

TIBCO iProcess[®] Engine (DB2) for UNIX and Linux

(Consolidated with TIBCO iProcess[®] Objects
Server and TIBCO iProcess[®] Director)

Release Notes

*Software Release 11.4.1
April 2014*

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Preface

TIBCO iProcess Engine provides the runtime execution environment for business processes developed using TIBCO Business Studio™, TIBCO iProcess® Workspace (Windows) and other TIBCO iProcess® Suite components.

Topics

- [Related Documentation, page vi](#)
- [Typographical Conventions, page viii](#)
- [Connecting with TIBCO Resources, page x](#)

Related Documentation

This section lists documentation resources you may find useful.

TIBCO iProcess Engine Documentation

The following documents form the TIBCO iProcess® Engine documentation set:

- *TIBCO iProcess Engine Installation* Read this manual for instructions on site preparation and installation.
- *TIBCO iProcess Engine 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. The appropriate information for TIBCO iProcess Objects Director and TIBCO iProcess Objects Server release notes are integrated into appropriate TIBCO iProcess Engine release notes.
- **TIBCO iProcess Suite Documentation** This documentation set contains all the manuals for TIBCO iProcess Engine and other TIBCO products in TIBCO iProcess® Suite. The manuals for TIBCO iProcess Engine are as follows:
 - *TIBCO iProcess Engine Architecture Guide*
 - **TIBCO iProcess Engine Administrator's Guides:**
 - TIBCO iProcess Engine Administrator's Guide*
 - TIBCO iProcess Objects Director Administrator's Guide*
 - TIBCO iProcess Objects Server Administrator's Guide*
 - **TIBCO iProcess Engine Database Administrator's Guides:**
 - TIBCO iProcess Engine (DB2) Administrator's Guide*
 - TIBCO iProcess Engine (Oracle) Administrator's Guide*
 - TIBCO iProcess Engine (SQL) Administrator's Guide*
 - *TIBCO iProcess swutil and swbatch Reference Guide*
 - *TIBCO iProcess Engine System Messages Guide*
 - *TIBCO iProcess User Validation API User's Guide*
 - *LDAPCONF Utility User's Guide*

Other TIBCO Product Documentation

You may find it useful to read the documentation for the following TIBCO products:

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

Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
<i>SWDIR</i>	<p>TIBCO iProcess Engine installs into a directory. This directory is referenced in documentation as <i>SWDIR</i>.</p> <p>For example, if <i>SWDIR</i> is set to C:\swserver\staffw_nod1 on a Windows server (on the C: drive), then the full path to the <code>swutil</code> command is C:\swserver\staffw_nod1\bin\swutil.</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>
bold code font	<p>Bold code font is used in the following ways:</p> <ul style="list-style-type: none">• In procedures, to indicate what a user types. For example: Type admin.• In large code samples, to indicate the parts of the sample that are of particular interest.• In command syntax, to indicate the default parameter for a command. For example, if no parameter is specified, MyCommand is enabled: MyCommand [enable disable]
<i>italic font</i>	<p>Italic font is used in the following ways:</p> <ul style="list-style-type: none">• To indicate a document title. For example: See <i>TIBCO ActiveMatrix BusinessWorks Concepts</i>.• To introduce new terms. For example: A portal page may contain several portlets. <i>Portlets</i> are mini-applications that run in a portal.• To indicate a variable in a command or code syntax that you must replace. For example: MyCommand <i>PathName</i>
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>

Table 1 General Typographical Conventions (Cont'd)




Convention	Use
	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.

Table 2 Syntax Typographical Conventions

Convention	Use
[]	<p>An optional item in a command or code syntax.</p> <p>For example:</p> <pre>MyCommand [optional_parameter] required_parameter</pre>
	<p>A logical OR that separates multiple items of which only one may be chosen.</p> <p>For example, you can select only one of the following parameters:</p> <pre>MyCommand param1 param2 param3</pre>
{ }	<p>A logical group of items in a command. Other syntax notations may appear within each logical group.</p> <p>For example, the following command requires two parameters, which can be either the pair param1 and param2, or the pair param3 and param4.</p> <pre>MyCommand {param1 param2} {param3 param4}</pre> <p>In the next example, the command requires two parameters. The first parameter can be either param1 or param2 and the second can be either param3 or param4:</p> <pre>MyCommand {param1 param2} {param3 param4}</pre> <p>In the next example, the command can accept either two or three parameters. The first parameter must be param1. You can optionally include param2 as the second parameter. And the last parameter is either param3 or param4.</p> <pre>MyCommand param1 [param2] {param3 param4}</pre>

Connecting with TIBCO Resources

How to Join TIBCOCommunity

TIBCOCommunity is an online destination for TIBCO customers, partners, and resident experts. It is 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 TIBCO Documentation

You can access TIBCO documentation here:

<http://docs.tibco.com>

How to Contact TIBCO Support

For comments or problems with this manual or the software it addresses, 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.

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

- [New Features, page 2](#)
- [Deprecated Features, page 13](#)
- [Compatibility, page 14](#)
- [Change History, page 15](#)
- [Restrictions, page 48](#)
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New Features

This section lists features added since the last major release (11.0) of this product.

Release 11.4.1

The following are new features in this release.

Set Case Priority for Deadlines ([IPE-3224](#))

You can set the priority for case deadlines. The `FORCE_DEADLINE_PRIORITY` and `USE_PRIORITY_DEADLINE` process attributes have been added to help set deadline priority.

See *TIBCO iProcess Engine Administrator's Guide* for more information about the process attributes. See *TIBCO iProcess Modeler Advanced Design* for more information about rules of case deadline priority setting.

Check the Time for Acquiring a User's Mutex ([IPE-3280](#))

You can define the maximum amount of time (in milliseconds) that an iProcess Objects Server process should take to acquire for a user's mutex by using the `SPO_USERMUTEX_WAITTIME` process attribute. If the time for acquiring a user's mutex is longer than the time you set in the process attribute, an error is logged in the `sw_warn` file.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Function for Calculating the Default Number of Message Processing Threads ([IPE-3282](#))

You can calculate the default number of message processing threads by using the defined function.

See *TIBCO iProcess Objects Server Administrator's Guide* for more information.

Remove the Orphaned Work Items ([IPE-3290](#))

Add the `swutil CHECKITEM` and `swutil CLEANITEM` commands to check and to remove the work items in a work queue that is cached by the `WIS` process, if the work items do not have matching records in the `outstanding_addr` table.

See *TIBCO iProcess swutil and swbatch Reference Guide* for more information.

Track the Time for Dequeuing a Message from an Mbox Set (IPE-3296)

The duration of dequeuing a message from an Mbox set is tracked and an error message is logged in the `sw_warn` file if the duration is equal to or over the time that is defined in the newly added `MBSET_DEQUEUE_TIMEOUT` process attribute.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Track the Time for Processing an EAI Step (IPE-3297)

The duration of processing an EAI step is tracked and an error message is logged in the `sw_warn` file if the duration is equal to or over the time that is defined in the `EAI_STEP_TIMEOUT` process attribute, which is newly added

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Add the MEMSET Debug String for Debugging iProcess Engine Server Processes (IPE-3298)

If the debugging is disabled for an iProcess Engine server process, the `MEMSET` debug string will be applied to record the debug information.

See *TIBCO iProcess Engine System Message Guide* for more information.

Case Counting Performance Improvements (IPE-3300)

The case counting performance has been improved by resetting the default value of the `CCOUNT_CACHE_REFRESH` process attribute to 0. In such cases, the cached list of cases currently on the system will not be refreshed and the case counting will not be performed.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Exact Timestamps for Instructions in Audit Trail (IPE-3369)

In previous releases, the timestamps used in the `audit_trail` table recorded when the actual Release actions of the instruction are carried out.

The timestamps in the `audit_trail` table now can either record when the user does a specified operation or record when BG or RPCBG processes an instruction.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Release 11.4.0

The following are new features in this release.

Define how many of the Latest Versions of Procedure Definition to be Cached (IPE-2975)

To define how many of the latest versions of procedure definitions are to be cached by the iProcess Objects Server processes, you can use the `RESTART_SPO_CACHE_PROC` process attribute when restarting or quick starting iProcess Engine, and use the `SPO_CACHE_PROC` process attribute when the iProcess Objects Server process starts normally.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Enable Quick Start Mode (IPE-2976)

You can quick start iProcess Engine server processes with quick start mode by running the following command:

```
swstart -q
```

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Define the Minimum Size of a Work Queue to Cache on a Restart (IPE-2990)

You can control the minimum size of a queue to be cached by a WIS process by using the `RESTART_WIS_CACHE_THRESHOLD` process attribute when quick starting or restarting iProcess Engine.

The `RESTART_WIS_CACHE_THRESHOLD` attribute will be used only for restart and quick start.

See *TIBCO iProcess Engine Administrator's Guide* and *TIBCO iProcess Engine Installation* for more information.

Procedure Level Events (IPE-3016)

Procedure level events are introduced with the following functionalities:

- You can define an event, which is triggered just before or after performing the purge, close, resurrect, suspend, or resume action, from the Events tab of the Properties dialog. The Event tab contains the following procedure level events: `OnBeforePurge`, `OnBeforeClose`, `OnAfterClose`, `OnBeforeResurrect`, `OnAfterResurrect`, `OnBeforeSuspend`, `OnAfterSuspend`, `OnBeforeResume`, and `OnAfterResume`. See *TIBCO iProcess Modeler Procedure Management* for more information on the Event tab.
- You can use the `CancelProcEvent` expression to cancel the purge, close, resurrect, suspend, or resume action that is set in the `OnBeforeEvent`

procedure level events. See *TIBCO iProcess Expressions and Functions Reference Guide* for more information.

- You can use `swutil` and `swbatch` utilities to purge or close cases without triggering events. See *TIBCO iProcess swutil and swbatch Reference Guide* for more information.
- The `SW_PURGE_WITHOUT_EVENT` and `SW_CLOSE_WITHOUT_EVENT` SSOLite command procedures are added to purge or close cases without triggering events. See the appropriate *TIBCO iProcess Engine (Database) Administrator's Guide* for more information.
- The definition of procedure events is stored in the `proc_event` table, and the information of cases that are interrupted by triggered events when processing the purge, close, resurrect, suspend, or resume operation is stored in the `case_event` table. The case information is recorded in the `case_event` table only when the BG process is handling the delayed release EAI steps, which are defined in the triggered event. See the appropriate *TIBCO iProcess Engine (Database) Administrator's Guide* for more information.

Set Auto-Purge and Deadlines for Cases (IPE-3019)

You can configure delay auto-purge and deadline for cases in TIBCO iProcess Engine. The information of the auto-purge delay is recorded in the `proc_index` table.

You can create a case deadline for a case to trigger an event after a specified time period, as well as update and delete a case deadline. The definitions of the case deadlines are recorded in the `proc_deadline` table. When a case is started, the information of the case deadline is saved in the `case_deadline_event` table.

See *TIBCO iProcess Modeler Procedure Management* for more information on the configuration of delay auto-purge and case deadlines, `proc_index`, `proc_deadline`, and `case_deadline_event` tables.

See *TIBCO iProcess Engine (Database) Administrator's Guide* for more information on the `proc_index` table.

See *TIBCO iProcess Expressions and Functions Reference Guide* for more information on the `CreateCaseDeadline`, `UpdateCaseDeadline`, and `DeleteCaseDeadline` functions.

Test the Event Mechanism Manually (IPE-3052)

You can test the event mechanism manually by using the following command:

```
swadm evloopback
```

When Process Sentinel starts, a `START` event is issued, or a `SHUTDOWN` event is

issued, the event mechanism is tested automatically.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Additional IP Addresses Support (IPE-3055)

IPv6 addresses are supported on Windows and Linux systems.

See *TIBCO iProcess Engine Installation Guide* for more information on the configuration.



When communicating with TIBCO iProcess Technology Plug-ins with an IPv6 address, you need to note that TIBCO iProcess Technology Plug-ins only supports inbound communication at runtime with IPv6 addresses.

- If you want to use an IPv6 address for inbound communication at design time, you must upgrade TIBCO iProcess Server Objects to a version that is higher than 11.4.0 after installing TIBCO BusinessWorks iProcess Plug-in, and make sure the upgraded version supports IPv6. Contact TIBCO Support for details of versions of TIBCO iProcess Server Objects that support IPv6.
- If you use TIBCO iProcess Server Objects as the protocol for inbound communication, make sure the Auto Config Date Format checkbox is unchecked in the Advanced tab of the iProcess Connection activity.

Release 11.3.1

There are no new features in this release.

Release 11.3.0

The following are new features in this release.

Include MailID in Output Messages From IAPJMS (IPE-1602)

MailID has been added to the output messages from IAPJMS so that users can use this mailID to build a tag for each work item.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Publish Step Description or Extended Step Description (IPE-1603)

The extended step description, along with the step description, can be published with a minimum length of 48 bytes for the messages which have a type_id equal to 1, in IAPJMS. You can use the IAPSCHEMA2_1 parameter to enable this feature.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

SWBATCH Returns Proper Return Codes When SWBATCH Fails (IPE-2322)

When all the START commands succeed, the return code from SWBATCH is SW_SUCCESS. If a SWBATCH command fails, SWBATCH will continue to execute the subsequent commands, and the return code will be the same as that of the first failure command.

