

TIBCO iProcess[®] Workspace (Browser) Action Processor

Reference

*Software Release 11.4.1
April 2014*

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Preface

The TIBCO iProcess Workspace (Browser) Action Processor is the engine that processes requests from a TIBCO General Interface-developed application (e.g., the iProcess Client). The Action Processor receives requests from the client, then interacts with the TIBCO iProcess Objects Server to either return the requested data to the client, or perform the requested operation (open a form, release a work item, close a case, etc.).

This document provides an overview of the Action Processor, as well as information about all of the requests that can be sent to the Action Processor.

Note that you will need to use the TIBCO iProcess Server Objects (Java or .NET) on-line help system in conjunction with this reference guide. The on-line help provides details about the parameters that need to be passed with each request.

Topics

- [Related Documentation on page vi](#)
- [Connecting with TIBCO Resources on page viii](#)

Related Documentation

This section lists documentation resources you may find useful.

TIBCO iProcess Workspace (Browser) Documentation

The following documents form the TIBCO iProcess Workspace (Browser) documentation set:

- *TIBCO iProcess® Workspace (Browser) Installation Guide* - Read this manual for information about installing and configuring the TIBCO iProcess Workspace (Browser).
- *TIBCO iProcess® Workspace (Browser) 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 each release.
- *TIBCO iProcess® Workspace (Browser) User's Guide* - Read this manual for instructions on using the TIBCO iProcess Workspace (Browser) client application.
- *TIBCO iProcess® Workspace (Browser) Configuration and Customization* - This manual provides information about configuring and customizing the iProcess Workspace and Action Processor.
- *TIBCO iProcess® Workspace (Browser) Components Concepts* - This guide provides an overview of the TIBCO iProcess Workspace (Browser) Components, and how they work with other TIBCO products, as well as information about using the Properties and Events Editor to configure components you've added to your application. It also provides a tutorial that steps you through creating a simple application using the iProcess Workspace (Browser) Components.
- *TIBCO iProcess® Workspace (Browser) Components Reference* - This guide provides details about each of the components available in the TIBCO iProcess Workspace (Browser).
- *TIBCO iProcess® Workspace (Browser) Action Processor Reference* - This document provides an overview of the Action Processor, as well as information about all of the requests that can be sent to the Action Processor from TIBCO General Interface components.
- *Integrating TIBCO Forms 2.x with GI Applications* - Describes a programmatic approach to instantiating and launching TIBCO Forms applications from a standalone General Interface application. This is included in the TIBCO iProcess Workspace (Browser) document set as the TIBCO Forms Add-in is installed via the TIBCO iProcess Workspace (Browser) installer.

Before installation, you can access the product documentation listed above from the download site or in the doc folder at the root level on the product media.

After installation, if documentation has been installed with the product, you can access either HTML or PDF product documentation in the following folder:

TIBCO_HOME\iproprocessclientbrowser\doc\ipworkspacebrowser\

Also after installation, you can view the release notes (for new features, closed issues, and known issues) in the following folder:

TIBCO_HOME\iproprocessclientbrowser\doc\

Other TIBCO Documentation

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

- *TIBCO iProcess[®] Server Objects (Java or .NET) Programmer's Guide* - The TIBCO iProcess Server Objects (either Java or .NET) are installed as part of the TIBCO iProcess Workspace (Browser). This guide provides information about configuring the iProcess Server Objects.
- *TIBCO iProcess[®] Objects Server Administrator's Guide* - The TIBCO iProcess Workspace (Browser) communicates with the iProcess Engine through an iProcess Objects Server. This guide can be used to help configure your iProcess Objects Server.
- *TIBCO PageBus[®] Developer's Guide* - This guide provides an introduction to the PageBus, an Ajax publish/subscribe message delivery hub used by the TIBCO iProcess Workspace (Browser) components.
- *TIBCO iProcess[®] Workspace (Windows) Manager's Guide* - Read this guide for information about using the *TIBCO iProcess Administrator*, which includes the *User Manager*. The User Manager is used to add users to the system, who can then log into the TIBCO iProcess Workspace (Browser) application.
- *TIBCO Business Studio[®] Forms User's Guide* - Read this guide for information about creating and deploying TIBCO Forms.

All of these guides are available in the TIBCO Documentation Library.

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.

Chapter 1 **Introduction**

This chapter provides an overview of the TIBCO iProcess Workspace (Browser) Action Processor.

Topics

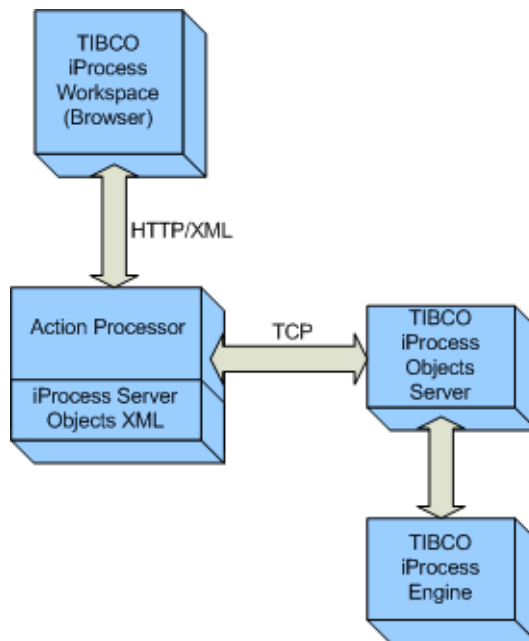
- [Overview, page 2](#)
- [Actions and Requests, page 4](#)
- [Responses to Actions, page 11](#)

Overview

The **TIBCO iProcess Workspace (Browser) Action Processor** services action requests made by the TIBCO iProcess Workspace (Browser) application (which was developed using TIBCO® General Interface Builder).

Each 'action' requested by the General Interface Builder GUI components can contain one or more of the following 'request' types:

- Request for TIBCO iProcess data (e.g., a list of work items)
- Request an action be executed on the TIBCO iProcess Engine (e.g., start a case)



The General Interface Builder GUI components send their action details to the Action Processor via a Form POST over HTTP — the action details are sent as XML on an HTML **<input>** tag.

The Action Processor also accepts actions via an HTTP GET. When doing a GET, the action XML needs to be sent as a URL parameter named 'action'.

