TIBCO iProcess® Script Plug-in

User Guide

Version 11.10.0 | May 2025

Contents

About TIBCO iProcess® Script Plug-in

TIBCO iProcess Script plug-ins enable the creation of server-side script steps that generally provide integration with some external system or local server-side processing capabilities.

The following are the two components that make up the functionality:

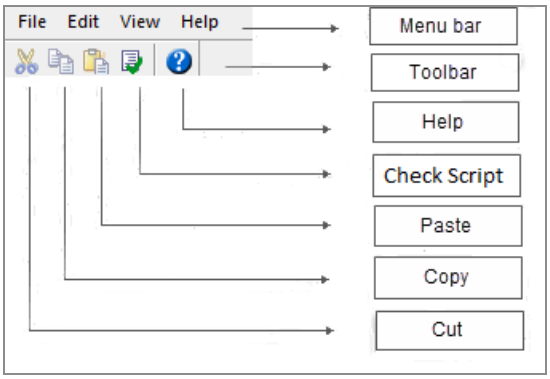
- IProcess Script Client Plug-in - This component is the design-time component that integrates into iProcess Modeler and provides the user interface for the iProcess Developer to build the step. The client plug-in can call through to the server (run-time) plug-in at design-time to gain access to information to improve the development experience.
- IProcess Script Server Plug-in - This component is the run-time component that actually has the capability to execute the step and perform the operation or call the external system. The server plug-in provides the ability for an iProcess Developer to insert an iProcess Script inline in the process, it is called between the execution of other steps as part of the server-side transaction. It is used to manipulate data internally in iProcess, that is, to set, validate, or manipulate iProcess fields.

The client plug-in is automatically installed as part of iProcess Workspace (Windows), and the server plug-in is automatically installed as part of iProcess Engine.

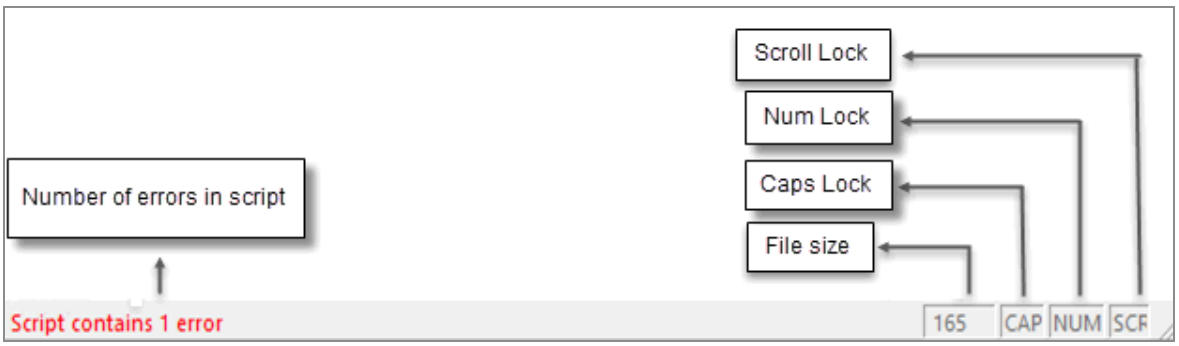
About Script Editor

The main functionality of TIBCO iProcess™ Script Client Plug-in is to write or edit an EAI script. The script editor of the client plug-in has an easy-to use and productive interface that allows you to write or edit code quickly and efficiently.

- Menu bar and Toolbar: The Menu bar and Toolbar facilitate the use of key features that have been added. Common actions that you can perform are provided on the toolbar. Click on the toolbar icon to select the action.



