

TIBCO iProcess™ Objects (Java) for Linux

Release Notes

*Software Release 10.4.0
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Release Notes

Check the TIBCO Product Support web site at <http://support.tibco.com> for product information that was not available at release time. Entry to this site requires a username and password. If you do not have a username, you can request one. You must have a valid maintenance or support contract to use this site.

Topics

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New Features

This section lists new features in each release of the TIBCO iProcess Objects (Java) for Linux.



As we are transitioning from "Staffware" to "TIBCO," our version numbering system is also transitioning. Staffware version numbers included major, minor, maintenance release, and patch numbers, with parentheses (e.g., 10.2(0.0)). TIBCO version numbers include major, minor, and maintenance release numbers, without parentheses (e.g., 10.2.0). You will see both numbering systems used in documentation. For more information about version numbers, see [Engine and Server Version Numbers on page 4](#).

Version 10.4.0

New Audit Trail Messages (19410)

The following audit trail messages have been added to **SWAuditActionType**:

- swWIOpenBy = 59
- swWIKeptBy = 60

These new messages are added to the audit trail when a work item is opened and kept.

Encoding Using ICU Conversion Libraries for UTF-8 Support (41065)

ICU conversion libraries can now be used to specify the desired character encoding. This adds support for UTF-8.

To use the ICU conversion libraries, you must create the following environment variable and set it to the name of the converter you wish to use.

- TISOUnicodeConverterName

For a list of converter names, and information about each converter, see the following website:

<http://demo.icu-project.org/icu-bin/convexp>

Note that when using the ICU libraries, the converter you use must reserve positions 00 through 1F for the standard single-byte ASCII control characters. This ensures that the control characters do not otherwise occur in the byte stream. (The UTF-16 converter, for example, does not satisfy this requirement, and therefore, cannot be used.)

If the **TISOUUnicodeConverterName** environment variable does not exist, or is set to an invalid value, the ICU libraries are not used. In this case, the system looks for the **TISOMultiChar** environment variable. If the **TISOMultiChar** environment variable exists and is set to 1, UTF-8 (multi-byte) encoding is used, otherwise extended ASCII (single-byte) encoding is used. The system will only look at the **TISOMultiChar** environment variable if the **TISOUUnicodeConverterName** environment variable does not exist or is set to an invalid converter name.

For more information about ICU, see:

<http://icu.sourceforge.net/>

Version 10.3.0

This is the initial release of the TIBCO iProcess Objects (Java) on the Linux operating system.

For a description of the features available in the TIBCO iProcess Objects (Java), see the *TIBCO iProcess Objects Programmer's Guide* provided on the distribution CD.

Compatibility

TIBCO iProcess Objects Server

This version of the TIBCO iProcess Objects (Java) is backward-compatible with older versions of the TIBCO iProcess Objects Server. Note, however, that if new features are added to the TIBCO iProcess Objects (Java), you may also need a newer version of the TIBCO iProcess Objects Server to use those new features.

TIBCO Process / iProcess Engine

The “type” of TIBCO Process / iProcess Engine you are using also determines whether or not new functionality described in the [New Features](#) section is available to you. The two types of engines are:

- **TIBCO iProcess Engine** - This type of engine is required for some of the newer functionality that is described in the [New Features](#) section. If you are using a TIBCO iProcess Engine, you will also be using a TIBCO iProcess Objects Server that supports the functionality provided by the TIBCO iProcess Engine.
- **TIBCO Process Engine** - This was previously known as the “Staffware Server.” If you are using this type of engine, some of the newer functionality that is described in the [New Features](#) section is not available to you. If you are using a TIBCO Process Engine, you will also be using a TIBCO Process Objects Server that supports the functionality provided by the TIBCO Process Engine.

The TIBCO iProcess Objects (Java) will work with both “types” of TIBCO Process/ iProcess Objects Servers and TIBCO Process/iProcess Engines.