Upon receiving an action request (that is not a form request), the Action Processor breaks the action into individual requests and processes each one. The resulting data from each request is then consolidated in XML under one root element (<ap:ActionResult>). The Action Processor then returns this XML data to the General Interface Builder GUI components over HTTP.

The Action Processor is implemented as both a Microsoft .NET ASP Web Application and as a Java Servlet. This has been done so as to satisfy both the Microsoft and customer base. The implementation of the two Action Processors is obviously very different but the functionality and configuration is the same.

Form Requests

If the action request is a form request, the Action Processor redirects the HTML to the client application — no XML is returned. Form requests are handled as follows:

1. The Action Processor looks at the **ExternalFormURI** parameter in the Action Processor's configuration file, `apConfig.xml`. If there is a value in this parameter, it assumes the form is an "External Form", which means it's an ASP Form, JSP Form, or FormBuilder Form. The Action Processor uses the value in the **ExternalFormURI** parameter as the "base" URI to the form's location. The remainder of the URL is obtained from the value in the **Formflow Form** field in the step definition.
2. If there is no value in the **ExternalFormURI** parameter, the Action Processor assumes the "default form" type, i.e., an iProcess Modeler-produced form. In this case, the form to display is defined in the step definition.

In the case of "GI Forms" (which includes both General Interface Forms and TIBCO Forms), the Action Processor does not get involved. These form types are handled by the General Interface code running in the client application.

Actions and Requests

Each action, designated by the `<ap:Action>` element, can contain one or more requests to the Action Processor. The following action example contains two requests; the first request performs a login (**Login** request in the **Authentication** group) and the second request gets the details of three users (**GetUsers** request in the **Node** group).

```
<?xml version="1.0" encoding="UTF-8"?>
<ap:Action xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:sso="http://tibco.com/bpm/sso/types"
  xmlns:ap="http://tibco.com/bpm/actionprocessor">

  <ap:Authentication>
    <ap:Login Id="x435t">
      <sso:NodeCtx>
        <sso:NodeId>
          <sso:Name>myNode</sso:Name>
          <sso:ComputerName>Mickey</sso:ComputerName>
          <sso:IPAddress>10.20.30.75</sso:IPAddress>
          <sso:TCPPort>46578</sso:TCPPort>
          <sso:IsDirector>false</sso:IsDirector>
        </sso:NodeId>
        <sso:UserName>bobbie</sso:UserName>
        <sso:Password></sso:Password>
      </sso:NodeCtx>
    </ap:Login>
  </ap:Authentication>

  <ap:Node>
    <ap:GetUsers Id="kk6w4">
      <sso:UserContent>
        <sso:IsWithAttributes>true</sso:IsWithAttributes>
        <sso:IsWithGroups>true</sso:IsWithGroups>
        <sso:IsWithRoles>true</sso:IsWithRoles>
        <sso:IsWithWorkQs>false</sso:IsWithWorkQs>
      </sso:UserContent>
      <sso:UserNames>
        <sso:string>fredu</sso:string>
        <sso:string>jamesd</sso:string>
        <sso:string>maryc</sso:string>
      </sso:UserNames>
    </ap:GetUsers>
  </ap:Node>

</ap:Action>
```

Action requests are submitted to the Action Processor URL, where the URL is in the following format:

`http://Host:Port/APDir/ActionProcessor.ext`

where:

- *Host* is the name of the machine hosting the Action Processor. (Note that if you are hosting both the iProcess Workspace and the Action Processor on the same machine, and they are both being hosted by Tomcat, you can specify *Host* as "localhost".)
- *Port* is the port number used by the Web Application Server (WAS) that is hosting the Action Processor to communicate with web applications.
- *APDir* is the directory on *Host* in which the Action Processor is installed.
- *ext* is the file name extension. This is "servlet" (for Java servlet) if you are connecting to a Java Action Processor, or "aspx" (for .NET ASP web application) if you are connecting to a .NET Action Processor.

The format for passing the action request to the Action Processor is as follows:

[*ActionProcessorURL*]?**action**=[*ActionRequest*]

For example:

```
http://myserver/ActionProcessor/ActionProcessor.aspx?action=<?xml%20version="1.0"%20encoding="UTF-8"?><ap:Action%20xmlns:ap="http://tibco.com/bpm/actionprocessor"%20xmlns:sso="http://tibco.com/bpm/sso/types"><ap:Authentication><ap:Login%20Id="_jsx_ipcNS_23Login"><sso:NodeCtx><sso:NodeId><sso:Name>i2tagtest</sso:Name><sso:ComputerName>ozquadling</sso:ComputerName><sso:IPAddress>10.97.8.55</sso:IPAddress><sso:TCPPort>58002</sso:TCPPort><sso:IsDirector>>false</sso:IsDirector></sso:NodeId><sso:UserName>swadmin</sso:UserName><sso:Password/></sso:NodeCtx></ap:Login></ap:Authentication></ap:Action>
```

Id Parameter

Note that every request to the Action Processor contains an **Id** parameter. For example:

```
<ap:Authentication>
  <ap:Login Id="x435t">
    .
    .
    .
```

The **Id** parameter can be any string; it is simply echoed back in the response (it is reflected in the **ID** attribute of the **<vResult>** tag in the XML response data). Its purpose is to correlate replies from requests when you make multiple asynchronous requests. You can also pass NULL in the **Id** parameter, which causes the **ID** attribute in the response to be the name of the method call with an initial capital letter.

Request Groups

All Action Processor requests are organized into the following groups:

- Authentication
- Utility
- CaseManager
- Form
- Node
- NodeManager
- ProcManager
- Session
- User
- WorkQ
- WorkQManager

With the exception of **Authentication**, **Utility**, and **Form**, the groups correspond to the XML Server Object of the same name, and contain a request for each method on the XML Server Object. For example, the **ProcManager** group contains 14 requests, one for each of the 14 methods on the **xProcManager** object.



Another exception is the **Session** request group, which only contains a single request — **KeepAliveWorkQDeltaJMSPublications** — whereas the **xSession** object contains that method, as well as additional methods used to create other XML Server Objects.

The **Authentication**, **Utility**, and **Form** groups contain requests that do not appear on any XML Server Object. They contain requests used to login/logout, for working with iProcess Modeler-created forms, and for pinging the Action Processor.