Audit Changes to Case Data (IPE-2258)

When the case data is changed by using iProcess Insight, iProcess Workspace (Browser), or the setCaseData SSO interface, rather than by the normal step processing, such changes are logged in the audit trail.

See the TIBCO iProcess Insight documentation for how to change case data in TIBCO iProcess Insight.

See the TIBCO iProcess Workspace (Browser) documentation for how to change case data in TIBCO iProcess Workspace (Browser).

See *TIBCO iProcess Engine Administrator's Guide* for how to change case data in TIBCO iProcess Engine.

Reopen Cases via SSOLite Stored Procedures (IPE-1579)

Users can resurrect cases by using the SW_CASEREOPEN SSOLite stored procedure.

See the appropriate *TIBCO iProcess Engine Database Administrator's Guide* for more information.

Update Terminated Date/Time Display (IPE-1921)

Terminated Date/Time is now stored including Seconds. You can view this value by using SSO interface or the clients such as iProcess Workspace (Browser).

A New Case Start Interface and Instruction (IPE-1593)

A new case start SAL interface and instruction are introduced when a case is started by using iProcess Server Objects or iProcess Objects server. When the step is addressed to the current user, and the step is to be released, the iProcess Objects server internally uses the new SAL interface. The case start is implemented in one single SAL interface and with one single CASESTARTRELEASE message passing to the StartCase interface.

plist -p Identifies Procedure Templates (IPE-2013)

The `plist -p` command can identify whether the procedure is a template. In the Flag column returned by the command, flag `T` indicates that the procedure is a sub-procedure parameter template, and flag `I` indicates that the procedure is a sub-procedure.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Start Case Only If All Necessary Information Is Available (IPE-2191)

When you start a case through iProcess Server Objects JAVA code with both `aReleaseItem` and `aValidateFields` set to be `true`, and do not specify all the required fields in the first step, the case can not be started and an error is reported.

In previous releases, if you did not specify all the required fields in the form, the step could not be released, but the case was started with an error reported.

A New Case Start Interface and Instruction (IPE-2239)

A new case start SAL interface and instruction are introduced when a case is started by using iProcess Server Objects or iProcess Objects server. When the step is addressed to the current user, and the step is to be released, the iProcess Objects server internally uses the new SAL interface. The case start is implemented in one single SAL interface and with one single `CASESTARTRELEASE` message passing to the `StartCase` interface.

IMPORT and EXPORT XFR and XPD L Files to a Directory Outside of SWDIR/util (IPE-2257)

The XFR and XPD L files can be imported from and exported to a directory outside of the `SWDIR/util` directory.

See *TIBCO iProcess swutil and swbatch Reference Guide* for more information.

Audit Changes to Case Data (IPE-2259)

When you change the case data through iProcess Insight, iProcess Workspace (Browser), or the `setCaseData` iProcess Server Objects interface, rather than by using the normal step processing, such changes are logged in the audit trail.

See TIBCO iProcess Insight documentation for how to change case data in TIBCO iProcess Insight.

See TIBCO iProcess Workspace (Browser) documentation for how to change case data in TIBCO iProcess Workspace (Browser).

To audit such changes to case data, you must set the `AUDIT_CASEDATA_CHANGED` process attribute. See *TIBCO iProcess Engine Administrator's Guide* for how to set the process attribute.

Enable `plist -wvV` and `plist -wVv` (IPE-2321)

The `plist -wvV` and `plist -wVv` commands are enabled, which return all the items returned by the `plist -wv` and `plist -wV` commands.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Installation Is Separated by Roles (IPE-2256)

Installation is separated by roles:

- Binary Installation (by OS Admin) only copies binaries.
- DB Installation (by DB Admin) only runs DDL script.

The separation of roles during installation can enhance security in customers' environments because an OS administrator need not know some sensitive information (for example, DB user's credentials and server names) any more. The separation of roles during installation also facilitates the iProcess Engine upgrade because you need not install iProcess Engine schemas if you still use the existing database during the upgrade.

See *TIBCO iProcess Engine Installation* for more information.

TIBCO iProcess Objects Server Startup Performance Improvements (IPE-2554, IPE-2562)

TIBCO iProcess Objects Server startup performance has been improved significantly in the following two aspects:

- TIBCO iProcess Objects Server is started simultaneously with WIS. This means that it starts sooner in the startup procedure.
- Users and groups can be loaded at higher speeds.

Create Log Files in a Rotational Manner (IPE-2613)

The `sw_warn`, `sw_error`, `swentobjsv`, and `swentobjUA` log files are now created with the timestamp in the file name to record messages every day if a serious error occurs. For example:

`sw_warn20110831`, `sw_error20110831`, `swentobjsv_20110831`, and `swentobjUA_20110831`.

Log messages were recorded in one single log file titled as `sw_warn`, `sw_error`, `swentobjsv`, and `swentobjsvUA`. When errors occur frequently, log files can quickly become very large. It was not easy to archive old log files which could lead to the loss of old log files.

See *TIBCO iProcess Engine Administrator's Guide* and *TIBCO iProcess Objects Server Administrator's Guide* for more information.

Pass Complete Arrays Into and out of Sub-procedures (IPE-2535)

Complete arrays can be passed into and out of sub-procedures.

See *TIBCO iProcess Modeler Advanced Design* for more information.

Prioritizing the Work Performed by Background Processes (IPE-2480)

You can now set priorities for internal message queues when passing messages between iProcess processes such as from the background and the WISEs, or from SSOLite to the background.

See the appropriate *TIBCO iProcess Engine Database Administrator's Guide* for more information.

Bulk Operations for SSOLite (IPE-2423)

Support for bulk operations has been added by adding the `SW_SET_MBOX` and `SW_UNSET_MBOX` SSOLite procedures.

See the appropriate *TIBCO iProcess Engine Database Administrator's Guide* for more information.

Enable RPC Blocking From iProcess Workspace (Windows) (IPE-2348)

You can now prevent TIBCO iProcess Workspace (Windows) from accessing iProcess Engine by setting the `RPC_BLOCK` attribute to 1.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Exact Timestamps for Release Instructions in Audit Trail (IPE-2658)

In previous releases, the timestamps used in the `audit_trail` table recorded when the actual RELEASE actions of the instruction were processed.

The timestamps in the `audit_trail` table now record when the actual RELEASE actions of the instruction are carried out.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Redirect the Work Items of a Deleted User (IPE-2560)

When a user is deleted, the work items which are currently in the deleted user's queue can be redirected to the supervisor's queue, to a user-specified destination, or to the admin user's queue. The work items, which arrive at a deleted user after the user has been deleted, will be delivered to the undelivered queue.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Map an Attribute Which Contains an Underscore to One Which Doesn't Have One in LDAP (IPE-2604)

LDAP does not allow attributes with an underscore. An attribute with an underscore in iProcess Engine can be mapped to an attribute without an underscore in LDAP.

See *LDAPCONF Utility User's Guide* for more information about how to map an iProcess Engine attribute to the corresponding LDAP attribute.

TIBCO iProcess Engine Startup Performance Improvements (IPE-2552, IPE-2558, IPE-2563)

TIBCO iProcess Objects Server startup performance has been improved significantly in the following two aspects:

- TIBCO iProcess Objects Server is started simultaneously with WIS. This means that it starts sooner in the startup procedure.
- Users and groups can be loaded at higher speeds.

Log Files Directory Is Configurable (IPE-2732)

You can specify the log files directory by adding it in line 19 of the `staffpms` file located in the `SWDIR/etc` directory.



Ensure that the log files directory you specify is available, and has the same permissions to access it as the original log files directory.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

Log Files Directory Is Configurable (IPE-2733)

You can specify the log files directory by adding it in line 19 of the `staffpms` file located in the `SWDIR\etc` directory.



Ensure that the log files directory you specify is available, and has the same permissions to access it as the original log files directory.

Optionally Migrate Only Live Cases (IPE-2337)

You can choose to migrate only live cases from previous versions to a new version in one of the following ways:

- migrate only live cases for deployment from TIBCO Business Studio to TIBCO iProcess Engine by configuring the `RPC_TCP_LI` process attribute.



Case migration is not supported by TIBCO Business Studio currently.

See *TIBCO iProcess Engine Administrator's Guide* for more information.

- migrate only live cases from swutil by running the `swutil PROC RELEASE` command.

See *TIBCO iProcess swutil and swbatch Reference Guide* for more information.

Earlier Versions

For details of the new features implemented in earlier versions of the product, please see the Readme and Release Notes for that particular product release.

Deprecated Features

This section describes deprecated features and lists equivalent features that accomplish the same result, if relevant. Any use of a deprecated feature should be discontinued as it may be removed in a future release. You should avoid becoming dependent on deprecated features and become familiar with the equivalent feature.

Release 11.4.1

Deprecated Features

In this release, the support for Microsoft Windows Server 2003 is deprecated.

Removed Features

From this release, Microsoft Windows XP is no longer supported.

Release 11.4.0

No features are deprecated in this release.

Release 11.3.1

No features are deprecated in this release.

Release 11.3.0

No features are deprecated in this release.

Compatibility

In addition to other Version 11 TIBCO iProcess® Suite components, the following TIBCO products have been successfully tested for compatibility with Version 11.4.1 of TIBCO iProcess Engine.

Product	Version(s)
TIBCO iProcess® Decisions Server Plug-in	Version 10.3.0
TIBCO iProcess® Web Services Server Plug-in	Version 11.3.0
TIBCO iProcess® Technology Plug-ins	Version 11.4.1
TIBCO iProcess® Server Objects	Version 11.4.1

If you have any queries regarding product compatibility with this version of the iProcess Engine, contact TIBCO Support for further assistance.

Change History

The following JIRA issues and Modification Requests (MRs) have been implemented since the initial release of TIBCO iProcess Engine.

Release 11.4.1

Defect #	Description
IPE-734	Error messages were generated when deploying a procedure with EAI steps from TIBCO Business Studio to TIBCO iProcess Engine. Corrected.
IPE-1754	After starting a case, which contained only one step, the BG process crashed when the step deadline expired. Corrected.
IPE-3013	TIBCO iProcess Engine ran out of case numbers. Corrected.
IPE-3224	Add support to set priority for case deadlines. Implemented. See Set Case Priority for Deadlines (IPE-3224) on page 2.
IPE-3242	After installing EAICOM with TIBCO iProcess Engine, the following error message was continually displayed in the sw_error log file if the BG processes did not work due to the session level failover: <code>1945-Database error: idl_SQL_allocate_connection_from_pool() idl_SQL_enlist_connection() Failed (Statement ID - 0) (ORA-25402: transaction must roll back)</code> Corrected.
IPE-3252	When a Database Queue Daemon (DBQD) thread was updating the database that was related to an MBox message, another DBQD thread could cache the MBox message from the database. Corrected.
IPE-3269 (Parent JIRA IPE-3265)	When the iProcess Objects Server process caching procedures, the released version of procedures occasionally were in the version list rather than in the released version list. Corrected.

Defect #	Description
IPE-3270 (Parent JIRA IPE-3259)	The iProcess Objects Server process crashed after you deleted a withdrawn procedure. Corrected.
IPE-3271 (Parent JIRA IPE-3267)	The iProcess Objects Server process did not unlock the read/write lock each time for the procedure cache. Corrected.
IPE-3279	The watcher Process Sentinel process crashed when starting up process sentinels if you set the value of the TIMZONE process attribute containing a line break. Corrected.
IPE-3280	Add the SPO_USERMUTEX_WAITTIME process attribute to define the maximum amount of time (in milliseconds) that an iProcess Objects Server process should take to acquire for a user's mutex before reporting the time to the log file. Implemented. See Check the Time for Acquiring a User's Mutex (IPE-3280) on page 2 .
IPE-3282	Add a function to calculate the default number of message processing threads. Implemented. See Function for Calculating the Default Number of Message Processing Threads (IPE-3282) on page 2 .
IPE-3290	Add support to check and to remove work items in a work queue that is cached by the WIS process, but do not have matching records in the outstanding_addr table. Implemented. See Remove the Orphaned Work Items (IPE-3290) on page 2 .
IPE-3293 (Parent JIRA IPE-3319)	After executing the swstop command, the BG processes on the master node were not stopped. Corrected.
IPE-3296	Add support to track the duration for dequeuing a message from an Mbox set. Implemented. See Track the Time for Dequeuing a Message from an Mbox Set (IPE-3296) on page 3 .
IPE-3297	Add support to track the duration for processing an EAI step. Implemented. See Track the Time for Processing an EAI Step (IPE-3297) on page 3 .