Engine and Server Version Numbers

As we are transitioning from "Staffware" to "TIBCO," the version numbers of the engines and servers are changing as well. Staffware version numbers included major, minor, maintenance release, and patch numbers, with parentheses (e.g., 10.2(0.0)). TIBCO version numbers include major, minor, and maintenance release numbers, without parentheses (e.g., 10.2.0). If a "hotfix" is produced (the equivalent to a patch), a fourth digit is added to the version number (e.g., 10.2.0.1). Hotfixes, however, are not available for general release — they are sent directly to customers.

A Staffware version number may also be preceded by an "i" (e.g., i10.0(0.0)), indicating that it is a TIBCO "iProcess" Engine or a TIBCO "iProcess" Objects Server that supports the functionality offered by TIBCO "iProcess" Engines.

Moving forward from version 10.2.0, all *new releases* of TIBCO iProcess Engines, TIBCO iProcess Objects Servers, and TIBCO iProcess Objects will use the 3-digit TIBCO version numbering system. The version number will also not include an "i" to indicate that it is a TIBCO iProcess Engine or a TIBCO iProcess Objects Server that supports the functionality of a TIBCO iProcess Engine; by default, all engines from 10.2.0 forward are TIBCO iProcess Engines, and all TIBCO iProcess Objects Servers from 10.2.0 forward support the functionality of TIBCO iProcess Engines.

You can determine whether you are using a TIBCO Process Engine or a TIBCO iProcess Engine by looking at the version number. The version number can be found in the first line of the `$WDIR\swdefs` (Windows) or `$SWDIR/swdefs` (UNIX) file.

The following summarizes version numbers for engines and servers:

- **TIBCO iProcess Engine** - Prior to version 10.2.0, these engines had an "i" in the version number, e.g., i10.0-o(5.3). From version 10.2.0 forward, the version number will be 3 digits, with no "i". (The database supported will be indicated in parentheses following the version number, e.g., 10.2.0 (Oracle).)
- **TIBCO Process Engine** - These will continue to use the Staffware numbering system. Their version number begins with 8 or 9, with no "i", e.g., 9.0-x(0.7).
- **TIBCO iProcess Objects Server** - These servers are used with TIBCO "iProcess" Engines. Prior to version 10.2.0, these servers had version numbers with an "i" (e.g., i10.0(4.0)). From version 10.2.0 forward, the version number of these servers will be 3 digits, with no "i" (e.g., 10.3.0).
- **TIBCO Process Objects Server** - These servers are used with the older TIBCO "Process" Engines. There will be no future maintenance releases of these servers, only "hotfixes" (patches) will be produced in the future. The fourth digit in the version number denotes the hotfix number (e.g., 9.0.2.1).

Other Information

Product Name Changes

Staffware was purchased by TIBCO Software Inc. in 2004. As a result of this purchase, product names have undergone a change. The table below shows how product names have changed from Staffware to TIBCO.

Staffware Name	TIBCO Name
Staffware Process Objects (SPO) Server	TIBCO iProcess™ Objects Server
Staffware Process Objects (SPO) COM Client	TIBCO iProcess™ Objects (COM)
Staffware Process Objects (SPO) Java Client	TIBCO iProcess™ Objects (Java)
Staffware Process Objects (SPO) C++ Client	TIBCO iProcess™ Objects (C++)
Staffware Process Objects (SPO) Director	TIBCO iProcess™ Objects Director
Staffware Server Objects (SSO) for .NET	TIBCO iProcess™ Server Objects (.NET)
Staffware Server Objects (SSO) for EJB	TIBCO iProcess™ Server Objects (Java)
Staffware iProcess Engine	TIBCO iProcess™ Engine
Staffware Process Definer (SPD)	TIBCO iProcess™ Modeler

Although the name "Staffware" has been removed from the product names, these products are all part of a suite of products called the "TIBCO Staffware Process Suite™."

You may still see references to Staffware, SPO, and SSO in the software (e.g., file and directory names) and documentation.

Procedure Key must include Version Number

When procedure version control was added to the TIBCO iProcess Objects (Java) in version 10.0(0.0), the procedure key was extended to include the version number component, as follows:

```
SWProc.getKey = HostingNode | Name | ProcMajorVer | ProcMinorVer
```

If both your TIBCO iProcess Objects (Java) and TIBCO iProcess Objects Server support procedure version control (message interface version 3.0.0 or newer), this new key format must be used when invoking the **itemByKey** method to extract an **SWProc** object from the lists returned by these methods: **getProcs**, **getAuditProcs**, **getStartProcs**, and **getProcVersions**.