All request elements must be contained within the proper group element, and only one request can be made for each group element. If multiple requests from a group are to be made, multiple group elements must be submitted.

For example, to submit requests for **GetStartProcIds** and **GetWorkQs**, both of which are in the **User** group, they must be submitted as follows:

```
...
<ap:User>
  <ap:GetStartProcIds Id="u886a" />
</ap:User>

<ap:User>
  <ap:GetWorkQs Id="pl07d" />
  <sso:WorkQTags>
    <sso:string>willey|kellyp|R</sso:string>
  </sso:WorkQTags>
</ap:User>
...
```

Schemas

XML Schema Definition (XSD) files are used to validate the XML action requests and responses as follows:

- **apAction.xsd** - This XSD can be used to validate XML action requests sent to the Action Processor. Note, however, that requests are NOT validated by default — this is configurable using the **<IsValidateActionXML>** element in the Action Processor's configuration file, **apConfig.xml** (there is some overhead incurred when validating). For information about setting this configuration parameter, see *TIBCO iProcess Workspace (Browser) Configuration and Customization*.
- **apActionResult.xsd** - You can use this XSD to validate the XML response from the Action Processor. This can be used for design purposes — when referenced in some XML development tools, it provides Microsoft IntelliSense[®]-like features.
- **apSSOTypes.xsd** - Both of the XSD files above reference this XSD, which is generated from the TIBCO iProcess Server Objects.

Note that all elements in this XSD are sequenced, requiring that you submit them in the specified order. For example, the **WIFGContent** parameter required by the **LockItems** request (see above) represents the **vWIFGContent** object in the iProcess Server Objects, which contains two properties: **FieldsOption** and **WIFieldNames**. Because these represent properties on an

object, they must be submitted in the proper order (they are defined within a <sequence> element in **apSSOTypes.xsd**).

```
<xs:complexType name="vWIFGContent">
  <xs:complexContent mixed="false">
    <xs:extension base="tns:vContentRequest">
      <xs:sequence>
        <xs:element minOccurs="1" maxOccurs="1"
          name="FieldsOption" type="tns:SWFieldsOptionType" />
        <xs:element minOccurs="0" maxOccurs="1"
          name="WIFieldNames" type="tns:ArrayOfString" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Character Encoding

If you are manually sending requests to the Action Processor, you must:

- ensure that special characters within your XML data are properly escaped so that they are not interpreted as XML reserved characters,
- perform proper URI encoding, and
- ensure that UTF-8 encoding is specified in the XML file.

Escaping Special Characters

The following table shows the reserved XML characters that must be escaped within your XML data:

Character	Description	Include in XML as...
<	Less than symbol	<
>	Greater than symbol	>
&	Ampersand	&
'	Single quote (apostrophe)	'
"	Double quote	"

Perform URI Encoding

URI encoding can be performed using the following:

- **Java:**
 - `java.net.URLEncoder` class
- **C# (.NET):**
 - `HTTPUtility.UrlEncode` class
 - or
 - `HTTPUtility.UrlPathEncode` class
- **JavaScript:**
 - `encodeURIComponent()`
 - or
 - `encodeURIComponent()`

Specifying UTF-8 Encoding

UTF-8 encoding is specified in your XML file by including the **encoding** attribute, as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
```



For information about setting character encoding in the web server (using Tomcat as an example), see the *Application Server Settings* chapter in the *TIBCO iProcess Workspace (Browser) Configuration and Customization* guide.

Action Processor Session

The first action the TIBCO iProcess Workspace (Browser) requests is a **Login** request. When the Action Processor receives the **Login** request, it logs into the TIBCO iProcess Objects Server to validate the user's credentials. Then it stores the login details (**vNodeCtx** object) in the session. Subsequent requests to the Action Processor are processed using the login details stored in the session. The **vNodeCtx** remains in the session for the lifetime of the session or until it is replaced by different login credentials from the same client.

Date and Time Format

All dates and times that are sent to the Action Processor must be in the proper XML format. If they are in the wrong format, an error is thrown by the serializer code when the Action Processor passes the date/time to the serializer.

Dates and times must be in the following format:

```
"yyyy-mm-ddThh:mm:ss.0000000"
```

where:

- yyyy-mm-dd = the year, month, and day
- T = a separator between the date and time
- hh:mm:ss = the hour, minute, and second
- .0000000 represents milliseconds, but is always zeros in this context

For example:

```
2005-06-29T10:30:28.0000000
```

Dates and times returned by the Action Processor are also in the format shown above.

Responses to Actions

Once the Action Processor has processed all of the individual requests in an action, it consolidates the data under a single XML root element, **<ap:ActionResult>**. This XML response is then sent back to the client via HTTP.

The format of the XML response is as follows:

```
<?xml version='1.0' encoding='UTF-8'?>
<ap:ActionResult xmlns:ap='http://tibco.com/bpm/actionprocessor'>

  <ap:Status>
    <ap:Version></ap:Version>
    <ap:ReturnCode></ap:ReturnCode>
    <ap:ReturnComment></ap:ReturnComment>
    <ap:ReturnDateTime></ap:ReturnDateTime>
    <ap:ExceptionMessage></ap:ExceptionMessage>
    <ap:ExceptionStackTrace></ap:ExceptionStackTrace>
  </ap:Status>

  <ap:S0>
    <sso:vSSOData xmlns:sso="http://tibco.com/bpm/sso/types">
      <sso:Results>
        <!-- The Results of all Requests in the Action -->
      </sso:Results>
    </sso:vSSOData>
  </ap:S0>

</ap:ActionResult>
```

Response Status

The XML response to the client contains an **<ap:Status>** element that indicates whether or not the action was successfully processed. It also contains information to help determine the problem if an error does occur.

The **<ap:Status>** element provides the version number of the Action Processor and the date and time the response was returned to the client. For example:

```
<?xml version="1.0"?>
<ap:ActionResult xmlns:ap="http://tibco.com/bpm/sso/types/ActionProcessor">

  <ap:Status>
    <ap:Version>11.3.0</ap:Version>
    <ap:ReturnCode>0</ap:ReturnCode>
    <ap:ReturnComment>The Action was processed successfully. Check the individual
      Request Results for their status.</ap:ReturnComment>
    <ap:ReturnDateTime>2006-03-03T16:10:16.211-0800</ap:ReturnDateTime>
  </ap:Status>
```



Whether the Action Processor version is displayed in the response status is determined by the **IsReturnVersion** parameter in the **apConfig.xml** file. For more information, see *TIBCO iProcess Workspace (Browser) Configuration and Customization*.