Defect #	Description
IPE-3298	<p>Add the MEMSET debug string to record the debug information if the debugging is disabled for an iProcess Engine server process.</p> <p>Implemented. See Add the MEMSET Debug String for Debugging iProcess Engine Server Processes (IPE-3298) on page 3.</p>
IPE-3299	<p>Failed to upgrade from TIBCO iProcess Engine version 11.1 to 11.4.0 if you tried to upgrade TIBCO iProcess Engine more than once due to some stored procedures and tables were not dropped from the SSOLite package.</p> <p>Corrected.</p>
IPE-3300	<p>Case counting is not performed by default.</p> <p>Implemented. See Case Counting Performance Improvements (IPE-3300) on page 3.</p>
IPE-3306 (Parent JIRA IPE-3250)	<p>When creating an XList of work items from a queue by using TIBCO iProcess Objects (COM) and looping through the XList to lock each work item, after the first work item was locked and then released, the next work item failed to be locked.</p> <p>Implemented.</p>
IPE-3309 (Parent JIRA IPE-3257)	<p>After importing procedures through the XML Process Definition Language (XPDL) file, the access control on the library containing the imported procedures was reverted to the default settings.</p> <p>Corrected.</p>
IPE-3310 (Parent JIRA IPE-3287)	<p>The WIS process was suspended due to the m_IndexLock parameter was used in the CIndex::SetDeleted() and CIndex::IsDeleted() functions.</p> <p>Corrected.</p>
IPE-3311 (Parent JIRA IPE-3256)	<p>When connecting a LDAP server through a LDAP proxy server, the following error message was reported if the time delay between the two calls exceeded the idle timeout:</p> <p>An error has occurred in 2nd call to SW_LDAP_search(): Error whilst performing Search (entries = 0)</p> <p>Corrected.</p>
IPE-3312	<p>The number of connections between the IAPJMS process and TIBCO Enterprise Message Service increased when the IAPJMS process sent a message to TIBCO Enterprise Message Service after you have stopped the BG process.</p> <p>Corrected.</p>

Defect #	Description
IPE-3313	The user step following the <code>OnAfterClose</code> event was not displayed in the queue after closing the case to trigger the defined <code>OnAfterClose</code> event. Corrected.
IPE-3314 (Parent JIRA IPE-3305)	The TIBCO iProcess Engine user successfully logged in through TIBCO iProcess Workspace (Browser) with an expired and unusable password. Implemented.
IPE-3315 (Parent JIRA IPE-3307)	After changing password for a user while its SAL session was available, the TIBCO iProcess Engine user failed to log in with the new password. Implemented.
IPE-3324	The file descriptors leak occurred when the <code>IAPJMS</code> process sent messages to TIBCO Enterprise Message Service, which was not running. Corrected.
IPE-3326	The <code>DBQD</code> process was continually recording useless messages into the <code>DBQD_1_stdout</code> log file, which was located in the <code>SWDIR/logs/process</code> directory. Corrected.
IPE-3329	When creating a procedure with a Message Event Request (MER) message, the record of the last deleted procedure, which was monitored by its MER message, was not removed from the <code>iap_monitor</code> table and was used for the newly created procedure. Corrected.
IPE-3331	TIBCO iProcess Objects Server crashed when filtering work items by using F2 filter through the Work Item Server if one of the filter strings for a field exceeded 512 characters, which is the maximum capacity. Corrected.
IPE-3332 (Parent JIRA IPE-3304)	Error messages were recorded in the audit trail of a case when starting the sub-case if a script was mapped from a field of the procedure to a MEMO field of its sub-procedure. Corrected.

Defect #	Description
IPE-3335 (Parent JIRA IPE-3334)	A deadlock occurred in the iProcess Objects Server cache of procedures. Corrected.
IPE-3340 (Parent JIRA IPE-3304)	Error messages were recorded in the audit trail of a case when starting the sub-case if a script was mapped from a field of the procedure to a MEMO field of its sub-procedure. Corrected.
IPE-3341 (Parent JIRA IPE-3333)	The error message "cannot start a new transaction" was reported in the sw_error file when deleting user information if EAICOM was registered in TIBCO iProcess Engine. Corrected.
IPE-3343 (Parent JIRA IPE-3342)	The procedure information was missing when TIBCO iProcess Objects (C++ and Java) requested for the procedure information from iProcess Objects Server if the procedures were newly created or updated. Corrected.
IPE-3344	An iProcess Objects Server timeout exception was reported when TIBCO iProcess Workspace (Browser) client sent a message to the iProcess Objects Server process if the message capacity was exceeded. Corrected.
IPE-3358 (Parent JIRA IPE-3346)	More logs have been added to trace the information of the locks in the CIndex_MUTEX lock pool used by the WIS process. Implemented.
IPE-3359 (Parent JIRA IPE-3348)	A deadlock occurred which caused all the "worker" threads and the update thread in WIS process were suspended when more than one "worker" thread were processing the WIS session simultaneously. Corrected.
IPE-3361	Add the TIBCO Enterprise Message Service 8.0 option for Java Message Service provider when installing TIBCO iProcess Engine. Implemented.

Defect #	Description
IPE-3364	<p>TIBCO iProcess Server Manager was not displayed correctly in Internet Explorer and Firefox.</p> <p>Note: For Internet Explorer, you must use the compatibility view to display TIBCO iProcess Server Manager.</p> <p>Corrected.</p>
IPE-3365	<p>TIBCO iProcess Engine provides a new interface for setting priority for purging and closing messages with SSO.</p> <p>Implemented.</p>
IPE-3366	<p>TIBCO iProcess Objects Server uses the new SAL interface to support setting priority for purging and closing messages with SSO.</p> <p>Implemented.</p>
IPE-3369	<p>Add the EXACT_OPERATION_TIMESTAMP attribute to record in the audit trail either when the user does a specified operation or when BG or RPCBG processes an instruction.</p> <p>Implemented. See Exact Timestamps for Instructions in Audit Trail (IPE-3369).</p>
IPE-3373	<p>When starting TIBCO iProcess Engine, the IAPJMS process was not started if using JBoss EAP 6.1 after installing TIBCO iProcess Engine with JBoss selected as the JMS provider.</p> <p>Corrected.</p>
IPE-3375 <i>(Parent JIRA IPE-3367)</i>	<p>An error occurred when using TIBCO iProcess Server Objects to start a new case of a procedure which was released recently.</p> <p>Corrected.</p>
IPE-3379	<p>A transaction was not committed or rolled back when using the PROCMDR process to run the SELECT SQL statement in a loop.</p> <p>Corrected.</p>
IPE-3381	<p>Database scripts did not run successfully if using the scripts the second time when upgrading TIBCO iProcess Engine to version 11.4.1.</p> <p>Corrected.</p>
IPE-3383 <i>(Parent JIRA IPE-3371)</i>	<p>TIBCO iProcess Objects Server supports the extension of the length of the login password for TIBCO iProcess Engine to 32,768 bytes.</p> <p>Implemented.</p>

Defect #	Description
IPE-3384 (Parent JIRA IPE-3370)	The length of a password used for logging into TIBCO iProcess Engine, has been extended to 32,768 bytes. Implemented.
IPE-3385	Upgrade Tomcat to version 7.0.52. Implemented.
IPE-3386	Update TIBCO iProcess Engine to use new TIBCO logo. Implemented.

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Defect #	Description
IPE-163	<p>An error occurred when checking permissions of the running users due to the user name being case-sensitive on Windows systems.</p> <p>Corrected.</p>
IPE-2975	<p>Add the <code>RESTART_SPO_CACHE_PROC</code> process attribute to define how many of the latest versions of the procedure definition will be cached by the iProcess Objects Server processes when restarting or quick starting iProcess Engine. Add the <code>SPO_CACHE_PROC</code> process attribute to define this behavior when starting iProcess Engine normally.</p> <p>Implemented. See Define how many of the Latest Versions of Procedure Definition to be Cached (IPE-2975) on page 4.</p>
IPE-2976	<p>Add a new option <code>-q</code> to the <code>swstart</code> command for quick starting iProcess Engine.</p> <p>Implemented. See Enable Quick Start Mode (IPE-2976) on page 4.</p>
IPE-2990	<p>The <code>RESTART_WIS_CACHE_THRESHOLD</code> process attribute, defining the threshold number of work items in a work queue, is added to determine whether to cache all the work items in the work queue when a WIS process restarts or quick starts.</p> <p>Implemented. See Define the Minimum Size of a Work Queue to Cache on a Restart (IPE-2990) on page 4.</p>
IPE-3014	<p>The <code>CNUM_SEQ_CACHE</code> and <code>REQID_SEQ_CACHE</code> attributes are applied to SSOLITE for SQL Server and DB2 databases. The default values of <code>CNUM_SEQ_CACHE</code> and <code>REQID_SEQ_CACHE</code> attributes for SSOLITE on SQL Server and DB2 are changed to 10.</p> <p>Implemented.</p>
IPE-3016	<p>The procedure level event is added to TIBCO iProcess Engine to record information about cases that are interrupted by triggered events when processing the purge, close, resurrect, suspend, or resume operation.</p> <p>Implemented. See Procedure Level Events (IPE-3016) on page 4.</p>
IPE-3017	<p>Changed the default values of the <code>CNUM_SEQ_CACHE</code> and <code>REQID_SEQ_CACHE</code> process attributes to 5 for the iProcess Objects, and SSOLITE on Oracle. Changed the default value of the <code>WIS_UPDATE_PERIOD</code> attribute to 20.</p> <p>Corrected.</p>

Defect #	Description
IPE-3019	Add support to delay the case auto-purge operation and to set case deadlines. Implemented. See Set Auto-Purge and Deadlines for Cases (IPE-3019) on page 5 .
IPE-3020 (Parent JIRA IPE-2978)	The message priority was not controlled by setting the value of the SW_CP_VALUE field through TIBCO ActiveMatrix BusinessWorks Plug-in. Corrected.
IPE-3028	Upgrade Java from version 1.6 to 1.7 on all platforms of TIBCO iProcess Engine. Implemented.
IPE-3036	An error message was logged in the seo_error log when starting TIBCO iProcess Objects Server after upgrading iProcess Engine to version 11.3.1. Corrected.
IPE-3037 (Parent JIRA IPE-3018)	The EAI SQL step failed when inserting more than 4,000 characters into a memo field. Corrected.
IPE-3038 (Parent JIRA IPE-2967)	Mapping from the sub-procedure fields to expressions continued after the "sal_validsh (): session_lock (21248) failed" error occurred, resulting in incorrect mappings. Corrected.
IPE-3039 (Parent JIRA IPE-2981)	Users imported from the LDAP Server could log in through TIBCO iProcess Workspace (Windows) or TIBCO iProcess Workspace (Browser) with an incorrect password. Corrected.
IPE-3040 (Parent JIRA IPE-3004)	The trigger event operation did not work when the case number was greater than 2147483647. Corrected.
IPE-3041 (Parent JIRA IPE-3005)	When releasing a script, the CALL function did not work if the scriptname parameter in the function was not enclosed in double quotation marks. Corrected.

Defect #	Description
IPE-3042 (Parent JIRA IPE-3025)	When using the <code>JumpTo</code> function to jump from main procedures to dynamic sub-procedures, the "unexpected exception, Message Item not found." error message was reported. Corrected.
IPE-3043 (Parent JIRA IPE-3030)	If the user name of a case had been changed, for example, changing S02460 to s02460, the original user was inserted into the <code>leavers</code> and <code>redir_defn</code> tables as a recently deleted user. Corrected.
IPE-3045 (Parent JIRA IPE-2974)	When attempting to release a work item, which contained fields with validations, error messages were generated in the TIBCO iProcess Objects Server log file. Corrected.
IPE-3046 (Parent JIRA IPE-2994)	When creating an XList of work items from a queue by using TIBCO iProcess Objects (COM) and looping through the XList to lock each work item, after the first work item was locked and then released, other work items failed to be locked. Corrected.
IPE-3052	Add the <code>swadm EVLOOPBACK</code> command to test event mechanism manually, and report error messages if events do not work. Implemented. See Test the Event Mechanism Manually (IPE-3052) on page 5 .
IPE-3055	IPv6 addresses are supported on Windows and Linux systems. Implemented. See Additional IP Addresses Support (IPE-3055) on page 6 .
IPE-3071	TIBCO iProcess Engine could not work for DB2 on Linux systems when using IPv6 addresses. Corrected.
IPE-3072 (Parent JIRA IPE-3048)	After cases were migrated to a new procedure version by using the <code>swutil IMPORT +c</code> command, duplicated work items were displayed in a case when triggering an event. Corrected.

Defect #	Description
IPE-3073 (Parent JIRA IPE-3053)	Case start was slow after installing TIBCO iProcess Engine 11.3.0_HF-008. Corrected.
IPE-3076	IPv4 addresses are supported for rpcbind on Linux systems. Implemented.
IPE-3078	After migrating existing cases of a procedure to a new version, the existing cases were still in the old version. Corrected.
IPE-3088	An error message was not displayed when an LDAP attribute was mapped for more than one iProcess property. Corrected.
IPE-3090	The F3 filter failed to filter work items via Case Data Queue Parameter (CDQP) if the field held 255 characters, the maximum capacity. Corrected.
IPE-3096	The MEMATTS sections in the old version and new version of the procedures did not match after the XFR file was imported by using the SWUTIL command. Corrected.
IPE-3115	After you have forwarded a work item from a cached queue to another queue to be cached, the work item was not displayed in the destination queue. Corrected.
IPE-3116	Only iProcess Engine database user (swuser) account is used to connect to databases. Implemented.
IPE-3122 (Parent JIRA IPE-3063)	When the BG process failed to handle the SUBDONE message because of a deadlock, the BG process did not roll back the affected transaction. Corrected.
IPE-3126 (Parent JIRA IPE-3101)	Chinese characters were not retrieved correctly by using iProcess Server Objects (Java) if they were split by TIBCO iProcess Objects Server. Corrected.