Client applications that have procedure keys “hard coded” must be modified to include the procedure version component (*ProcMajorVer* | *ProcMinorVer*) if both the client and TIBCO iProcess Objects Server support procedure version control. If the **itemByKey** method is invoked without the version component in the key, an **swInvalidKeyErr** error is thrown. (Another solution is to use the **makeProc** method (which doesn't require the version number — it will default to the "default" version) to get the **SWProc** object, then use **getKey** to get the full key for use where it is required.)

If you include the procedure version number component in the key, but your TIBCO iProcess Objects Server does not support procedure version control, the client will be aware that the server does not expect the version component and will not include it when the key is sent to the server.

License Count may be a Negative Number

If the number of user licenses exceeds 32767, the **getLogonLicenseCnt** and **getLogonsAvailableCnt** methods on the **SWNodeInfoEx** object incorrectly return negative values. The workaround for this is to add 65536 to the negative value to obtain the correct license count value.

Note that the **getLogonLicenseCnt** and **getLogonsAvailableCnt** methods are not applicable if your TIBCO iProcess Engine includes CR 16592, which eliminates the requirement for user licenses. These methods always return -1 if your engine includes CR 16592.

Stopping/Restarting Application May Cause Application Server Error

If your client application is running under an application server (e.g., WebLogic), stopping and restarting the client application may result in the following error:

```
java.lang.UnsatisfiedLinkError: Native Library SWEJJNI.dll already loaded in another class loader
```

This error can occur under the following conditions:

- The TIBCO iProcess Objects (Java) classes are not included in the system CLASSPATH when starting the application server.
- The application is stopped and restarted.

The reason for this has to do with how the classes are loaded. Classes loaded by one `ClassLoader` instance will not have visibility to resources loaded by another `ClassLoader` instance unless they share a common parent `ClassLoader`.

For more information about this issue, see the following website:

<http://developer.java.sun.com/developer/bugParade/bugs/4225434.html>

This problem can be avoided by forcing the classes to be loaded by the system `ClassLoader` for the application server. This is done by including the TIBCO iProcess Objects (Java) classes in the `CLASSPATH` when starting the application server, as follows:

- Place all TIBCO iProcess Objects (Java) classes into a jar file (e.g., `SWEntObj.jar`).
- Add the path to this jar to the `CLASSPATH` defined in the server start script (`startWebLogic.cmd`), as follows:

```
set SW_CLASSES=D:\bea\user_projects\SWTest\applications\SWEntObj.jar
set CLASSPATH=%SW_CLASSES%
```



To install a new `SWEOJNI` library file will require bringing the application server down. There is no way to avoid this because of the JDK issue stated above.

Closed Issues

The table in this section list issues that were closed in the named releases.

Closed in Release	CR #	Summary
10.4.0	41065	<p>Support for UTF-8 needs to be added to TIBCO iProcess Objects (Java). Implemented. See Encoding Using ICU Conversion Libraries for UTF-8 Support (41065) on page 2.</p> <p>(Note: The following CRs are all related to this one and were included so that UTF-8 support would be complete: 32763, 19294, 18995, 18714, 18660, 18470.)</p>
10.4.0	32272	<p>If the makeNodeInfo method is called simultaneously from multiple threads on a fast, multiple-CPU machine, a core dump can occur.</p> <p>Corrected.</p>
10.4.0	30952	<p>The iProcess Objects Client is not returning the correct procedure information.</p> <p>Corrected.</p>
10.4.0	30118	<p>The lockItemsEx and lockItemsMarkings methods on SWWorkQ are not working properly — lockItemsEx is causing a stack overflow, and lockItemsMarkings is causing an invalid parameter error.</p> <p>Corrected.</p>
10.4.0	19410	<p>New audit trail messages for opening and keeping a work item need to be added to SWAuditActionType.</p> <p>Implemented. See New Audit Trail Messages (19410) on page 2.</p>