If the **<ap:ReturnCode>** element contains a 0 (zero), the action was processed successfully.

If the **<ap:ReturnCode>** element contains any number other than a 0, an error has occurred.

The following table lists all of the possible return codes, as well as the comment that is returned in the **<ap:ReturnComment>** element for each return code. The comment can be used to help determine the cause of the error.

Return Code	Return Comment
0	The action was processed successfully. Check the individual Request Results for their status.
-1	Exception Thrown. ¹
-2	There was no Action specified.
-3	Invalid Action XML.

Return Code	Return Comment
-4	The Action contains no Requests.
-5	The Request has no Name specified.
-6	There can only ever be a single Request in an Action when that Request is a HTML Request.
-7	There is no node context associated with this session, a Login is required.
-8	Failed to create xSession.
-9	Unknown Request type.
-10	Invalid apConfig XML.
-11	Internal error, see Action Processor log for details.
-12	No WorkItem tag was specified.
-13	Unable to determine Procedure.
-14	Unable to determine Step.
-15	Unknown Form type.
-16	<i>This error indicates an XML validation error. The return comment will be a detailed description of the syntax error in the XML.</i>

1. This indicates that an error has occurred somewhere other than in the Action Processor, e.g., in the iProcess Objects Server. For more information see [Errors Outside the Action Processor on page 14](#).

The value in the **<ap:ReturnDateTime>** element is in the form:

yyyy-mm-ddThh:nn:ss.uuu+/-oooo

where:

- yyyy-mm-dd = year, month, and day the XML response was sent
- T = separator between the date and time
- hh:nn:ss.uuu = hour, minute, second, and microsecond the XML response was sent
- +/- = indicates whether the offset from GMT is plus (+) or minus (-)
- oooo = offset (in 2400-hour format) from Greenwich Mean Time (GMT)

For example:

2006-04-26T08:02:02.146-0700

In this example, the “-0700” indicates minus 7 hours from GMT.

Errors Outside the Action Processor

If an error occurs somewhere outside of the Action Processor — for instance, in the iProcess Objects Server — the Action Processor will pass the error through and show it in the **<ap:Status>** element.

If an error occurs outside the Action Processor, a -1 is returned in the **<ap:ReturnCode>** element, and two additional elements are shown under **<ap:Status>**. They are shown below:

```
<ap:Status>
  <ap:Version></ap:Version>
  <ap:ReturnCode></ap:ReturnCode>
  <ap:ReturnComment></ap:ReturnComment>
  <ap:ReturnDateTime></ap:ReturnDateTime>
  <ap:ExceptionMessage></ap:ExceptionMessage>
  <ap:ExceptionStackTrace></ap:ExceptionStackTrace>
</ap:Status>
```

where:

- **<ap:ExceptionMessage>** is the exception message that is being passed through by the Action Processor.
- **<ap:ExceptionStackTrace>** provides information on the execution history of the current thread, displaying the names of the classes and methods within those classes that had been called at the point when the exception occurred.

The following shows an example response when an exception occurs outside of the Action Processor:

```
<?xml version='1.0' encoding='UTF-8'?>
<ap:ActionResult xmlns:ap='http://tibco.com/bpm/actionprocessor'>

  <ap:Status>
    <ap:Version>11.3.0</ap:Version>
    <ap:ReturnCode>-1</ap:ReturnCode>
    <ap:ReturnComment>Exception Thrown.</ap:ReturnComment>
    <ap:ReturnDateTime>2006-03-09T14:55:53.747-0800</ap:ReturnDateTime>
    <ap:ExceptionMessage>
      <![CDATA[ Unknown username or bad password. ]]>
    </ap:ExceptionMessage>
    <ap:ExceptionStackTrace>
      <![CDATA[
        at com.tibco.bpm.actionprocessor.ActionProcessor.GetXSession(Action
          aAction) in c:\inetpub\wwwroot\actionprocessor\actionprocessor
            .aspx.cs:line 301
        at com.tibco.bpm.actionprocessor.ActionProcessor.process() in
          c:\inetpub\wwwroot\actionprocessor\actionprocessor.aspx.cs:line 513
        ]]>
    </ap:ExceptionStackTrace>
  </ap:Status>
</ap:ActionResult>
```

Chapter 2 **Requests**

This chapter provides a list of all Action Processor requests, including the parameters required for each request.

Note that you will need to use the TIBCO iProcess Server Objects (Java or .NET) on-line help system in conjunction with this reference guide. The on-line help provides details about the parameters that need to be passed with each request.

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Introduction

Action Processor requests are organized in this chapter by request group.

The parameters required for each request are listed in the **Parameter** column of the table shown for each request. The details of these parameters are provided in the [Parameters](#) chapter on [page 53](#). You can cross-reference the parameter names with the details of the parameters by clicking on the parameter name in the **Parameters** column (note that some requests allow multiple sets of parameters).

With the exception of **Authentication**, **Utility**, and **Form**, the request groups correspond to the XML Server Object of the same name, and contain a request for each method on the XML Server Object. For example, the **ProcManager** group contains 14 requests, one for each of the 14 methods on the **xProcManager** object.



Another exception is the **Session** request group, which only contains a single request — **KeepAliveWorkQDeltaJMSPublications** — whereas the **xSession** object contains that method, as well as additional methods used to create other XML Server Objects.

The **Authentication**, **Utility**, and **Form** groups contain requests that do not appear on any XML Server Object. They contain requests used to login/logout, for working with iProcess Modeler-created forms, and for pinging the Action Processor.

Note that this document does not provide details about the operation of each method/request. For that information, see the TIBCO iProcess Server Objects (Java or .NET) on-line help system.

Authentication

The following table lists the requests available in the **Authentication** group. Click on the request name to view request parameter information.

Request Name	Description
Login	Logs user into the TIBCO iProcess Objects Server
Logout	Logs user out of the TIBCO iProcess Objects Server

The Action Processor requests listed in this section must be enclosed in an **<Authentication>** element.

