwp**.

6. To configure the properties of an activity, click on any one of the activities in the flow, displayed in the Process Editor and then click on the **Input** tab in the **Properties** view.

   For more details about input fields and output fields of the activities, see Post Audit Event Activity and Get Audit Event Activity.

   > On the toolbar, click the save 💾 icon to save your changes after every update.

7. From the menu, click **Run** > **Run Configurations**.

8. In the Run Configurations dialog box, expand **BusinessWorks Application**, and click **BWApplication**.

9. In the right panel, click the **Applications** tab, select the process of the imported projects and then click **Apply**.

10. To run the process, click **Run**.

11. After the process runs successfully, click the stop 🔲 icon to stop the process in the Console view.

12. To run the process with the predefined properties of the activity, skip Step 6.

    Result:
   The output of the process run in the Run mode.
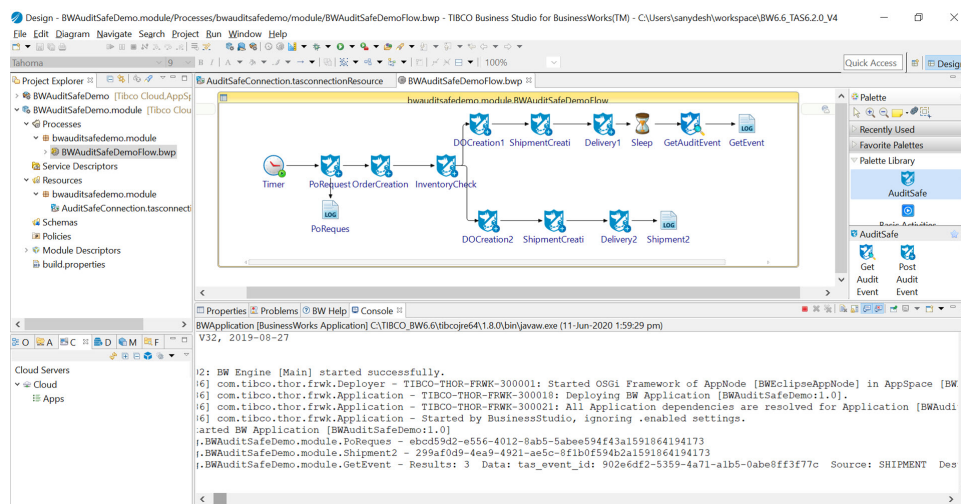
The output of the process run in the Debug mode.
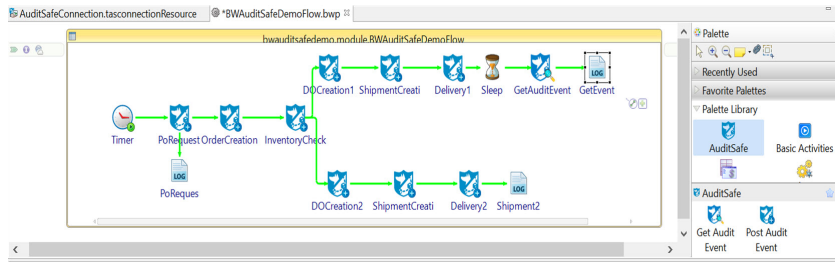
When you use the plug-in with the TIBCO BusinessWorks™ Container Edition 2.3.4, perform the following steps to avoid the design-time errors before running the sample project:

13. Right-click **BWAuditSafeDemo.module** in the Project Explorer view, and then click **Refactor** > **Repair BusinessWorks Projects**
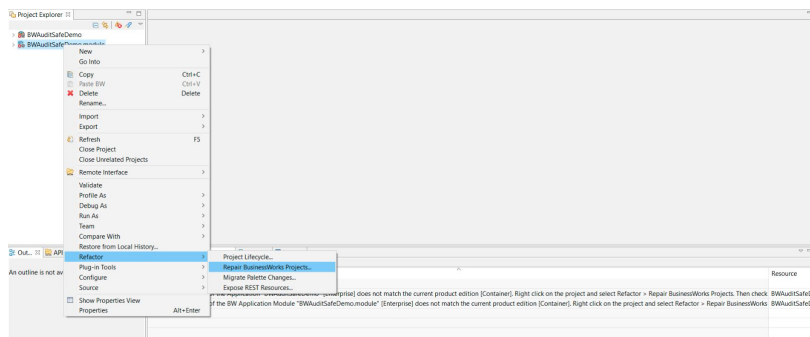
14. Select all the check boxes displayed on the Repair BusinessWorks Projects dialog box and then click **OK**
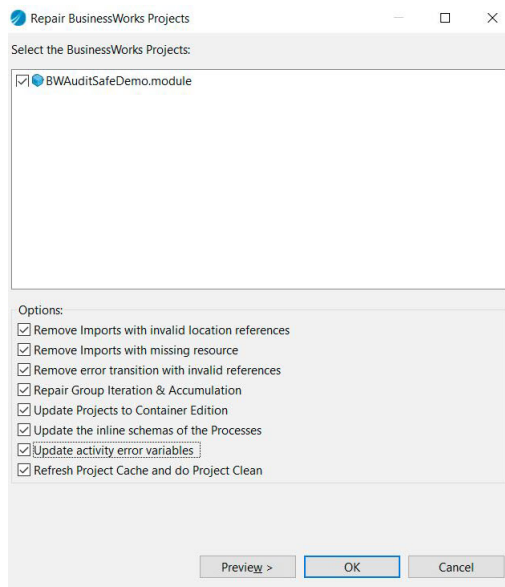
15. Repeat the above steps for **BWAuditSafeDemo** project folder.