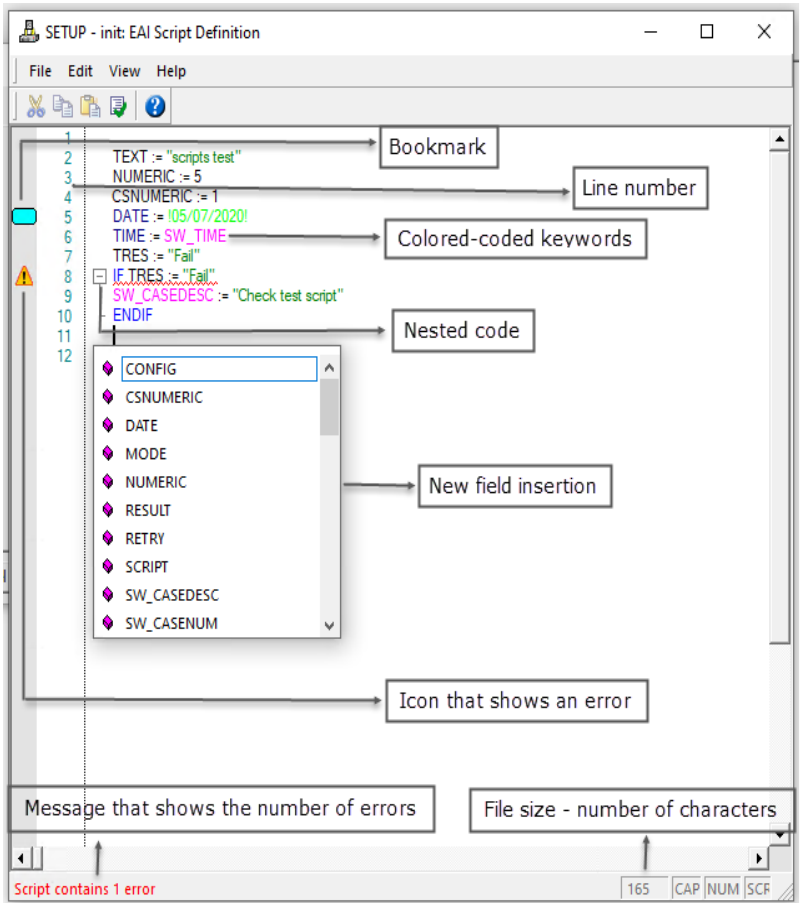
- Status Bar: The Status Bar has five sections. The first section shows the file size, and the other three sections show CAP lock, NUM lock, and SCRL lock. The Status Bar also shows the number of errors in red when a syntax check is run on the script.



Script Editor Features

From version 11.9.0, the script editor has significantly enhanced functionality. The script editor provides key features that you can make use as follows:

- Using Color-Coded Keywords
- Using Bookmarks
- Inserting New Fields Using Intellisense
- Expanding and Collapsing Code Blocks
- Viewing Line Numbers
- Checking the Script



Using Color-Coded Keywords

Color-coded keywords differentiate strings, comments and so on, and it displays them in different colors.

The following table lists the Script keywords and their respective colors.

Color	Is Case Sensitive?	Keyword
Blue	False	Script statements
Dark blue	False	Script supported functions, Boolean values
Dark gray	NA	Single and multiline comments
Dark green	NA	A String literal
Magenta	False	iProcess Fields
Green	NA	Date
Dark Magenta	NA	Time (enclosed between ##)
Black	NA	Array indexes
Red	False	iProcess functions that are not supported

Using Bookmarks

Bookmarks help you to mark a point and quickly jump to that point, as well as back and forth between such points in your script. When you add a bookmark, the bookmark icon is visible in the left before a line number. You can add bookmarks, move from one bookmark to another and clear bookmarks in the following way:

- To add a bookmark, select the menu option **Edit > Toggle Bookmark** or use the keyboard shortcut Ctrl+F2.
- To move to the next bookmark, select the menu option **Edit > Next Bookmark** or use the keyboard shortcut F2.
- To move to the previous bookmark, select the menu option **Edit > Previous Bookmark** or use the keyboard shortcut Shift+F2.
- To clear or remove a specific bookmark, select the menu option **Edit > Toggle Bookmark** or use the keyboard shortcut Ctrl+F2.
- To clear all bookmarks, select the menu option **Edit > Clear All Bookmarks**.