Login

The **Login** request logs the user into the TIBCO iProcess Objects Server, using the credentials provided in the **vNodeCtx** object. (Note that there is no Login method on the XML Server Objects because there is an implied login each time an XML Server Object is constructed — user credentials are passed on the object constructor.)

Request Name	Parameter
Login	NodeCtx

Login Request Example:

```
<ap:Authentication>
  <ap:Login Id="x435t">
    <sso:NodeCtx>
      <sso:NodeId>
        <sso:Name>myNode</sso:Name>
        <sso:ComputerName>Mickey</sso:ComputerName>
        <sso:IPAddress>10.20.30.75</sso:IPAddress>
        <sso:TCPPort>46578</sso:TCPPort>
        <sso:IsDirector>>false</sso:IsDirector>
      </sso:NodeId>
      <sso:UserName>bobbie</sso:UserName>
      <sso>Password></sso>Password>
    </sso:NodeCtx>
  </ap:Login>
</ap:Authentication>
```

Logout

The **Logout** request logs the user out of the TIBCO iProcess Objects Server.

Request Name	Parameter
Logout	None
	ReleaseAllResources

ReleaseAllResources = “false” causes the “user session” to be closed, which closes the TCP connection between the client and the iProcess Objects Server.

ReleaseAllResources = “true” (the default) causes the “user session” to be closed, which closes the TCP connection between the client and the iProcess Objects Server. This also closes the “SAL session”, which releases all lists held on the iProcess Objects Server — this releases all client-side and server-side resources.

Utility

The following table lists the requests available in the **Utility** group. Click on the request name to view request parameter information.

Request	Description
Ping	Returns True if the Action Processor is running.

The Action Processor requests listed in this section must be enclosed in a **<Utility>** element.

Ping

The **Ping** request allows you to determine if the Action Processor is running. It returns True if the Action Processor is running, False if it is not running.

Request Name	Parameter
Ping	<i>None</i>

CaseManager

The following table lists the requests available in the **CaseManager** group. Click on the request name to view request parameter information.

Request Name	Description
GetProcIds	Get procedure IDs
GetACases MakeACaseList FetchACaseList	Get cases
GetAuditSteps SetCaseData SetCaseSuspended GetCaseCnt GetOutstandingItems GetSubProcCases JumpTo TriggerEvent ReleaseEAllItem	Manage cases
SetGraftTaskCnt StartGraftTask DeleteGraftTask ExternalGraftProcessComp	Control graft steps
PredictCase MakePredictedItemList FetchPredictedItemList	Case prediction
CloseCases CloseCasesByCriteria	Close cases
PurgeCases PurgeCasesByCriteria PurgeAndReset	Purge cases

The Action Processor requests listed in this section must be enclosed in a **<CaseManager>** element.

CaseManager Group	
Request Name	Parameters
GetProcIds	None
GetACases	CaseTags ACaseContent
MakeACaseList	ProcTag ACaseCriteria ACaseContent StartIndex ReturnCount Hold
FetchACaseList	HeldId StartIndex ReturnCount Hold
GetAuditSteps	CaseTag SortAscending
SetCaseData	CaseTag Fields
SetCaseSuspended	CaseTags Suspend Wait CaseTag Suspend Wait Fields UpdateOutstanding
GetCaseCnt	ProcTag FilterExpression

CaseManager Group	
Request Name	Parameters
GetOutstandingItems	CaseTag
	OutstandingItemContent
	IncludeSubProcs
GetSubProcCases	CaseTag
	IncludeSubProcs
JumpTo	CaseTag
	WithdrawList
	SendList
	Reason
	Wait
	CaseTag
	WithdrawList
	SendList
	Reason
	Wait
	Fields
	UpdateOutstanding
TriggerEvent	CaseTag
	EventName
	CaseTag
	EventName
	Fields
	UpdateOutstanding
	DeadlineCalculate
	CaseTag
	EventName
	Resurrect
	Fields

CaseManager Group	
Request Name	Parameters
ReleaseEAItem	ExternalId Fields
	ExternalId Fields NextStep DoActions
SetGraftTaskCnt	CaseTag GraftId StepName TaskCnt
	CaseTag GraftId StepName GraftSubTasks
DeleteGraftTask	CaseTag GraftId StepName
	CaseTag GraftId StepName GraftSubTask
ExternalGraftProcessComp	CaseTag GraftId StepName GraftSubTask

CaseManager Group	
Request Name	Parameters
PredictCase	CaseTag
	CaseTag Fields
	CaseTag MaxSubProc MaxStepLoop
	CaseTag MaxSubProc MaxStepLoop Fields
MakePredictedItemList	PredictionCriteria StartIndex ReturnCount Hold
FetchPredictedItemList	HeldId StartIndex ReturnCount Hold
CloseCases	CaseTags
	CaseTags DoEvent Priority
	ProcTag
	ProcTag DoEvent Priority

CaseManager Group	
Request Name	Parameters
CloseCasesByCriteria	CloseCriteria ProcTags
	CloseCriteria ProcTags DoEvent Priority
PurgeCases	CaseTags
	CaseTags DoEvent Priority ProcTag ProcTag DoEvent Priority
PurgeCasesByCriteria	PurgeCriteria ProcTags
	PurgeCriteria ProcTags DoEvent Priority
PurgeAndReset	ProcTags
	ProcTags DoEvent Priority

Form

The following table lists the requests available in the **Form** group. Click on the request name to view request parameter information.

Request Name	Description
RenderForm	Locks the work item and displays the HTML representation of the TIBCO iProcess Modeler-generated form
StartCaseForm	Displays the first form of the specified procedure
KeepForm	Closes the form, keeps the work item, and saves data
ReleaseForm	Closes the form, releases the work item, and saves data
UndoForm	Closes the form, keeps the work item, but does not save data

The Action Processor requests listed in this section must be enclosed in a **<Form>** element.

RenderForm

The **RenderForm** request locks the work item and displays the HTML representation of the TIBCO iProcess Modeler form. The work item is identified by a work item tag.

Request Name	Parameter
RenderForm	WorkItemTag

StartCaseForm

The **StartCaseForm** request displays the HTML representation of the TIBCO iProcess Modeler form for the first step in the specified procedure.

Request Name	Parameters
StartCaseForm	ProcTag
	Description
	ProcTag
	Description
	SubProcPrecedence

KeepForm

The **KeepForm** request closes the form, unlocks the work item, and keeps the work item in the work queue. The WIFieldData parameter identifies the work item to keep, as well as provides updated work item data to save.