Defect #	Description
IPE-3145 (Parent JIRA IPE-3131)	An error occurred when using the output mapping script to assign the sub-procedure output values to the Date type and Time type fields of the main procedure. Corrected.
IPE-3155	The archived log files were not deleted as per the <code>LogFileMaxArchives</code> setting. Corrected.
IPE-3156 (Parent JIRA IPE-3144)	The user defined attributes of Group were missing after synchronizing iProcess user data with the LDAP directory by using the LDAPCONF utility. Corrected.
IPE-3177	If an error occurred when closing a case, the BG process did not catch the error nor roll back the transaction.
IPE-3199	Upgrading TIBCO iProcess Engine to version 11.4.0 failed due to an error occurred when running the <code>swadm find_master</code> command. Corrected.
IPE-3205	Upgrade Tomcat from version 6.0.35 to 7.0.40. Implemented.
IPE-3209 (Parent JIRA IPE-3189)	The background (BG) processes crashed because iProcess Engine unexpectedly released memory addresses twice. Also, a memory leak occurred in the BG processes. Corrected.
IPE-3237 (Parent JIRA IPE-3231)	When you close or purge a case that contains sub-cases, delete certain <code>audit_trail</code> entries to reduce the number of returned sub-cases. Implemented.
IPE-3243 (Parent JIRA IPE-3240)	After importing a new version of a procedure by using the <code>SWUTIL</code> command, MEMO fields are created for the new version of the procedure referencing the same MEMO ID. Corrected.

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Defect #	Description
IPE-2008	An <code>sw_warn</code> error message displayed when processing the audit and PROCCASE messages. This error only occurred when running a procedure, which contained sub-procedures and Transaction Control steps. Corrected.
IPE-2664 (Parent JIRA IPE-2168)	TIBCO iProcess Objects Server took a long time to rebuild a work item due to getting information about users and attributes from its database rather than from its cache. Corrected.
IPE-2770	After upgrading TIBCO iProcess Engine from a previous version to 11.3.0, messages in queues were lost, and additional queues manual-created were not upgraded. Corrected.
IPE-2771	Change the data type of the <code>reqid</code> field in the <code>outsanding_addr</code> table from 2 ³² to 2 ⁶⁴ . Implemented.
IPE-2775	An error occurred when running the <code>swutil IMPMONITOR</code> command. Corrected.
IPE-2776 (Parent JIRA IPE-1992)	When the <code>ReqID</code> value was greater than 2 GB, work items were not retrieved. Corrected.
IPE-2788 (Parent JIRA IPE-2784)	Add the new <code>salq_list_sfinditem</code> interface to retrieve the work item index, and to improve the performance of TIBCO iProcess Server Objects operations, including the <code>lockitem</code> , <code>unlockitem</code> , <code>releaseitem</code> , <code>keepitem</code> , <code>forwarditem</code> , and <code>undo</code> operations. Implemented.
IPE-2789 (Parent JIRA IPE-2785)	A new <code>salq_list_sfinditem</code> interface has been added to retrieve the work item index. It also improves the performance of TIBCO iProcess Server Objects operations, including the <code>lockitem</code> , <code>unlockitem</code> , <code>releaseitem</code> , <code>keepitem</code> , <code>forwarditem</code> , and <code>undo</code> operations. Implemented.

Defect #	Description
IPE-2793	Memory usage of the BGPREDICT process grew uncontrollably, which exhausted system memory. Corrected.
IPE-2799	When transforming Workflow Standard XML Process Definition Language (XPDL) into iProcess procedures, duplicated Numeric Object IDs of the user or EAI steps were created. Corrected.
IPE-2801	Memory usage of the BGPREDICT process grew uncontrollably, which exhausted system memory. Corrected.
IPE-2805 (Parent JIRA IPE-2793)	The memory usage of the BGPREDICT process grew uncontrollably. Corrected.
IPE-2807	After upgrading TIBCO iProcess Engine version 11.0.1.7.1 to 11.3.0 in Silent Mode, the database schema was not upgraded. Corrected.
IPE-2809 (Parent JIRA IPE-2798)	Add more logs in the program to trace global user cache in TIBCO iProcess Engine and iProcess Objects Server. Implemented.
IPE-2811 (Parent JIRA IPE-2786)	The <code>+v major.minor</code> option of the <code>swutil EXPORTLIB</code> command did not affect the version of the reference template if the exported procedure library did not contain the template. Implemented.
IPE-2816 (Parent JIRA IPE-2753)	If a procedure was deleted from TIBCO iProcess Engine and TIBCO iProcess Objects Server did not refresh the procedure list, when importing a new procedure with the same name as the previously deleted one, TIBCO iProcess Objects Server did not receive the new procedure, even though the procedure list was then refreshed. Corrected.

Defect #	Description
IPE-2820 (Parent JIRA IPE-2813)	Running a process at LogLevel=4 caused the TIBCO iProcess Objects Server process to crash. Corrected.
IPE-2825 (Parent JIRA IPE-2810)	The salq_list_sfinditem interface could not unlock work items using the swadmin utility. Corrected.
IPE-2826 (Parent JIRA IPE-2818)	An error occurred when releasing steps made by TIBCO iProcess Objects Server contained embedded fields. Corrected.
IPE-2827 (Parent JIRA IPE-2747)	CPU was 100% occupied when the swdbqd process was running. Corrected.
IPE-2830 (Parent JIRA IPE-2780)	Although a message was sent to IAPJMS successfully, the BG process was suspended because it did not receive any receipt from IAPJMS. Corrected.
IPE-2831 (Parent JIRA IPE-2531)	When TIBCO iProcess Objects Server communicated with the WIS and WQS processes using the RPC client in the SAL session, the RPC call was suspended. Corrected.
IPE-2838 (Parent JIRA IPE-2766)	The FIL definition was not enabled in the iProcess Objects Server process, which resulted in low performance. Corrected.
IPE-2845	Increase the maximum number of procedures from 4096 to 32768. Implemented.
IPE-2847 (Parent JIRA IPE-1608)	Improve the performance of the WIS process. Implemented.
IPE-2850 (Parent JIRA IPE-2380)	Improve the performance of the WIS process filtering by configuring the WIS_FILTER_LOCALE_SENSITIVE parameter. This improvement makes the case sensitivity for Russian characters configurable. Implemented.

Defect #	Description
IPE-2851	The performance of the WIS process filtering was low when UTF-8 was not configured. Corrected.
IPE-2855	A deadlock occurred when updating the deleted-item list. Corrected.
IPE-2863	Change the data type of case number and case ID in the database tables from 2^{31} to 2^{32} . Implemented.
IPE-2866	If the Event, Transaction Control step, or step is blank, its procedure definition will not be cached in memory by the SPO process. Implemented.
IPE-2865	If an Event, Transaction Control step, or step is blank, its procedure definition is not cached in memory by the BG process. Implemented.
IPE-2867	Add the <code>line_cache_compact()</code> function to remove redundant or unused memory when caching procedure definition. Implemented.
IPE-2869	Change the data type of the <code>wait_id</code> field in the <code>wait_step</code> , <code>wait</code> , <code>sequences</code> , and <code>seq_val</code> tables to 2^{32} . Implemented.
IPE-2875	Add the <code>SUBCASE_START_AUTOCOMMIT</code> process attribute to allow a Transaction Control step to be implicitly inserted as the first step for all sub-cases. Implemented.
IPE-2876	Reduce the memory size of each index when filtering work queues. Implemented.
IPE-2877	An option has been added to configure whether or not to free up the WIS session in the WIS memory after the lock, keep, forward, release, undo, or unlock operation. Implemented.

Defect #	Description
IPE-2879 (Parent JIRA IPE-2835)	A configuration flag has been added in the configuration file to specify whether or not TIBCO iProcess Objects Server caches the EAI step definition. Implemented.
IPE-2881	Upgrade Tomcat from version 5.5.31 to 6.0.35. Implemented.
IPE-2882	Add the <code>FREE_WIS_SESSION</code> process attribute to configure whether or not to free up the WIS session in the WIS memory after the lock, keep, forward, release, undo, or unlock operation. Implemented.
IPE-2884	If the <code>RPC_BLOCK</code> process attribute was configured to prevent iProcess Workspace (Windows) from accessing iProcess Engine, spelling errors displayed in the error message when logging in to TIBCO iProcess Workspace (Windows) or TIBCO iProcess Administrator. Corrected.
IPE-2891	The <code>sw_error.log</code> and <code>sw_warn.log</code> files only record information received on the current date. When the date changes, if new information needs to be recorded to the log files, the previously generated <code>sw_error.log</code> and <code>sw_warn.log</code> files will be archived with the new file names, <code>sw_errortimestamp.log</code> and <code>sw_warntimestamp.log</code> . Implemented.
IPE-2892	The <code>swentobjsv</code> log file is now created with the file name: <code>swentobjsv.log</code> . In the mean time, the previous log file will be archived as <code>swentobjsv_timestamp.log</code> , where the <i>timestamp</i> variable is the date when that log is generated. Implemented.
IPE-2916	The default stack size for TIBCO iProcess Objects Server is now 2 MB per thread. Implemented.
IPE-2920 (Parent JIRA IPE-2880)	An error occurred when running a TIBCO BusinessWorks project to get a case number for a graft step or sub-procedure. Corrected.

Defect #	Description
IPE-2921	Add the Extra debugging logs to detect the reason for the WIS process crash. Implemented.
IPE-2936	Upgrade Java from version 1.5 to 1.6 on AIX. Implemented.
IPE-2937 (Parent JIRA IPE-2927)	TIBCO iProcess Objects Server did not complete the login message, and returned the value 1 to the password expired message when logging in to TIBCO iProcess Workspace (Browser) with an expired password. Corrected.
IPE-2939 (Parent JIRA IPE-2922)	Add the SHUTDOWN_MIGRATION_MESSAGE process attribute to configure whether or not to include the audit message in the published Monitor Event Detail message. The audit message (with activity ID 34), which writes the procedure migration information. Implemented.
IPE-2940	Add the MAINCASE_START_SUTOCOMMIT process attribute to allow a Transaction Control step to be implicitly inserted as the first step for all main cases. Implemented.
IPE-2965	When attempting to release a work item, which contained the fields with validations, error messages were generated in the TIBCO iProcess Objects Server log file. Corrected.

Release 11.3.0

Defect #	Description
IPE-1555 MR 43496	TIBCO Business Studio renumbered the steps of an existing procedure in the new version. As a result, a wait step did not recognize the steps during migration, causing it to suspend. Corrected.
IPE-1576 (Parent JIRA IPE-2319)	The Background (BG) Processes dumped memory with the error Insufficient Memory. Corrected.

Defect #	Description
IPE-1577 (Parent JIRA IPE-1581)	The BG Processes dumped memory with the error Insufficient Memory. Corrected.
IPE-1579 MR 43545	User can reopen cases via SSOLite stored procedures. Implemented. See Reopen Cases via SSOLite Stored Procedures (IPE-1579) on page 7 .
IPE-1593 MR 43571	Introduce an atomic case start interface and instruction. Implemented. See A New Case Start Interface and Instruction (IPE-1593) on page 7 .
IPE-1602 MR 43607	Include MailID in output messages from IAPJMS. Implemented. See Include MailID in Output Messages From IAPJMS (IPE-1602) on page 6 .
IPE-1603 MR 43610	Publish step description or extended step description. Implemented. See Publish Step Description or Extended Step Description (IPE-1603) on page 6 .
IPE-1913	Installing TIBCO iProcess Engine failed if SQL Server used the Windows authentication account. Corrected.
IPE-1921 MR 41920	Terminated Date/Time on TIBCO iProcess Workspace (Browser) displayed 00 instead of the actual seconds. Corrected. See Update Terminated Date/Time Display (IPE-1921) on page 7 .
IPE-2013	Expand the <code>plist -p</code> command to identify procedure templates. Implemented. See plist -p Identifies Procedure Templates (IPE-2013) on page 8 .
IPE-2016	Deploying libraries from TIBCO Business Studio resulted in the creation of the date 31/12/3000 rather than the actual date. Corrected.
IPE-2191 MR 41628	A case can be started now only if all necessary information is available. Implemented. See Start Case Only If All Necessary Information Is Available (IPE-2191) on page 8 .