Inserting New Fields Using Intellisense

Intellisense assists you to edit or complete your code by providing the required fields or parameters that you can insert in a given context. When you hover over a function, it provides a list with details of the function making it easy for you to complete the script expressions with the correct details.

To insert iProcess case fields and add expressions in your script, use the keyboard shortcut Ctrl+Shift+L.

Expanding and Collapsing Code Blocks

Nested code blocks can be expanded or collapsed. You can expand a code block if you are doing a detailed check or collapse a code block if you are skimming over it while checking your script.

To expand a code block, click the plus symbol (+) beside a nested code block; and, to collapse a code block, click the minus synbol (-) beside the nested code block.

Viewing Line Numbers

Line numbers are provided at the start of a line. You can view or hide line numbers as required.

To view or hide the line numbers, use the menu option **View > Line Numbers**.

Checking the Script

Script checking is now available. You can perform an auto-check or manual (on-demand) check of the script. You can search by using Ctrl+F to find the specific content. The following sections explain these checks.

Auto-Checking

When auto-check is selected, it validates the script and marks the errors with a warning icon every time the user stops typing. It is a good practice to select this option as the preferred default option because when a user is creating or editing a script, immediate feedback is provided if there is an error. However, if auto-check is interfering with the editing process or with the product performance (that is, when the script is very large, say more than 12,000 lines of code), you can disable auto-check for some time and enable it again later.

To set auto-check, use the menu option **Edit > Auto-Check Script** or the keyboard option Ctrl+U.

Manual (On-demand) Checking

When manual check is selected, it validates the script and marks the errors with a warning icon. However, when you fix any error it only rechecks the specific lines marked with the warning icon. If you make changes in any other lines of the script, the editor does not check these lines for new errors.

To set manual check, use the menu option **Edit > Check Script** or the keyboard option Ctrl+S.

The number of errors in the script are indicated in the status bar at the bottom of the window. For an example, see About Script Editor.

Creating Script Plug-in Steps

This section describes how to define Script Plug-in steps in your iProcess procedures. Script Plug-in steps enable you to manipulate case data between other iProcess steps. For example, you might want to perform some calculations on some case data before sending the result to your next step.

Example Uses of Script Plug-in Steps

The following examples describe typical uses for an Script Plug-in step (or EAI step) to manipulate case data.

Concatenating Data

You can use an EAI step to extract the date and time from an external application. You will then have two iProcess fields such as DATE and TIME containing these values. You can create an EAI step to concatenate the two fields to create just one TIMEDATE field. For example, enter the following script:

```
TIMEDATE:=TIME+DATE
```

You might need to do this before using an EAI Database plug-in to insert the time and date into your database.

Performing Calculations

You can perform background calculations such as calculating the interest owed on an account balance that has been extracted from a banking database. The new balance amount can then be passed to another external system.

The iProcess scripting language is used to create the scripts. Please refer to the Example Uses of Script Plug-in Steps for detailed information about using expressions and functions in your scripts.

Note: Currently, not all of the iProcess expressions are supported in the iProcess Script plug-in. For a current list of unsupported expressions, see iProcess Expressions Not Available to the iProcess EAI Script Plug-in.

What is the Transaction Scope of Script Plug-in Steps?

Any changes made to iProcess case data by your script are committed or rolled back with the entire workflow transaction. If a subsequent Script Plug-in step (or EAI step) fails then changes made by your Script Plug-in are rolled back.

If an invalid expression is found by the Script server/run-time plug-in (i.e. syntax errors), the Script Plug-in step will stop immediately and iProcess is notified that the transaction should not be committed. The error(s) will be logged in the `SWDIR\logs\sw_warn` file - see Tracing Problems in Your Scripts for more information.

iProcess Expressions Not Available to the iProcess EAI Script Plug-in

The following iProcess Expressions are currently not available to the iProcess Script Plug-in. Therefore, even though you can successfully enter the expressions in your iProcess Script plug-in definition, they are not processed by iProcess Engine. All of the following expressions return SW_NA (except GOTOSTEP, which has its own error code).