Request Name	Parameter
KeepForm	WIFieldData

ReleaseForm

The **ReleaseForm** request closes the form, unlocks the work item, then releases the work item. The WIFieldData parameter identifies the work item to release, as well as provides updated work item data to save.

Request Name	Parameter
ReleaseForm	WIFieldData

UndoForm

The **UndoForm** request closes the form, unlocks the work item. and keeps the work item in the work queue. The WIFieldData parameter identifies the work item to unlock. Work item data is not saved.

Request Name	Parameter
UndoForm	WIFieldData

Node

The following table lists the requests available in the **Node** group. Click on the request name to view request parameter information.

Request Name	Description
GetANode	Get vANode object
GetUserAttributes	Manage user attributes
GetGroupAttributes	
ChangeAttributes	
GetAttributeDefs	
CreateAttributeDefs	
DeleteAttributeDefs	
GetAGroups	Manage groups
MakeAGroupList	
FetchAGroupList	
CreateGroups	
DeleteGroups	
AddUsersToGroups	
RemoveUsersFromGroups	
GetOSUsers	Manage OS users
MakeOSUserList	
FetchOSUserList	
GetUsers	Manage users
MakeUserList	
FetchUserList	
CreateUser	
DeleteUsers	
GetRoles	Manage roles
CreateRoles	
DeleteRoles	
GetTables	Manage tables and lists
GetListValidations	

Request Name	Description
MakeWorkQIdList	Get work queue lists
FetchWorkQIdList	
MoveSysInfo	Update system information

The Action Processor requests listed in this section must be enclosed in a <Node> element.

Node Group	
Request Name	Parameters
GetANode	<i>None</i>
GetUserAttributes	UserName
	UserName AttributeNames
GetGroupAttributes	GroupName
	GroupName AttributeNames
ChangeAttributes	UserNames Attributes
GetAttributeDefs	<i>None</i>
	AttributeNames
CreateAttributeDefs	AttributeDefs
DeleteAttributeDefs	AttributeNames
GetAGroups	GroupNames AGroupContent

Node Group	
Request Name	Parameters
MakeAGroupList	AGroupContent StartIndex ReturnCount Hold
FetchAGroupList	HeldId StartIndex ReturnCount Hold
CreateGroups	Groups
DeleteGroups	GroupNames
AddUsersToGroups	GroupNames UserNames
RemoveUsersFromGroups	GroupNames UserNames
GetOSUsers	OSUserNames
MakeOSUserList	StartIndex ReturnCount Hold
FetchOSUserList	HeldId StartIndex ReturnCount Hold
GetUsers	UserNames UserContent
MakeUserList	UserContent StartIndex ReturnCount Hold

Node Group	
Request Name	Parameters
FetchUserList	HeldId StartIndex ReturnCount Hold
CreateUser	UserName Attributes GroupNames
DeleteUsers	UserNames
GetRoles	None RoleNames
CreateRoles	Roles
DeleteRoles	RoleNames
GetTables	None TableNames
GetListValidations	None ListValidationNames
MakeWorkQIdList	StartIndex ReturnCount Hold
FetchWorkQIdList	HeldId StartIndex ReturnCount Hold
MoveSysInfo	None

NodeManager

The following table lists the requests available in the **NodeManager** group. Click on the request name to view request parameter information.

Request Name	Description
VerifyNode	iProcess Objects Server/Director discovery.
GetNodes	
GetANode	
SetSrvLogOptions	Setting server log options.
ResetSrvLog	

The Action Processor requests listed in this section must be enclosed in a **<NodeManager>** element.

NodeManager Group	
Request Name	Parameters
VerifyNode	ComputerId NodeName UDPPortNumbers Instance
GetNodes	UDPPortNumbers
GetANode	NodeCtx
SetSrvLogOptions	NodeCtx Categories LogLevel Trace MaxSize
ResetSrvLog	NodeCtx

ProcManager

The following table lists the requests available in the **ProcManager** group. Click on the request name to view request parameter information.

Request Name	Description
GetProcIds	Get procedures
GetProcs	
GetAProcs	
GetProcDefs	Get procedure definitions
GetProcVersions	
GetStepIds	Get step/field definitions
GetSteps	
GetPublicSteps	
GetFieldDefs	
GetForm	Get form definitions
GetFormMarkings	
GetExternalForm	
GetPluginForm	
SimulateCase	Case simulation

The Action Processor requests listed in this section must be enclosed in a <**ProcManager**> element.

ProcManager Group	
Request Name	Parameters
GetProcIds	None
	ProcTags
GetProcs	None
	ProcTags

ProcManager Group	
Request Name	Parameters
GetAProcs	AProcContent
	ProcTags AProcContent
GetProcDefs	ProcDefContent
	ProcTags ProcDefContent
GetProcVersions	ProcName
	AProcContent
GetStepIds	ProcTag
GetSteps	ProcTag StepContent
	ProcTag StepNames StepContent
GetPublicSteps	ProcTag
	StepContent
GetFieldDefs	ProcTag
GetForm	ProcTag
	StepName
GetFormMarkings	ProcTag
	StepName
GetExternalForm	ProcTag
	StepName
GetPluginForm	ProcTag
	StepName

ProcManager Group	
Request Name	Parameters
SimulateCase	ProcTag
	ProcTag
	Fields
	StepNames
	ProcTag
	MaxStepLoop
	MaxSubProc
	Fields
	StepNames

IPEConfig

The following table lists the requests available in the **IPEConfig** group. Click on the request name to view request parameter information.

Request	Description
GetActivityPub	Returns an XML string that represents a Message Event Request (MER) message. The MER specifies how activity monitoring will occur in the iProcess Engine. If the request with no parameter is used, the MER will include activity monitoring configuration information for all procedures for which it has been defined.
SetActivityPub	Used to set the activity monitoring (event publication) configuration for the iProcess Engine. You must pass a Message Event Request (MER) message in the method call in the form of an XML string. The MER message can be written with any available XML tool. The MER message must conform to the SWMonitorList.xsd schema (which is written to the SWDIR\schemas directory when the iProcess Engine is installed).

The Action Processor requests listed in this section must be enclosed in a <**IPEConfig**> element.