Defect #	Description
IPE-2239 MR 43572	<p>A new instruction is introduced where the case start is implemented in one single SAL interface and with one single CASESTARTRELEASE message passing to the background.</p> <p>Implemented. See A New Case Start Interface and Instruction (IPE-2239) on page 8.</p>
IPE-2254 (Parent JIRA IPE-2263)	<p>Upon deployment from TIBCO Business Studio to TIBCO iProcess Engine, StepIDs were not maintained correctly. TIBCO iProcess Engine uses the StepID as part of its processing for processing a number of actions including Waits and Deadlines. Therefore, if these numbers change, the process does not progress as expected.</p> <p>Corrected.</p>
IPE-2256	<p>Make installation separated by roles.</p> <p>Implemented. See Installation Is Separated by Roles (IPE-2256) on page 9.</p>
IPE-2257 MR 11523	<p>The swutil IMPORT and EXPORT commands are expanded to import and export XFR files to a directory outside of SWDIR\util.</p> <p>Implemented. See IMPORT and EXPORT XFR and XPD L Files to a Directory Outside of SWDIR/util (IPE-2257) on page 8.</p>
IPE-2258	<p>Audit changes to case data.</p> <p>Implemented. See Audit Changes to Case Data (IPE-2258) on page 7.</p>
IPE-2259	<p>Audit changes to case data.</p> <p>Implemented. See Audit Changes to Case Data (IPE-2259) on page 8.</p>
IPE-2282	<p>Issuing an event only updated the data in the parent procedure without propagating the changes to the sub-cases.</p> <p>Corrected.</p>
IPE-2316 (Parent JIRA IPE-2342)	<p>The WIS process crashed because of a buffer overrun.</p> <p>Corrected.</p>
IPE-2321	<p>The <code>plist -wv</code> and <code>plist -wV</code> commands can be used together.</p> <p>Implemented. See Enable plist -wvV and plist -wVv (IPE-2321) on page 9.</p>

Defect #	Description
IPE-2322	<p>The SWBATCH command utility should return proper return codes when a command fails.</p> <p>Corrected. See SWBATCH Returns Proper Return Codes When SWBATCH Fails (IPE-2322) on page 7.</p>
IPE-2337	<p>Provides a user the option of only migrating live cases.</p> <p>Implemented. See Optionally Migrate Only Live Cases (IPE-2337) on page 12.</p>
IPE-2344	<p>A memory leak occurred when logging into or out of a TIBCO iProcess Objects Server on a 64-bit operating system.</p> <p>Corrected.</p>
IPE-2345	<p>A memory leak occurred when logging into or out of a TIBCO iProcess Objects Server on a 64-bit operating system.</p> <p>Corrected.</p>
IPE-2347 (Parent JIRA IPE-2338)	<p>The case data fields were not returned when an XPDL file was imported using the <code>SWUTIL IMPORTLIB</code> command.</p> <p>Corrected.</p>
IPE-2348	<p>Add support to enable rpc blocking from iProcess Workspace (Windows).</p> <p>Implemented. See Enable RPC Blocking From iProcess Workspace (Windows) (IPE-2348) on page 10.</p>
IPE-2357 (Parent JIRA IPE-1402)	<p>The migration operation failed when running the post-install script <code>swinitora</code> to upgrade TIBCO iProcess Engine version 10.6.1 to 11.0.2 or higher.</p> <p>Corrected.</p>
IPE-2359 (Parent JIRA IPE-2349)	<p><code>STAFFIFC.EXE</code> crashed when running the <code>swutil MOVESYSINFO</code>, <code>swutil IMPORT</code>, <code>swutil IMPORTLIB</code>, and <code>swutil EVENT</code> commands.</p> <p>Corrected.</p>
IPE-2361 (Parent JIRA IPE-1522)	<p>When sending an email by the TIBCO iProcess Email Plug-in, the <code>sent time</code> value of the mail in the Microsoft Outlook inbox was incorrect.</p> <p>Corrected.</p>
IPE-2363 (Parent JIRA IPE-2002)	<p>The Data tab was blank in TIBCO iProcess Workspace (Browser), when using the <code>SWUTIL</code> command to import an XPDL file into TIBCO iProcess Engine.</p> <p>Corrected.</p>

Defect #	Description
IPE-2364 (Parent JIRA IPE-2336)	The filtering result was incorrect because a Case Data Queue Parameter (CDQP) was not defined in procedures. It must be defined in procedures <i>and</i> used as a filtering parameter to filter correctly. Corrected.
IPE-2366 (Parent JIRA IPE-2276)	After importing the participation list, Work Queue Server (WQS) crashed when executing the MOVESYSINFO function. Corrected.
IPE-2386 (Parent JIRA IPE-2367)	Caches the user information to improve performance. Doing so prevents repeated retrievals of the same information from the database, and limits the frequency of cache updates to only when there is an update to user information. Implemented.
IPE-2395 (Parent JIRA IPE-1448)	The Background (BG) processes crashed when processing an instruction followed by a JumpTo SSOLite stored procedure call. Corrected.
IPE-2396 (Parent JIRA IPE-2393)	The upgrade script did not run correctly for TIBCO iProcess Engine 11.1.2. Corrected.
IPE-2397 (Parent JIRA IPE-2394)	The performance of the WIS filtering was low when UTF-8 was not configured. Corrected.
IPE-2399 (Parent JIRA IPE-2398)	Improve the performance of the WIS filtering, make the case sensitivity for Russian characters configurable. Corrected.
IPE-2407 (Parent JIRA IPE-2268)	The BG processes were stuck at EAI mail steps. Corrected.
IPE-2408 (Parent JIRA IPE-2401)	The BG processes were stuck at EAI mail steps. Corrected.

Defect #	Description
IPE-2409 (Parent JIRA IPE-2400)	EAI Oracle Step failed when inserting more than 4,000 characters into a memo field. Corrected.
IPE-2423	Add support for bulk operations to using a different MBOX SET. Implemented. See Bulk Operations for SSOLite (IPE-2423) on page 10 .
IPE-2446 (Parent JIRA IPE-2003)	A memory leak occurred in TIBCO iProcess Objects Server when accessing audit trail records (including type_id 16) for a main procedure from which the sub cases had been previously removed. Corrected.
IPE-2447 (Parent JIRA IPE-2242)	A memory leak occurred on the TIBCO iProcess Objects Server when the work items were unlocked. Corrected.
IPE-2449 (Parent JIRA IPE-1566)	The &, <, >, ", and \ characters in the XML output of WorkQueueDeltajms interfaces were incorrectly normalized. Corrected.
IPE-2451 (Parent JIRA IPE-1559)	When SW_QPARAMn was changed to the Date type, the result of the filtering operation was incorrect. Corrected.
IPE-2453 (Parent JIRA IPE-1596)	IAPJMS only published the changed values for OPEN/KEEP events, not all the values. Corrected.
IPE-2454 (Parent JIRA IPE-2354)	Some improvements to input validation should be added in the TIBCO iProcess Engine Server Manager. Implemented.
IPE-2455 (Parent JIRA IPE-2365)	When importing the XFR file to TIBCO iProcess Engine, the security information was corrupted occasionally, and the corrupted security data in the XFR file was not reset automatically. Corrected.

Defect #	Description
IPE-2459 (Parent JIRA IPE-1606)	When executing the procedure EAI_BW (delayed released) > EAI_SCRIPT > EAI_BW (delayed released), the second step, EAI_BW (delayed released), was executed twice. Corrected.
IPE-2460 (Parent JIRA IPE-1605)	After resuming a case from the Suspend state, the case did not proceed to the next step. Corrected.
IPE-2461 (Parent JIRA IPE-1610)	Releasing a case caused TIBCO iProcess Objects Server to suspend. Corrected.
IPE-2462 (Parent JIRA IPE-2264)	When changing the password in TIBCO iProcess Engine, the chgpwd process was stuck and occupied near 100% CPU if the new password violated the Operating System rules. Corrected.
IPE-2463 (Parent JIRA IPE-2265)	The RPC_POOL process was suspended when the serverrun function was called in the script. Corrected.
IPE-2465 (Parent JIRA IPE-2266)	Performance was getting low when filtering the SW_PARAMn field. Corrected.
IPE-2468 (Parent JIRA IPE-2346)	TIBCO iProcess Objects Director needs to allocate a user to the TIBCO iProcess Objects Server that has opened a SAL session for the user. Implemented.
IPE-2475 (Parent JIRA IPE-2267)	The performance of the user_cmp() function was very slow when using the UTF-8 supporting system. Corrected.
IPE-2476 (Parent JIRA IPE-2269)	The buffer overran in the LDAP sync code. Corrected.

Defect #	Description
IPE-2477 (Parent JIRA IPE-2270)	When passing the memo array field to a BusinessWorks step, the data was not correct. Corrected.
IPE-2478 (Parent JIRA IPE-2271)	An error occurred in TIBCO iProcess Workspace (Browser) when using the Start Date field to filter cases. Corrected.
IPE-2479 (Parent JIRA IPE-2272)	Changing password failed when first logging on to TIBCO iProcess Workspace (Windows). Corrected.
IPE-2480	Add internal message queue priorities. Implemented. See Prioritizing the Work Performed by Background Processes (IPE-2480) on page 10 .
IPE-2481 (Parent JIRA IPE-2274)	The cache on demand queues should be uncached after a configurable period of time if no user was using the queue. Implemented. Note: Configure the time (in minutes) after which the queues should be uncached by adding a WIS_UNCACHE_PERIOD process attribute for the WIS.
IPE-2482 (Parent JIRA IPE-2275)	IAPJMS did not function correctly when moving an IAPJMS process from a master machine to a slave machine. Corrected.
IPE-2483 (Parent JIRA IPE-2277)	The WIS process was occasionally crushed because uncached queues in WIS were not thread-safe. Corrected.
IPE-2484 (Parent JIRA IPE-2279)	Background memory leak occurred when invoking the <code>triggerEvent</code> method. Corrected.
IPE-2487 (Parent JIRA IPE-2261)	Removes the TIBCO Hawk installation from the TIBCO iProcess Engine installer. Implemented.

Defect #	Description
IPE-2488 (Parent JIRA IPE-2281)	Upgrades Tomcat from version 5.5.20 to 5.5.31. Implemented.
IPE-2489 (Parent JIRA IPE-2413)	The Background (BG) processes were suspended after upgrading to TIBCO iProcess Engine 11.1.2.5. Corrected.
IPE-2490 (Parent JIRA IPE-2388)	The TIBCO iProcess Engine user could not log in to the TIBCO iProcess Workspace (Browser) client for the second time. Corrected.
IPE-2493 (Parent JIRA IPE-2311)	Adds support for a new parameter (RPCClntIPs) in TIBCO iProcess Objects Server to define the list of IP addresses to which the RPC client will be bound. For usage instructions, see <i>TIBCO iProcess Objects Server Release Notes</i> . Implemented.
IPE-2494 (Parent JIRA IPE-2324)	The WIS process lost work item deadlines under certain circumstances. Corrected.
IPE-2496 (Parent JIRA IPE-2326)	A problem occurred when adding the first process into the slave node. Corrected.
IPE-2497 (Parent JIRA IPE-2327)	If an EAISQL step failed (for example, when specifying database parameters that did not exist), cases that should have remained outstanding were terminated. Corrected.
IPE-2499 (Parent JIRA IPE-2414)	Cases started through SSOLITE were not distributed evenly across the two queues in the BG MBox Set. Corrected.
IPE-2500 (Parent JIRA IPE-2328)	The default method that created read/write locks on Linux favored the threads that received read locks. This caused threads that tried to get a write lock to be blocked for a long time, which caused TIBCO iProcess Engine to be unresponsive. Corrected.

Defect #	Description
IPE-2505 (Parent JIRA IPE-2329)	While purging sub-cases, if a deadlock occurred during the process of getting an audit trail, the Background (BG) processes did not roll back transactions. Corrected.
IPE-2506 (Parent JIRA IPE-2435)	Performance was low when purging multiple cases using the <code>swbatch</code> command. Corrected.
IPE-2509 (Parent JIRA IPE-2330)	The Background (BG) Processes were getting suspended in the IAPJMS process when publishing a message including empty memo fields. Corrected.
IPE-2510 (Parent JIRA IPE-2437)	When releasing a new version of a procedure and choosing to migrate existing cases of that procedure to the new version, the following audit trail entry was generated for each case: Case migrated from Procedure <code>vFromVersion</code> to <code>vToVersion</code> by <code>UserName</code> If TIBCO iProcess Engine was configured to publish activity information, a corresponding Monitor Event Detail (MED) message should be published for each case, containing this audit message (with <code>ActivityID = 34</code>). However, this message was not published. Corrected.
IPE-2511 (Parent JIRA IPE-2335)	The field values were not updated when a subprocedure started through the GRAFT step. Corrected.
IPE-2513 (Parent JIRA IPE-2283)	Adds a new parameter (<code>RPCCIntIPs</code>) for use in the <code>swentobjsv.cfg</code> file to define the list of IP addresses to which the RPC client will be bound. Usage: If there is only one network interface used for RPC client, it is unnecessary to specify this parameter. If necessary, specify a list of IP addresses, separated by commas. For example, <code>RPCCIntIPs = 192.168.65.122,192.168.65.119,192.168.65.120</code> Implemented.