Managing Logs

Logs are used to trace and troubleshoot the plug-in exceptions.

A `logback.xml` file is located in the `TIBCO_HOME\bw\6.x\config\design\logback` directory. Update this file to set up a log file and export logs to a file.

Log Levels

The plug-in captures logs at different levels.

Log Level	Description
Info	Indicates normal plug-in operations. No action is needed. A tracing message tagged with Info indicates that a significant processing step is reached and logged for tracking or auditing purposes. Only info messages preceding a tracking identifier are considered as significant steps.
Warn	Indicates that an abnormal condition is found. Processing continues, but special attention from an administrator is recommended.
Error	Indicates that an unrecoverable error has occurred. Depending on the error severity, the plug-in might continue with the next operation or might stop altogether.
Debug	Indicates a developer-defined tracing message.
Trace	Includes all the information regarding the running process.

Setting Up Log Levels

You can configure different log levels for the plug-in and plug-in activities to track different messages. By default, the plug-in uses the log level configured for TIBCO ActiveMatrix BusinessWorks. The default log level of TIBCO ActiveMatrix BusinessWorks is `Error`.

If neither the plug-in log nor the BusinessWorks log is configured in the `logback.xml` file, the error logs of the plug-in is displayed in the Console view by default.

If the plug-in log is not configured but the BusinessWorks log is configured in the `logback.xml` file, the configuration for the BusinessWorks log is implemented by the plug-in.

Procedure

1. Navigate to the `TIBCO_HOME\bw\6.x\config\design\logback` directory and open the `logback.xml` file.

2. To specify the log level for the plug-in, add the following node in the Console Appender area.
   ```
   <logger name="com.tibco.bw.palette.tas.runtime">
      <level value="DEBUG"/>
   </logger>
   ```
   The `level` tag defines the log level and the value is `Error` or `Debug`.

   > When the `level` is set to `Debug`, the input and output for the plug-in activities are also displayed in the Console view. For more details regarding each log level, see Log Levels.

3. Optional: Add the following node in Console Appender area to specify the log level for an activity.

```
<logger name="com.tibco.bw.palette.tas.runtime.ActivityNameActivity">
    <level value="DEBUG"/>
</logger>
```

For example, to set the log level of the PostAuditEvent activity to Debug, you must add the following node:

```
<logger name="com.tibco.bw.palette.tas.runtime.PostAuditEventActivity">
    <level value="DEBUG"/>
</logger>
```

> For the activities that do not configure with specific log levels, they still inherit log level configured for the plug-in or BusinessWorks.

4. Save the file.

Exporting Logs to a File

Modify the logback.xml file to export plug-in logs to a file.

Procedure

1. Navigate to the *TIBCO_HOME*\bw\6.*x*\config\design\logback directory and open the logback.xml file.

    > When deploying an application in TIBCO Enterprise Administrator, you must navigate to the *TIBCO_HOME*\bw\domains\mydomain\appnodes\myspace\mynode directory to find the logback.xml file.

2. Add the following node to specify the file location.

```
<appender name="FILE" class="ch.qos.logback.core.FileAppender">
    <file>c:/bw6- com.tibco.bw.palette.tas.runtime.log</file>
        <encoder>
          <pattern>%d{HH:mm:ss.SSS} [%thread] %-5level %logger{36}-%msg%n</pattern>
        </encoder>
</appender>
```

The file tag defines the location to which the log is exported and the value is the absolute path of the file.

    > You must add the file name in the file path.

3. Add the following node to the root node at the bottom of the logback.xml file to enable exporting the logs to a file.

```
    <appender-ref ref="FILE" />
```

```
<root level="DEBUG">
    <appender-ref ref="STDOUT" />
    <appender-ref ref="FILE" />
</root>
```

4. Save the file.

Error Codes

The following table lists the exceptions that are generated by the plug-in with corresponding descriptions and resolutions.

Shared Resources

Error Code and Error Message	Role	Category	Description	Resolution
500001 `Creating Shared Resource {0} failed.`	errorRole	BW-Plug-in	An error occurs when the shared resource cannot be created.	Check the configurations of the shared resource.
500002 `INPUT SCHEMA IS EMPTY`	errorRole	BW-Plug-in	An error occurs when an input schema saved in the shared resource is empty.	Check the configurations of shared resource and redo the test connection.
500003 `OUTPUT SCHEMA IS EMPTY`	errorRole	BW-Plug-in	An error occurs when an output schema saved in the shared resource is empty.	Check the configurations of the shared resource and redo the test connection.

Post Audit Event Activity

Error Code and Error Message	Role	Category	Description	Resolution
50002 `Exception occurred while posting events failed. [{0}]`	errorRole	BW-Plug-in	An exception occurs when Post Audit Event activity fails to post the events.	Read the exception details and fix the problem.
50003 `POST EVENT failed. Status code:[{0}]; error message: [{1}]`	errorRole	BW-Plug-in	An error occurs when Post Audit Event activity fails to call to TIBCO AuditSafe server.	Check the status code and error message.

Get Audit Event Activity

Error Code and Error Message	Role	Category	Description	Resolution
50004 `Exception occurred while get events. [{0}].`	errorRole	BW-Plug-in	An exception occurs when Get Audit Event activity fails to query the events.	Read the exception details and fix the problem.

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