Request Name	Parameter
GetActivityPub	None
	ProcName
SetActivityPub	Sting

Session

The following table lists the requests available in the **Session** group. Click on the request name to view request parameter information.

Request	Description
KeepAliveWorkQDeltaJMSPublications	Notifies the WIS that the application is still active and wants the WIS to continue to publish deltas to JMS.
GetClientMsgInterfaceVer	Returns the iProcess Server Objects Client Message Interface version. This version can be used by GUIs and applications to conditionally show functionality based on the services available in the iProcess Server Objects Client.
GetServerMsgInterfaceVer	Returns the iProcess Objects Server Message Interface version. This version can be used by GUIs and applications to conditionally show functionality based on the services available in the iProcess Objects Server.

The Action Processor requests listed in this section must be enclosed in a **<Session>** element.

Request Name	Parameter
KeepAliveWorkQDeltaJMSPublications	None
GetClientMsgInterfaceVer	None
GetServerMsgInterfaceVer	None

User

The following table lists the requests available in the **User** group. Click on the request name to view request parameter information.

Request Name	Description
StartCase	Start case
GetAuditProcIds GetStartProcIds	Determine user's audit/start permissions
GetWorkItems GetUserId GetProcs GetSupervisedQIds GetWorkQIds GetWorkQs GetAttributes GetGroups GetRoleNames	Get user-related information
ChangePassword IsPasswordExpired	Manage passwords
AddCaseAuditEntry GetCustomAuditMsgDefs	Manage case audit trail
SetUserPreference GetUserPreference DeleteUserPreference	Manage user preference data

The Action Processor requests listed in this section must be enclosed in a **<User>** element.

User Group	
Request Name	Parameters
StartCase	ProcTag
	Description
	ProcTag
	Description
	ReleaseItem
	ValidateFields
	Fields
	ProcTag
	Description
	SubProcPrecedence
	StartStepName
	ReleaseItem
	ValidateFields
	Fields
GetAuditProcIds	None
GetStartProcIds	None
GetWorkItems	WorkItemTags
	WIContent
GetUserId	None
GetProcs	ProcTags
GetSupervisedQIds	None
GetWorkQIds	None
GetWorkQs	None
	WorkQTags

User Group	
Request Name	Parameters
GetAttributes	<i>None</i>
	AttributeNames
GetGroups	GroupContent
GetRoleNames	<i>None</i>
ChangePassword	OldPassword NewPassword
IsPasswordExpired	<i>None</i>
AddCaseAuditEntry	CaseTag StepName StepDescription UserName MessageId
GetCustomAuditMsgDefs	<i>None</i>
SetUserPreference	UserName Preference
GetUserPreference	UserName PreferenceName
DeleteUserPreference	UserName PreferenceName

WorkQ

The following table lists the requests available in the **WorkQ** group. Click on the request name to view request parameter information.

Request Name	Description
GetWorkQ	Get the work queue
GetWorkItems	Get work items from the queue
MakeWorkItemList	
FetchWorkItemList	
FetchWorkItemListDelta	
FetchWorkItemListIfChanged	
GetAWorkItems	
MakeAWorkItemList	
FetchAWorkItemList	
FetchAWorkItemListDelta	
FetchAWorkItemListIfChanged	
MakeAWorkItemListJMS	
StartWorkQDeltaJMSPublish	
FetchAWorkItemListJMS	
StartCase	Start a case
LockItems	Process work items
LockFirstWorkItem	
LockFirstAWorkItem	
KeepItems	
ReleaseItems	
UndoItems	
UnlockItems	
GetForwardToWorkQIds	Forward work items
ForwardItems	
GetDefaultCriteria	Manage default filter / sort criteria
ChangeDefaultCriteria	
ClearDefaultCriteria	
GetForm	Get iProcess form information

Request Name	Description
AddCaseAuditEntry	Manage case audit trail
GetCustomAuditMsgDefs	

The Action Processor requests listed in this section must be enclosed in a **<WorkQ>** element.

WorkQ Group	
Request Name	Parameters
GetWorkQ	WorkQTag
GetWorkItems	WorkQTag WorkItemTags WIContent
MakeWorkItemList	WorkQTag WICriteria WIContent StartIndex ReturnCount Hold
FetchWorkItemList	WorkQTag HeldId StartIndex ReturnCount Hold Refresh
FetchWorkItemListDelta	WorkQTag HeldId MaxCount Hold
FetchWorkItemListIfChanged	WorkQTag HeldId StartIndex ReturnCount Hold

WorkQ Group	
Request Name	Parameters
GetAWorkItems	WorkQTag WorkItemTags AWIContent
MakeAWorkItemList	WorkQTag WICriteria AWIContent StartIndex ReturnCount Hold
FetchAWorkItemList	WorkQTag HeldId StartIndex ReturnCount Hold Refresh
FetchAWorkItemListDelta	WorkQTag HeldId MaxCount Hold
FetchAWorkItemListIfChanged	WorkQTag HeldId StartIndex ReturnCount Hold
MakeAWorkItemListJMS	WorkQTag WICriteria TopicName
StartWorkQDeltaJMSPublish	WICriteria HeldId WorkQDeltaId WorkQSyncId

WorkQ Group	
Request Name	Parameters
FetchAWorkItemListJMS	WICriteria HeldId StartIndex ReturnCount
StartCase	WorkQTag ProcTag Description SubProcPrecedence StartStepName Fields ReleaseItem ValidateFields
LockItems	WorkQTag WorkItemTags WIFGContent
LockFirstWorkItem	HeldId StartIndex WIFGContent
LockFirstAWorkItem	HeldId StartIndex WIFGContent
KeepItems	WorkQTag WIFieldData ValidateFields
ReleaseItems	WorkQTag WIFieldData ValidateFields
UndoItems	WorkQTag WorkItemTags
UnlockItems	WorkQTag WorkItemTags

WorkQ Group	
Request Name	Parameters
GetForwardToWorkQIds	WorkQTag WorkItemTag
ForwardItems	WorkQTag WorkItemTags DestWorkQTag
GetDefaultCriteria	WorkQTag
ChangeDefaultCriteria	WorkQTag WICriteria
ClearDefaultCriteria	WorkQTag
GetForm	WorkQTag ProcTag StepName
AddCaseAuditEntry	WorkQTag CaseTag StepName StepDescription UserName MessageId
GetCustomAuditMsgDefs	WorkQTag

WorkQManager

The following table lists the requests available in the **WorkQManager** group. Click on the request name to view request parameter information.