Defect #	Description
IPE-2516 (Parent JIRA IPE-1575)	TIBCO iProcess Objects Server was suspended. Corrected.
IPE-2517 (Parent JIRA IPE-2420)	The operation for adding a user to a group using the <code>makeAWorkItemListJMS</code> method failed until TIBCO iProcess Engine restarted. Corrected.
IPE-2518 (Parent JIRA IPE-2421)	The global variable <code>abandoned_wqs_list</code> was not initialized to NULL. Corrected.
IPE-2519 (Parent JIRA IPE-2427)	Performance was low when sorting an empty string in TIBCO iProcess Objects Server. Corrected.
IPE-2520 (Parent JIRA IPE-2428)	The escape characters in the Filter Expression were converted incorrectly. Corrected.
IPE-2523 (Parent JIRA IPE-2433)	When attempting to release a work item, TIBCO iProcess Objects Server returned an <code>swItemErrErr</code> error to the application, stating that a required field was not specified, even though all required fields were specified. Corrected.
IPE-2524 (Parent JIRA IPE-2434)	After a new procedure was imported, TIBCO iProcess Objects Server did not find it. Corrected.
IPE-2527 (Parent JIRA IPE-1585)	Including the character <code>\n</code> in the case description caused TIBCO iProcess Workspace (Windows) to crash and case list requests using TIBCO iProcess Workspace (Browser) to fail. Corrected.
IPE-2535	Add support to pass complete arrays into and out of sub-procedures. Implemented. See Pass Complete Arrays Into and out of Sub-procedures (IPE-2535) on page 10 .

Defect #	Description
IPE-2547	<p>The Move System Information took a long time to synchronize not only the modified roles and groups information but unchanged as well.</p> <p>Corrected.</p>
IPE-2552	<p>Improve the performance of TIBCO iProcess Objects Server when loading user cache.</p> <p>Implemented. See TIBCO iProcess Engine Startup Performance Improvements (IPE-2552, IPE-2558, IPE-2563) on page 11.</p>
IPE-2554	<p>The performance of TIBCO iProcess Objects Server when loading user cache has been improved.</p> <p>Implemented. See TIBCO iProcess Objects Server Startup Performance Improvements (IPE-2554, IPE-2562) on page 9.</p>
IPE-2558	<p>Improve the performance of TIBCO iProcess Objects Server when checking queues.</p> <p>Implemented. See TIBCO iProcess Engine Startup Performance Improvements (IPE-2552, IPE-2558, IPE-2563) on page 11.</p>
IPE-2560	<p>Add support to redirect the work items of which the user is deleted.</p> <p>Implemented. See Redirect the Work Items of a Deleted User (IPE-2560) on page 11.</p>
IPE-2562	<p>The performance of TIBCO iProcess Objects Server when checking queues has been improved.</p> <p>Implemented. See TIBCO iProcess Objects Server Startup Performance Improvements (IPE-2554, IPE-2562) on page 9.</p>
IPE-2563	<p>Improve the performance of TIBCO iProcess Objects Server by moving it up in the start-up order.</p> <p>Implemented. See TIBCO iProcess Engine Startup Performance Improvements (IPE-2552, IPE-2558, IPE-2563) on page 11.</p>
IPE-2581 (Parent JIRA IPE-2536)	<p>The <code>swbatch</code> command utility crashed occasionally when running the <code>swbatch EVENT</code> command with the <code>-e</code> option in the control file.</p> <p>Corrected.</p>
IPE-2603 (Parent JIRA IPE-2667)	<p>The major version and minor version of a procedure were not correctly reflected in the IAPJMS activity 34 entry when a case was migrated.</p> <p>Corrected.</p>

Defect #	Description
IPE-2604	<p>Add support to map an attribute which contains an underscore to one which doesn't have one in LDAP.</p> <p>Implemented. See Map an Attribute Which Contains an Underscore to One Which Doesn't Have One in LDAP (IPE-2604) on page 11.</p>
IPE-2609 IPE-2654 <i>(Parent JIRA IPE-2624)</i>	<p>TIBCO iProcess Engine did not create a mapping of the MEMATTS and FIELDS sections between the old and new versions when a new version of the procedure was imported from TIBCO Business Studio, or was imported with the <code>swutil</code> command utility.</p> <p>Corrected.</p>
IPE-2613	<p>Create log files in a rotational manner on a daily base.</p> <p>Implemented. See Create Log Files in a Rotational Manner (IPE-2613) on page 9.</p>
IPE-2619	<p>The memo and attach fields for some steps were lost when importing an XPDL file through TIBCO iProcess Workspace (Windows).</p> <p>Corrected.</p>
IPE-2658	<p>The timestamps of the release instructions shown in an audit trail were not correct.</p> <p>Corrected. See Exact Timestamps for Release Instructions in Audit Trail (IPE-2658) on page 10.</p>
IPE-2666 <i>(Parent JIRA IPE-2597)</i>	<p>Adds more logs in the program to trace a cached work item.</p> <p>Implemented.</p>
IPE-2667 <i>(Parent JIRA IPE-2603)</i>	<p>The major version and minor versions of a procedure were not correctly reflected in the IAPJMS activity 34 entry when a case was migrated.</p> <p>Corrected.</p>
IPE-2669 <i>(Parent JIRA IPE-2557)</i>	<p>TIBCO iProcess Objects Server was suspended due to thread lock issues.</p> <p>Corrected.</p>
IPE-2670 <i>(Parent JIRA IPE-2551)</i>	<p>IAP messages were not generated because the audit user failed in validation.</p> <p>Corrected.</p>

Defect #	Description
IPE-2676 (Parent JIRA IPE-2620)	The TIBCO iProcess EAI Bridge COM application <code>GetField()</code> method did not return Japanese characters correctly. Corrected.
IPE-2687 (Parent JIRA IPE-2559)	When setting <code>IAPSCHEMA</code> to 1 in the <code>staffcfg</code> file, the BG failed to validate the audit username for the activity and did not roll back the transaction. Corrected.
IPE-2690 (Parent JIRA IPE-2672)	Using an F3 filter on a queue of items caused the RPC call to time out. Corrected.
IPE-2695	Allows a user to configure the Case Description sort criteria in TIBCO iProcess Workspace (Windows) to be case-sensitive or not. Implemented. This configuration can be done at the node level with a new <code>WIS_SORT_TEXT_CASE_SENSITIVE</code> parameter in iProcess Engine <code>SWDIR\etc\staffcfg</code> configuration file: Section: WQS Initial Value: 0 Units: N/A Range: 0 (non-case-sensitive sorting) or 1 (case-sensitive sorting) Description: Sets the sorting type of the Case Description sort criteria to be case-sensitive or not.
IPE-2697 (Parent JIRA IPE-2168)	Performance was low when processing the rebuild function in TIBCO iProcess Objects Server. Corrected.
IPE-2698 (Parent JIRA IPE-2531)	When TIBCO iProcess Objects Server communicated with the WIS and WQS processes using the RPC client in the SAL session, the RPC calling was suspended. Corrected.
IPE-2699	To find out the reason why TIBCO iProcess Objects Server crashed, add some log messages into the program. Implemented.

Defect #	Description
IPE-2727 (Parent JIRA IPE-487)	Importing a procedure that contained memo fields from an XPDL file using TIBCO iProcess Workspace (Windows) reallocated all the data of the memo fields, causing the corruption of data if old cases were migrated. Corrected.
IPE-2728 (Parent JIRA IPE-2656)	The JBoss messaging server did not work appropriately when waiting for a failover to complete. This caused WIS not to be able to receive the receipt of some Work Queue Delta messages due to timeout, and resulted in the invalid receipt of all the subsequent messages. Corrected.
IPE-2729 (Parent JIRA IPE-2599)	Cases was terminated unexpectedly because caching procedures failed. Corrected.
IPE-2732	Make log files directory configurable. Implemented. See Log Files Directory Is Configurable (IPE-2732) on page 11 .
IPE-2733	The Log Files directory is now configurable. Implemented. See Log Files Directory Is Configurable (IPE-2733) on page 11 .
IPE-2735 (Parent JIRA IPE-2250)	The WISMDB process crashed when using incorrect WIS information obtained as a result of the RPC time-out. Corrected.
IPE-2736 (Parent JIRA IPE-2618)	When performing the JumpTo operation (or jumping from one step to another) in a procedure that includes withdrawing a transaction control step (TCS), warning messages were generated by the WISMDB process. Corrected.
IPE-2744	Add logs into the programs to investigate why 100% CPU is occupied constantly when using the swdbqd process. Implemented.
IPE-2747	100% CPU was occupied constantly when using the swdbqd process. Corrected.

Earlier Versions

For details of the MRs/CRs implemented in earlier versions of the product, please see the Readme and Release Notes for that particular product release.

Restrictions

The table in this section lists known restrictions in this release.

Defect #	Summary/Workaround
IPE-3113	<p>Summary An error occurs when loading XPDL for a procedure library with any new functionality into iProcess Workspace (Windows), if the procedure library is saved as XPDL from a later version of TIBCO iProceess Engine, and loaded into an earlier version of TIBCO iProcess Engine.</p> <p>Workaround TIBCO does not recommend that you import procedures, which are exported from a later version of TIBCO iProcess Engine, to an earlier version of TIBCO iProcess Engine.</p> <p>See <i>TIBCO iProcess swutil and swbatch Reference Guide</i> for more information.</p>
MR 40988	<p>Summary When a procedure is exported to an XPDL file from TIBCO iProcess Workspace (Windows), no list or table information is included.</p> <p>Workaround None.</p>
MR 35194	<p>Summary The iProcess Server Manager does not support language translation.</p> <p>Workaround None.</p>
CR 19850	<p>Summary The LDAPCONF utility enables you to define which LDAP directory attributes are mapped to which iProcess Engine properties. However, if you select option 3 (Set Attribute Mappings) from the LDAP main menu, the SW_DOMAIN and WISCACHE attributes are not displayed.</p> <p>Workaround Select option 3 from the LDAP main menu and, when prompted, select the Add option to manually add the SW_DOMAIN and WISCACHE attributes as LDAP directory attributes. See Chapter 2, "Creating and Maintaining iProcess User Data in the LDAP Directory" in the <i>LDAPCONF Utility User's Guide</i> for more information.</p>
CR 19520	<p><i>This applies to the iProcess Engine (DB2) for Linux only</i></p> <p>Summary When Setup reaches the Database Connection and Account Details dialog, the password information for the database users is automatically filled in. However, the dialog uses the default passwords, not the passwords that have been set for the database users on the operating system.</p> <p>Workaround You should reset these passwords to be the same as the passwords set for the database users on the operating system.</p>

Defect #	Summary/Workaround
CR 19010	<p>Summary If the WIS process handles an update event (for example, from a \$SWDIR/bin/swutil EVENT -p command) while a user has a work item open, the Case Description and WQ Parameters revert to the values they had prior to the update when the work item is kept.</p> <p>Workaround None.</p>
CR 18799	<p>Summary If lots of MOVESYSINFO operations are being performed by BG processes, then the other processes that have to recache the user/group information might fail due to becoming deadlocked.</p> <p>It is also possible that the caching process might load group membership or attribute values that don't match the attributes or queues loaded. This is because the caching process would first load the queues, then the attributes and finally the attribute values. If a MOVESYSINFO changed the attribute values before they were loaded then they may not match the attributes that were loaded prior to the MOVESYSINFO.</p> <p>Workaround Once all operations have been completed, modify the user/group area and perform one last MOVESYSINFO.</p>
CR 18631	<p>Summary If you have an outstanding test mail item for an unreleased procedure and you delete the step from the procedure that the outstanding mail refers to, the test mail item can no longer be accessed. This is to be expected as the step has been deleted from the procedure. However, if you then purge the case for this inaccessible step the case is purged but the item is never removed from the message queue.</p> <p>Workaround None.</p>
CR 18614	<p>Summary When a user logs in to the iProcess Workspace (Windows) test queues are not displayed in Work Queue Manager. This is because the user's personal work queue (from which the test queues are created) has not been cached yet.</p> <p>Workaround If a new work item is sent to a test queue this causes the Rebuild List button to appear. Alternatively, the user can select their personal work queue and press F5. This also causes the Rebuild List button to appear. Clicking Rebuild List displays the test queues.</p>