- CASESTART
- DBWRITEFIELDS, DDEGETNAME, DDEGETTOPIC, DDEINITIATE, DDEPOKE, DDETERMALL, DDETERMINATE, DDEEXECUTE, DDEREQUEST
- FILEREQUEST, FORMCONTROL, FORMMAXIMIZE, FORMMINIMIZE, FORMMOVE, FORMRESTORE, FORMSIZE

- GETHANDLE, GOTOSTEP
- MARKFIELDCHANGED, MEMOFILE, MESSAGEBOX
- READFIELDS
- SENDKEYS, SERVEREXEC, SERVERRUN
- TRIGGEREVENT
- UNIXEXEC, UNIXRUN
- VLDFILE, VLDFILEX, VLDQUERY
- WINACTION, WINACTIVATE, WINCLOSE, WINEXIST, WINFIND, WINMAXIMIZE, WINMESSAGE, WINMINIMIZE, WINMOVE, WINRESTORE, WINRUN, WINSIZE, WRITEFIELDS

Prerequisites for Using Script Plug-in Steps

Before using Script Plug-in steps in your business process, you need to make sure you meet the following prerequisites:

- The client (design-time) and server (run-time) iProcess Script Plug-in components must be installed.

> **Note:** If you are just running EAI steps on your server, you only need to install the run-time plug-in. You only need the design-time plug-in if you are creating EAI steps.

- You need to be familiar with using the iProcess scripting language. For more information, see *TIBCO iProcess Expressions and Functions Reference Guide*.
- You must know which iProcess Expressions are not available to the iProcess Script Plug-in, see iProcess Expressions Not Available to the iProcess EAI Script Plug-in.

Creating an EAI Script Plug-in Step

To create a Script Plug-in step in your procedure, you must perform the following steps:

1. Define Basic EAI Step Information

2. Define the EAI Script

When you have done this, the EAI step type is defined as a EAI Script step and the icon for the step is displayed as .

Define Basic EAI Step Information

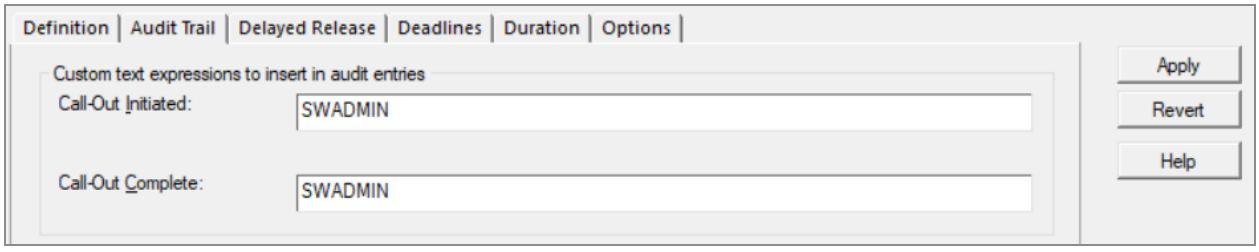
1. Start the TIBCO iProcess Modeler, click the EAI Step tool and click in the window where you want to place the EAI Step.
2. In the Properties pane, enter the **Name** and **Description** for the step.
3. In the **EAI Type** drop-down list, select **EAISCRIPT** - **EAI SCRIPT EAI step plug-in**.

   You must enter this when you first create the step; it cannot be changed later. The list box displays EAI step types that have been installed as client EAI plug-ins. This name is used as the link between the EAI step and the run-time plug-in registered on the iProcess server(s).
4. Click the **Ignore Case Suspend** checkbox if you want the step to still be processed as normal while a case is suspended by an iProcess Objects or SAL application.

   If **Ignore Case Suspend** is not checked (the default option), the step is *not processed* while the case is suspended.

Note: Cases can only be suspended and re-activated from an iProcess Objects or SAL application. Audit trail messages indicate whether a case is active or suspended. For more information about suspending cases, see the iProcess Objects documentation.