Defect #	Summary/Workaround
CR 18361	<p>Summary Performance on AIX systems can be very slow when opening cases from a queue.</p> <p>Workaround If the SERVERRUN function is being used frequently in one or many procedures, the \$SWDIR/lib/fil.so file should be "pinned" into the AIX Shared Memory, by ensuring that all users have read and execute permissions on the file. To do this, use the command</p> <pre>chmod 555 \$SWDIR/lib/fil.so</pre>
CR 17728	<p>Summary The purge process does not successfully purge pack data and memos for outstanding Delayed Release steps and for failed steps awaiting retry.</p> <p>Workaround None.</p>
CR 17669	<p>Summary If you use iProcess activity monitoring on an iProcess Engine that uses a node cluster architecture, and you enable iProcess activity monitoring on the master node but not on one or more slave nodes, activity monitoring is disabled. (This is because the slave node settings contradict the master node settings.)</p> <p>Workaround Make sure that you enable iProcess activity monitoring on <i>both</i> the master node <i>and</i> on each slave node when you install the iProcess Engine. See the <i>iProcess Engine Installation Guide</i> for more information about how to do this.</p>
CR 17662	<p>Summary If you use the same debug flag setting (1 to enable debug, 0 to disable it) on consecutive calls to the SSOLite <code>sw_set_debug()</code> stored procedure, the call returns an unclear error. The error message does not state that the call is trying to set debug to the state that it is already in.</p> <p>For example, if you call <code>sw_set_debug(1)</code> once to set debugging, the call correctly returns 0 (success). If your next call to <code>sw_set_debug()</code> is also <code>sw_set_debug(1)</code>, the following error is returned:</p> <pre>SQL0601N The name of the object to be created is identical to the existing name "SESSION.SSOLITE_DEBUG_DATA" of type "DECLARED TEMPORARY TABLE". SQLSTATE=42710</pre> <p>Similarly, if you call <code>sw_set_debug(0)</code> once to disable debugging, the call correctly returns 0 (success). If your next call to <code>sw_set_debug()</code> is also <code>sw_set_debug(0)</code>, the following error is returned:</p> <pre>SQL0204N "SESSION.SSOLITE_DEBUG_DATA" is an undefined name. SQLSTATE=42704</pre> <p>Workaround If you call <code>sw_set_debug(1)</code> and then call <code>sw_set_debug(0)</code>, or vice-versa, the calls behave correctly and return 0 (success).</p>

Defect #	Summary/Workaround
CR 17603	<p>Summary The J2EE standard supports the use of different security credentials (username and password) for JNDI InitialContext and JMS connections.</p> <p>However, in this version of the iProcess Engine, you can only define a single username and password for the IAPJMS process. The process uses these credentials for both JNDI InitialContext and JMS connections.</p> <p>Note that the IAPJMSConnect.SecurityPrinciple property defines the username. The IAPJMSConnect.SecurityCredentials property defines the password. Both properties are defined in the iapjms.properties file. See Chapter 9, “Administering Activity Monitoring”, in the <i>TIBCO iProcess Engine Administrator’s Guide</i> for more information.</p> <p>Workaround None</p>
CR 17466	<p>Summary If you are using iProcess activity monitoring, Monitor Event Detail (MED) messages with ActivityIDs 16, 19, 20, 25, 26 and 28 do not display the name of the audit user in the <AuditUser> element. Instead, they display information that depends on the particular message.</p> <p>For example, when a sub-procedure is started a MED message with ActivityID = 16 is generated. The <AuditUser> element in this case shows the SubCaseID of the sub-case that has been started, not the name of the audit user, as shown below.</p> <pre data-bbox="382 916 1256 1093"><AuditMessage>Sub-Case started from "SUBCALL1"</AuditMessage> <AuditStep Name="SUBCALL1"> <Description>SUBCALL1</Description> <AuditDate Microseconds="545547">2005-08-24T14:57:56</AuditDate> <AuditUser>iPEPublication4:SUBPROC:1:201:201</AuditUser> </AuditStep></pre> <p>Workaround None. If you require additional information about the contents of the <AuditUser> element for one of these messages, please contact TIBCO Support.</p>

Defect #	Summary/Workaround
CR 16946	<p>Summary The iProcess Engine uses the SHMKEY_ID process attribute value when building the UNIX shared memory key that is allocated when the WQS process is started. If a shared memory conflict occurs, resulting in the WQS process being unable to start, you can change the SHMKEY_ID value to resolve the problem.</p> <p>However, changing the value of the SHMKEY_ID process attribute has no effect in this version of the iProcess Engine. You cannot use SHMKEY_ID to resolve shared memory conflicts.</p> <p>Workaround See CR 16945 on page 52 for more information about alternative ways of resolving shared memory conflicts.</p>
CR 16945	<p>Summary If the WQS process (or other iProcess Engine process) cannot obtain a shared memory segment when the iProcess Engine attempts to start, startup fails. Error messages 1974 and 1975 are written to the <code>\$SWDIR/logs/sw_error</code> file - for example:</p> <pre>2005/02/15 16:51:48(WQS:1:18218:1:swadmin:/wqsindex.c:7.21:566): 1974-Failed to get shared memory handle for WQSINDEX 2005/02/15 16:51:48(WQS:1:18218:1:swadmin:/wqsindex.c:7.21:677): 1975-WQS initialize failed, connected to shared memory for</pre> <p>Workaround For more information about how to resolve this problem, please refer to the description of these errors in the <i>iProcess Engine System Messages Guide</i>. Note that:</p> <ul style="list-style-type: none"> You can force the iProcess Engine to obtain a new shared memory key when it starts up. To do this: <ol style="list-style-type: none"> Move the <code>/var/tmp/nodename</code> directory (where <code>nodename</code> is the nodename of this iProcess Engine) to another location on the same physical partition of the file system - for example, <code>/var/tmp/old/nodename</code>. Restart the iProcess Engine. The iProcess Engine should obtain a different shared memory key, allowing it to start successfully. If you set debugging for the WQS process, the <code>shmget</code> call returns error code 22. Changing the value of the SHMKEY_ID process attribute has no effect in this iProcess Engine version. This is because of a current restriction in the product - see CR 16946 on page 52 for more information.

Defect #	Summary/Workaround
CR 16924	<p>Summary If the LD_LIBRARY_PATH environment variable contains Oracle libraries as well as DB2 libraries, and the Oracle libraries are listed first, the iProcess Engine will try to use the Oracle libraries instead of the DB2 ones. The iProcess Engine will therefore fail to start on DB2.</p> <p>Workaround To avoid this problem, make sure that the DB2 libraries are listed in front of the Oracle libraries in LD_LIBRARY_PATH before you start the iProcess Engine.</p>
CR 16878	<p>Summary Filtering a view of a case via the TIBCO iProcess Objects Server with a filter expression that uses a '?' or '*' wildcard character to match against SW_CASEREF causes an error. A 'SAL System Error' message is returned to TIBCO iProcess Objects (COM).</p> <p>Workaround None</p>
CR 16833	<p>Summary The WIS process occasionally crashes during shutdown of the iProcess Engine on a machine which is responding slowly due to a very heavy paging going on at the same time.</p> <p>Workaround None</p>
CR 16766	<p>Summary Do not use the LDAPCONF ATTRIB command. It is not supported in this version of the iProcess Engine. (The command returns "error in parameter list: Unknown option" errors if you do use it.)</p> <p>Workaround None</p>
CR 15531	<p>Summary Adding a numeric user attribute with decimal places actually creates an attribute with 24 Characters and no decimal places.</p> <p>This happens if the attribute is added using the iProcess Administrator or via \$SWDIR/bin/swutil USERINFO. For example, if you add a numeric attribute with length 10.2, it is actually created as a numeric attribute with length 24.0.</p> <p>Workaround None</p>
CR 15311	<p>Summary The following fields do not appear in the Available Fields list of fields in the Inputs or Outputs tab for iProcess Engine plug-ins:</p> <ul style="list-style-type: none"> • SW_IP* Fields • SW_STEPNAME • SW_STEPDESC <p>Workaround None</p>

Defect #	Summary/Workaround
CR 14598	<p>Summary When you map sub-procedure output parameters to main procedure fields, you can define a private Output Mapping script which runs after all mappings have been performed (for example, to perform additional field manipulation). These output mapping scripts are ignored when performing case prediction.</p> <p>Workaround None</p>
CR 14597	<p>Summary If a memo field is defined as an input or output parameter for a sub-procedure, it is ignored when performing case prediction - no data is passed for the field.</p> <p>Workaround None</p>
CR 14595	<p>Summary If a procedure contains a set of conditions where there is a FALSE result followed by multiple TRUE results, the iProcess Engine can, when performing case prediction, incorrectly process the conditions and produce future work items for both the True and False paths.</p> <p>Workaround None</p>
CR 14225	<p>Summary When viewing cases, filter criteria that use the ? operator (such as SW_CASENUM ? "2") or regular expressions using the same character (SW_CASENUM ? "1234?") will fail.</p> <p>Workaround Either:</p> <ul style="list-style-type: none"> • Use the equality operator, =, instead; for example, SW_CASENUM = "2", or • Use a * wildcard character in the regular expression; for example, "1234*". This will succeed, but will produce a wider range of results than the ? character should; any case number that starts with 1234 will match.

Defect #	Summary/Workaround
CR 12961	<p>Summary The following iProcess Expressions are currently not available to the iProcess Script Server Plug-in. Therefore, even though you can successfully enter the expressions in your iProcess Script plug-in definition, they will not be processed by the iProcess Engine. All of the following expressions will return SW_NA (except GOTOSTEP, which has its own error code).</p> <ul style="list-style-type: none"> • ATTACHFILENAME • CALL • CASECLOSE, CASESTART, CUSTAUDIT • DBWRITEFIELDS, DDEGETNAME, DDEGETTOPIC, DDEINITIATE, DDEPOKE, DDETERMALL, DDETERMINATE, DDEXECUTE • FILEREQUEST, FORMCONTROL, FORMMAXIMIZE, FORMMINIMIZE, FORMMOVE, FORMRESTORE, FORMSIZE • GETHANDLE, GOTOSTEP • MARKFIELDCHANGED, MEMOFILE, MESSAGEBOX • READFIELDS • SCRIPT • SENDKEYS, SERVEREXEC, SERVERRUN • TRIGGEREVENT • UNIXEXEC, UNIXRUN • VLDFILE, VLDFILEX, VLDQUERY • WINACTION, WINACTIVATE, WINCLOSE, WINEXIST, WINFIND, WINMAXIMIZE, WINMESSAGE, WINMINIMIZE, WINMOVE, WINRESTORE, WINRUN, WINSIZE, WRITEFIELDS <p>The following iProcess data fields are not available:</p> <ul style="list-style-type: none"> • SW_USER:<i>attribute</i> • SW_GROUP:<i>attribute</i> • SW_IP_<i>work item priority fields</i> <p>Workaround None</p>
CR 12037	<p>Summary You should not use any special characters (!, £, &, *, ?, /, etc.) when naming new groups, roles, lists or tables using \$SWDIR/bin/swutil.</p> <p>Workaround None</p>

Defect #	Summary/Workaround
CR 12024	<p>Summary Groups and attributes with names greater than 24 characters in length will be ignored.</p> <p>Workaround None</p>
CR 12023	<p>Summary Do not create attribute names that end in the string <code>_XX</code>, where <code>XX</code> is a two digit number. This string is reserved for internal use by the iProcess Engine.</p> <p>Workaround None</p>
CR 10878	<p>Summary When a case is being processed, the MAX_SUB_PROCEDURE_DEPTH limit (from the process_attributes table) is checked when a sub-case is started. If this limit is going to be exceeded, the sub-procedure should not start. Instead, an error message is written to the <code>\$SWDIR/logs/sw_warn</code> file and the next step (at the immediate parent level) should be started instead.</p> <p>However, this functionality does not work correctly in this version of the iProcess Engine. If the MAX_SUB_PROCEDURE_DEPTH limit is reached (not exceeded):</p> <ul style="list-style-type: none"> • the sub-procedure is not started. • the procedure jumps back to the main procedure, and the next step at that level is started. • any data set in any intermediate sub-procedure steps is lost. This means that any further step processing can contain incorrect case data. <p>Workaround None</p>
CR 07082	<p>Summary If you set or change the value of the URGENTPRIORITY attribute, you will need to restart the iProcess Engine before the new value takes effect.</p> <p>Workaround None</p>

Known Issues

This section lists known issues in the current release.

Summary

Summary The `step_addr` column of the `predict` table displays `NOADDR` when a new user is added to TIBCO iProcess Engine.

Workaround Restart TIBCO iProcess Engine.

Summary When importing users without user descriptions in the XFR file through TIBCO iProcess Administrator, the imported users can not be used to log into TIBCO iProcess Workspace (Windows).

Workaround When importing users through TIBCO iProcess Administrator, import users with user descriptions in the XFR file.

Summary On SUSE Linux Enterprise 11, RPC portmapper service is started by `rpcbind` by default, which causes TIBCO iProcess Engine to fail to start.

Workaround Switch to `portmap` to start RPC services by following these steps:

1. Run `/etc/init.d/rpcbind stop` to stop RPC services.
2. Get the `portmap` RPM installation file from SUSE Linux Enterprise 11 installation disk and install `portmap`.
3. Run `/etc/init.d/portmap start` to start RPC services.

Then, the iProcess Engine can start successfully.

Summary After installing TIBCO iProcess Engine on Red Hat 5 and enabling IAPJMS for JBoss 4.2.1, the IAPJMS process fails to start up.

Workaround Follow these steps:

1. Change the `classpath.JBoss.base` parameter in the `iapjms_classpath.properties` file.
For example: `classpath.JBoss.base=jbossall-client.jar`
2. Restart TIBCO iProcess Engine.

Summary

Summary If IAPJMS has been configured for Weblogic 10.3 when installing TIBCO iProcess Engine on Red Hat 5, the IAPJMS process is suspended after starting TIBCO iProcess Engine.

Workaround Follow these steps:

1. Copy the `wlfullclient.jar` file to `$WEBLOGIC_HOME/jar`.
2. Modify the configuration for Weblogic in the `iapjms_classpath.properties` file.

For example:

```
classpath.basedir.WL=$WEBLOGIC_HOME/jar
classpath.WL.base=wlfullclient.jar
```

3. Restart TIBCO iProcess Engine.

Summary After installing the Technology Plug-ins, the BG process cannot start up while starting TIBCO iProcess Engine.

Workaround Follow these steps:

1. Modify the `set_attributes.sh` file.

Add `$SWDIR/libs` into the process attribute `SWLIB_PATH` for BG, BGPREDICT, and PRCEBG, and make sure `$SWDIR/libs` appears before `/usr/lib`.

For example:

```
/staffware/installations/staffw_nod1/util/swadm set_attribute
0 BG          0 SWLIB_PATH
/staffware/installations/staffw_nod1/libs:/staffware/installa
tions/staffw_nod1/java/bin/classic:/staffware/installations/s
taffw_nod1/java/bin:/usr/lib

/staffware/installations/staffw_nod1/util/swadm set_attribute
0 BGPREDICT 0 SWLIB_PATH
/staffware/installations/staffw_nod1/libs:/staffware/installa
tions/staffw_nod1/java/bin/classic:/staffware/installations/s
taffw_nod1/java/bin:/usr/lib

/staffware/installations/staffw_nod1/util/swadm set_attribute
0 RPCBG      0 SWLIB_PATH
/staffware/installations/staffw_nod1/libs:/staffware/installa
tions/staffw_nod1/java/bin/classic:/staffware/installations/s
taffw_nod1/java/bin:/usr/lib
```

2. Restart TIBCO iProcess Engine.

Summary

Summary Work items cannot be seen in the work queue when configuring IAPJMS for JBoss.

Workaround Follow these steps:

1. Copy `$JBOSS_HOME\client\log4j.jar` to `$SWDIR\jar\thirdpart\`
2. Open the `$SWDIR\etc\iapjms_classpath.properties` configuration file and replace `classpath.internal.log4j=thirdparty/log4j-1.2.8.jar` with `classpath.internal.log4j=thirdparty/log4j.jar`
3. Restart TIBCO iProcess Engine.

Summary When installing TIBCO iProcess Engine, UTF-8 is not supported by default.

Workaround Manually set up support for UTF-8 in TIBCO iProcess Engine.

During installing TIBCO iProcess Engine:

— For interactive installation

For a new installation, the default behaviour should be NOT supporting UTF-8.

For upgrading, if old version supports UTF-8, the default behaviour should be supporting UTF-8, and it should NOT be editable. If old version not supports UTF-8, the default behaviour should be NOT supporting UTF-8, and it should be editable.

— For silent installation:

If it is upgrade and old version supports UTF-8, the behaviour should be supporting UTF-8 and it should NOT be changed. Otherwise, whether supporting UTF-8 is up to the value set in the response file.

See *TIBCO iProcess Engine Architecture Guide* for more details about configuring your system to support UTF-8.

Summary The `PM_AUTO_BOOT` parameter should not be set in a cluster of the TIBCO iProcess Engine nodes.

Workaround Follow these steps to set the `PM_AUTO_BOOT` parameter and start the cluster:

1. Set the `PM_AUTO_BOOT` parameter to 0.
 2. Run `swstart -p` to start the sentinels on all nodes.
 3. Run `swstart` to start TIBCO iProcess Engine on any node.
-

Summary

Summary When installing TIBCO iProcess Engine on Linux Red Hat 5 with an IBM DB2 database, an error occurs after setting SELinux to the enforcing status.

Workaround Manually set permission to the following files:

- libdb2.so.1
- libdb2.so.1
- libdb2osse.so.1
- libimf.so

For example:

- `chcon -t texrel_shlib_t /usr/lib/libdb2.so.1`
- `chcon -t texrel_shlib_t /$DB2PATH/lib32/libdb2.so.1`
- `chcon -t texrel_shlib_t /$DB2PATH/lib32/libdb2osse.so.1`
- `chcon -t texrel_shlib_t /$DB2PATH/lib32/libimf.so`

Summary TIBCO iProcess Web Services Server Plug-in does not update the memo field correctly if the database is using UTF-8.

Workaround None.

Summary If you select the option "User must change password at net logon" in Active Directory, and then sync to iProcess Engine, the user cannot login to iProcess Engine.

Workaround None.

Summary Process failures occur when you use DB2 to validate passwords via the TIBCO iProcess User Validation API.

If you are using the TIBCO iProcess User Validation API to validate passwords against a DB2 database, iProcess Engine processes may crash on exit. If this occurs, you will need to update your DB2 installation to incorporate a fix for problem reference **APAR IY75560**.

TIBCO understand that this fix is expected to be available in FP11 for DB2. However, you must contact IBM for accurate information about how to obtain this fix.

Summary

Summary Operating system dates later than 31st December 2037 are not supported.

Although designed to process dates up to the year 3000, the iProcess Suite has been modified - in the interests of data integrity - to shut down if the system date exceeds 31st December 2037.

The iProcess Suite uses the `time()` system call to get the system date and time. This call returns the system date and time as the number of seconds since midnight, 1st January 1970 as a signed integer (32-bits). This means that the `time()` function (which is commonly referred to as UNIX time) is unable to return a time beyond 19th January 2038, 03:14:07 UCT.

To protect the integrity of your iProcess installation, the iProcess Engine will create a file `$SWDIR/logs/sw_error` and shut itself down if the system returns a date beyond 31 December 2037. You should not use operating system dates later than this. Potentially, ALL applications that use the time function are at risk beyond this date.

Summary [HP only] Some special characters (e.g., '£', '¬', etc.) can cause problems in client applications when using an HP iProcess Objects Server.

The workaround for this issue is to avoid using special characters in user names, group names, procedure names, step names, and node names.

Summary Invalid data type causes error.

If an incorrect type of data is passed into a field (e.g., text is passed into a numeric field) when executing the **StartCaseEx** method, an "Invalid data for field" error is thrown by the iProcess Engine. Even though invalid data is passed, the case is still started. Field values in the FieldValues array prior to the invalid data are correctly assigned to their respective fields; field values in the FieldValues array after the invalid data are NOT assigned to their respective fields.

Summary Same user logged on multiple times causes degradation/possible errors.

The same user logging on multiple times to the same iProcess Engine may result in performance degradation. The iProcess Engine will allow only one transaction to be processed at a time for users that are logged on multiple times to that server, resulting in slower processing

Summary No support for attachments.

There is currently no support for fields of type `swAttachment`.

Summary

Summary Cannot access default attribute values.

The TIBCO iProcess Engine does not store default values for Attributes. Consequently, the **Value** property of an **SWAttribute** object does not have any value when accessed from an **SWNode** object.

Summary Locking work items.

The SAL SDK allows long locking multiple times by the same user name. Consequently, in the iProcess Engine, it is possible to lock the same work item from a work queue using a different login session if there are two or more clients logged in as the same user name.

Summary Text field attribute lengths stored in multiples of 24.

All attributes except for text fields are set to a length of 24 if a length is not specified or if some length (up to 24) is specified. Decimal places are not stored.

For text fields, length is set to 24 if no length is specified. If a length is specified, the actual length will be the next multiple of 24, up to the maximum length of 255. For example, creating a text field 25 characters long will result in the field actually being 48 characters long.

Summary Audit filtering limitations on sub-cases.

When specifying an audit filter for a sub-case, or a parent case that contains a sub-case, the following limitation applies: If your filter criteria does not match the sub-case started audit entry in the parent case, no audit entries are returned for the sub-case, regardless of whether the filter criteria matches audit entries of the sub-case.

The work around for this is to specify the following in your AuditFilterExpr filter expression:

```
FILTER_FLAGS=[AF_ALL_SUBSTART]
```


Summary

Summary Single numeric values in range filters must have correct decimals.

If you specify *single* values in a range filter expression, and the field that you are filtering on is defined as a numeric field with decimal positions, the decimal positions must be included with the single values in the expression *and* the single values must be shown in the form of a range.

For example, assume SW_QPARAM2 is defined as a numeric field with two decimal positions. The following example shows the proper way to specify a filter expression that includes single values:

```
SW_QPARAM2=[1-3|5.00-5.00|8-9|18-22|25.00-25.00]
```

(The single values in the example above are 5.00-5.00 and 25.00-25.00.)

When you specify a *range* of values (e.g., 1-3), you do not need to include the decimal positions. In other words, you don't need to specify "1.00 - 3.00".

Other Information

TIBCO iProcess® Conductor EAI Order Step Should be Preceded by a Transaction Control Step

Before invoking the iProcess Conductor Order plug-in for the first time it is important that the initial transaction for the process in which it is executing is committed.

If you use an EAI Order step close to the beginning of a procedure or sub-procedure, you should therefore place a Transaction Control Step immediately before it.

Clearing the `sw_subscription_list` Table

If you use the operating system **kill** command to terminate the (worker and watcher) process sentinel processes, or if the iProcess Engine crashes, rows may be left in the `sw_subscription_list` database table. This table is used by the iProcess Engine event daemon (which is provided by the watcher process sentinel process).

The following utilities use events, and use the `sw_subscription_list` database table to determine whether or not they should initialize a connection to the event daemon:

- `$SWDIR/bin/swutil` (**pstaffer** and **stafffc**)
- `$SWDIR/util/swadm`,
- `$SWDIR/util/swcdata`
- `$SWDIR/util/sweaireg`

If you try to use one of these utilities while the iProcess Engine is not running *and* while the `sw_subscription_list` database table is not empty, the utility will attempt to create an RPC connection to the watcher process. Because the watcher process is not running:

- the utility will hang and then timeout, and
- error messages with message identifier 1903 may be written to the `$SWDIR/logs/sw_warn` or `$SWDIR/logs/sw_error` file. For example:

```
Failed to connect to the RPC Event Daemon after n attempts.
SWRPCEV RPC Program Not Registered.
```

To avoid this problem, you should manually clear the contents of the **sw_subscription_list** database table before trying to use one of these utilities or restarting the iProcess Engine.

Using \$SWDIR/util/plist

You can use the **\$SWDIR/util/plist X** option to provide backwards compatibility with Staffware 2000. For example, using **plist -pv** does not report counts, but you can use **plist -pvX** to specify Staffware 2000 compatibility so that counts are derived. Enter **\$SWDIR/util/plist** at the command line to display a full list of options.

Number of File Descriptors per Process

The TIBCO iProcess Engine must be started with a sufficient number of available file descriptors per process based upon the number of users. This is specified in the iProcess Engine using the NumFiles configuration parameter.

It is very difficult to know exactly how many files per user will be needed for the iProcess Engine since this number will vary depending on a number of factors that are unique to each site's procedures and transactions. The number of files could be as low as 4 files per user, but would not likely go above 12 files per user in a standard configuration. In addition, the iProcess Engine will use up to an additional 50 files independent of the number of users. Based on 1,000 users, the iProcess Engine would open somewhere from 4,050 to 10,150 files.

When the iProcess Engine is started, it attempts to set the number of files from the default number to the maximum number allowed. The default value can be displayed with the **ulimit -n** or **ulimit -Sn** commands ("S" indicating the "soft" or default limit). The maximum value can be displayed with the **ulimit -Hn** command ("H" indicating the "hard" or maximum limit).

The following formula can be used as a guideline to determine the number of file descriptors you need:

$$(12 * \text{Number of users}) + 100$$

For a default configuration, the default number of users is 1024, which means the upper file limit should be 12388 ((12 * 1024) + 100).

The TIBCO iProcess Engine must be started by the background user (which defaults to "pro"), but only the superuser ("root") can increase the maximum ulimits. If the current per process maximum file limit is less than the number needed, either the number of open files per process will have to be raised for the entire system, or the root user can start a shell, increase the file limits for that shell, and then "su" to the background user. (The name of the background user is listed on the second line of the \$SWDIR/swdefs file.)

It is *highly* recommended that the file limit be set as high as possible since the iProcess Engine will immediately exit if there are no more file descriptors available. Running the command `ulimit -n unlimited` will set the file limit to the operating system design limits. This command will only be successful if the system limits allow this.

Must Normalize Case Data to View Cases

When you install the iProcess Engine, there is a check box in the Configuration window that is used to enable a feature called CaseData Normalization. If you are using an application developed with iProcess Objects or iProcess Server Objects, you *must* enable case data normalization. If it is not enabled, cases will not appear in the case list.

Case data normalization can be enabled either during the installation, or at a later time using the Case Data Normalization utility, `swnormcd`.

For more information about case data normalization and using `swnormcd`, see *TIBCO iProcess Engine Administrator's Guide*.

Upgrading from Earlier Version May Cause Error Messages in Log File

Upgrading from an earlier version of the iProcess Engine to version i10.0 (0.0) or later may cause error messages similar to the following to appear in the iProcess Engine log file:

```
ERROR|error in sal_pver_audlist procname($EMAIL) err(0) curridx(1)
ERROR|error in sal_pver_audlist procname($SYSTEM) err(0)
curridx(1)
ERROR|error in sal_pver_audlist procname(CARPOOL) err(0)
curridx(1)
```

These messages are a result of the upgrade, but an error has not occurred. Disregard the messages.