5. Click the **Audit Trail** tab to define custom audit trail entry expressions. This enables you to define text expressions that are evaluated when the step is processed and inserted as the %USER value in the audit trail entries.



   You must enter a value in both fields or leave them both empty:

— In the **Call-out Initiated** field, enter a valid text expression that replaces the %USER value in the audit trail when the call out is initiated.

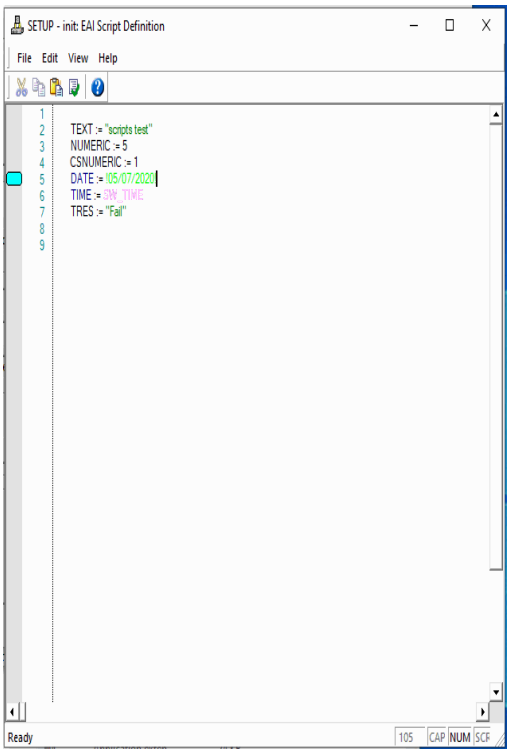
— In the **Call-out Complete** field, enter a valid text expression that replaces the %USER value in the audit trail when the call out is complete.

Note: Delayed release and Deadlines are not applicable to the EAIScript step so the **Delayed Release** and **Deadlines** tabs are grayed out for the EAIScript step.

6. Click the **Definition** tab, then click **Edit**. The **EAI Script Definition** Define the EAI Script dialog is displayed. You can define your script in this dialog.

Define the EAI Script

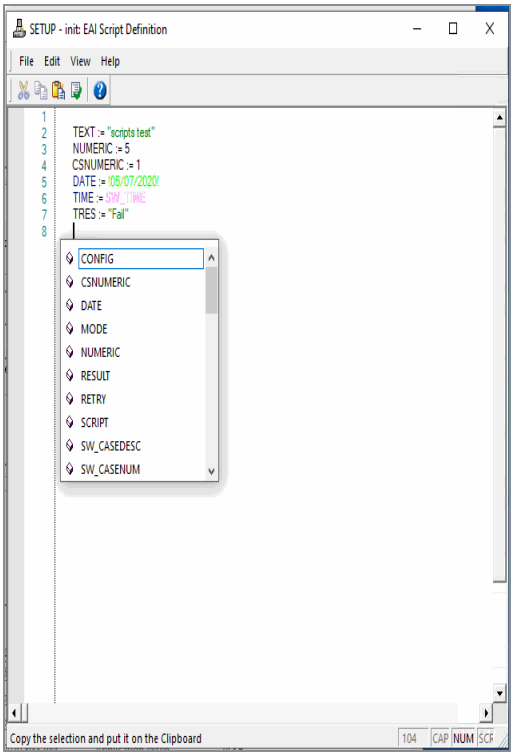
1. In the Properties pane, click **Edit**. The **EAI Script Definition** dialog opens and the script editor enables you to define the iProcess script that you want to run when the EAI step is processed (as shown in the example below).



The scripting language is the same that is used when creating scripts in other iProcess steps using the Script Editor. Define your script using one expression per line. It can contain blank lines and comment lines starting with a semi-colon (;).

Refer to Define the EAI Script for information about the expressions and functions you can use. For detailed information about creating a script, see Define the EAI Script.

2. Use Ctrl+Shift+L to insert iProcess case fields and add expressions in your script. When you press Ctrl+Shift+L, a list box with the iProcess case fields is displayed (as shown below).



You can select a field, and the field is inserted in the script editor.

3. Set your default option as auto-check, and check for any error in your script. For details, see Checking the Script. You can correct the errors in the script or ignore all errors. If you choose to ignore the errors, the step is marked as incomplete until the errors are corrected.

4. Click **Save** to save your script.

Tracing Problems in Your Scripts

To log the processing of EAI script steps by the run-time plug-in, you can set debugging on your background servers so that the processing is logged to a file. To set trace logging on, enter the following command on your TIBCO iProcess Engine:

```
swadm set_attribute 1 BG 0 DEBUG x=32
```

This causes EAI script trace level log messages to be output to text files in the *SWDIR***logs** directory on the machine hosting the TIBCO iProcess Engine (called bg*n*.log) where *n* is the number of the BG process.

Error Logging

When iProcess processes the EAI Script step, any errors encountered are logged in one of two ways:

- In the `SWDIR\logs\sw_warn` file - see Error Messages in the SWDIR\logs\sw_warn File
- Or via an audit trail entry for the case. This happens only if the case was started in a previous transaction so that there is a case to add an audit entry for. The EAI Script step will be retried by iProcess according to the number of retry settings configured for the TIBCO iProcess Engine.

Error Messages in the *SWDIR*\logs\sw_warn File

The following is a list of the possible EAI Script step error messages that can appear in the *SWDIR***logs****sw_warn** file.

Incorrectly defined WHILE/IF construct (or too many nested IF's).

Description

The script has been incorrectly constructed.

Action

Correct the WHILE/IF construct or remove the surplus IF statements. Use Trace logging to help you find the problem especially if it is a large script -see Tracing Problems in Your Scripts.

Invalid or non-boolean expression '<text from script line in question>' in WHILE statement.

Description

The invalid expression errors are not common in the **sw_warn** file because the script is syntax checked when you are defining it. However, the following can cause these errors to be logged:

- Deletion of a procedure field used in the expression (after the script was last edited).
- Use of an expression that is valid in the version of the TIBCO iProcess Modeler that the procedure was defined on but is not valid on the server that the expression is run on.

Action

Edit the script definition and check the script using the **Check Script** button. Or, you can use the keyboard shortcut Ctrl+U (for auto-check) or Ctrl+S (for manual check). Correct any errors that are reported.

The following are similar error messages that can be logged in the **sw_warn** file. These can be corrected by editing the EAI Script step and using the **Check Script** button to find any errors.

Invalid or non-boolean expression '<text from script line in question>' in IF statement

See the description of the previous message.

Invalid or non-boolean expression '<text from script line in question>' in ELSEIF statement

See the description of the previous message.

Error processing command expression '<text from script line in question>'

See the description of the previous message.

TIBCO Documentation and Support Services

For information about this product, you can read the documentation, contact TIBCO Support, and join TIBCO Community.

How to Access TIBCO Documentation

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

The Product Documentation website is updated frequently and is more current than any other documentation included with the product.

Product-Specific Documentation

The following documentation for this product is available on the TIBCO iProcess® Workspace (Windows) Product Documentation page:

Other TIBCO Product Documentation

When working with TIBCO iProcess® Script Plug-in, you may find it useful to read the documentation of the following TIBCO products:

- TIBCO ActiveMatrix BusinessWorks™
- TIBCO Business Studio™
- TIBCO Enterprise Message Service™
- TIBCO Hawk®
- TIBCO Rendezvous®

How to Contact Support for TIBCO Products

You can contact the Support team in the following ways:

- To access the Support Knowledge Base and getting personalized content about

products you are interested in, visit our product Support website.

- To create a Support case, you must have a valid maintenance or support contract with a Cloud Software Group entity. You also need a username and password to log in to the product Support website. If you do not have a username, you can request one by clicking **Register** on the website.

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