Request Name	Description
GetWorkQIds	Get work queue IDs
MakeWorkQIdList	
FetchWorkQIdList	
GetWorkQs	Get work queues
MakeWorkQList	
FetchWorkQList	
GetAWorkQs	
MakeAWorkQList	
FetchAWorkQList	
GetSupervisorNames	Manage work queue supervisors
AddSupervisors	
RemoveSupervisors	
GetRedirection	Manage redirection
ChangeRedirection	
CancelRedirection	
GetParticipations	Manage participation
CreateParticipations	
ChangeParticipation	
RemoveParticipations	
GetCDQPDefs	Get Case Data Queue Parameters (CDQPs)
GetClientMsgInterfaceVer	Get message interface versions
GetServerMsgInterfaceVer	

The Action Processor requests listed in this section must be enclosed in a **<WorkQManager>** element.

WorkQManager Group	
Request Name	Parameters
GetWorkQIds	WorkQTags
MakeWorkQIdList	StartIndex ReturnCount Hold
FetchWorkQIdList	HeldId StartIndex ReturnCount Hold
GetWorkQs	WorkQTags
MakeWorkQList	StartIndex ReturnCount Hold
FetchWorkQList	HeldId StartIndex ReturnCount Hold
GetAWorkQs	WorkQTags AWorkQContent
MakeAWorkQList	AWorkQContent StartIndex ReturnCount Hold
FetchAWorkQList	HeldId StartIndex ReturnCount Hold
GetSupervisorNames	WorkQTag
AddSupervisors	SupervisorNames WorkQTags

WorkQManager Group	
Request Name	Parameters
RemoveSupervisors	SupervisorNames WorkQTags
GetRedirection	WorkQTag
ChangeRedirection	WorkQTag Redirection
CancelRedirection	WorkQTags
GetParticipations	WorkQTag
CreateParticipations	WorkQTag Participations
ChangeParticipation	WorkQTag ExistingParticipation ChangedParticipation
RemoveParticipations	WorkQTag Participations
GetCDQPDefs	WorkQTag

Chapter 3 Parameters

This chapter provides an alphabetical list of the parameters that are submitted with Action Processor requests.

You may need to use the TIBCO iProcess Server Objects (Java or .NET) on-line help system in conjunction with this chapter to find details about the data that is passed in these parameters.



The parameters listed in this chapter may be validated using **apSSOTypes.xsd** (validation can be turned on or off — for more information, see [Schemas on page 7](#)). Within this XSD, the parameter elements are specified in **<sequence>** elements, which means that you submit them in the specified order. They are listed in the required order in this document.

Topics

- [Parameters Details, page 54](#)

Parameters Details

Parameter Name	Format
ACaseContent	<pre><sso:ACaseContent> <sso:IsReturnAllFields /> <sso:CaseFieldNames /> <sso:IsWithAuditData /> <sso:IsAuditAscending /> <sso:AuditFilterExpression /> </sso:ACaseContent></pre>
ACaseCriteria	<pre><sso:ACaseCriteria> <sso:FilterExpression /> <sso:SortFields> <sso:vSortField> <sso:FieldName /> <sso:IsAscending /> <sso:SortTypeAs /> </sso:vSortField> </sso:SortFields> <sso:MaxCnt /> </sso:ACaseCriteria></pre>
AGroupContent	<pre><sso:AGroupContent> <sso:IsWithAttributes /> <sso:IsWithUserNames /> </sso:AGroupContent></pre>
AProcContent	<pre><sso:AProcContent> <sso:IsWithProcSummary /> </sso:AProcContent></pre>

Parameter Name	Format
AttributeDefs	<pre> <sso:AttributeDefs> <sso:vAttributeDef> <sso:Name /> <sso:Value /> <sso:Type /> <sso:Length /> <sso:DecimalPlaceCnt /> </sso:vAttributeDef> </sso:AttributeDefs> </pre>
AttributeNames	<pre> <sso:AttributeNames> <sso:string /> </sso:AttributeNames> </pre>
Attributes	<pre> <sso:Attributes> <sso:vAttribute /> </sso:Attributes> </pre>
AWIContent	<pre> <sso:AWIContent> <sso:IsReturnAllFields /> <sso:CaseFieldNames /> <sso:IsReturnAllCDQPs /> <sso:CDQPNames /> <sso:IsWithForwardToWorkQIds /> </sso:AWIContent> </pre>
WorkQContent	<pre> <sso:WorkQContent> <sso:IsWithParticipation /> <sso:IsWithRedirection /> <sso:IsWithSupervisorNames /> <sso:IsWithCDQPDefs /> </sso:WorkQContent> </pre>
CaseTag	<pre> <sso:CaseTag /> </pre>

Parameter Name	Format
CaseTags	<pre> <sso:CaseTags> <sso:string /> </sso:CaseTags> </pre>
Categories	<pre> <sso:Categories /> </pre>
ChangedParticipation	<pre> <sso:ChangedParticipation> <sso:Name /> <sso:Index /> <sso:Qname /> <sso:StartingDate> <sso:IsValueSet /> <sso:Date /> </sso:StartingDate> <sso:EndingDate> <sso:IsValueSet /> <sso:Date /> </sso:EndingDate> <sso:StartingTime> <sso:IsValueSet /> <sso:Time /> </sso:StartingTime> <sso:EndingTime> <sso:IsValueSet /> <sso:Time /> </sso:EndingTime> <sso:IsSunday /> <sso:IsMonday /> <sso:IsTuesday /> <sso:IsWednesday /> <sso:IsThursday /> <sso:IsFriday /> <sso:IsSaturday /> <sso:UserNames> <sso:string /> </sso:UserNames> </sso:ChangedParticipation> </pre>
CloseCriteria	<pre> <sso:CloseCriteria /> </pre>

Parameter Name	Format
ComputerId	<sso:ComputerId />
DeadlineCalculate	<sso:DeadlineCalculate />
Description	<sso:Description />
DestWorkQTag	<sso:DestWorkQTag />
DoActions	<sso:DoActions />
DoEvent	<sso:DoEvent />
Priority	<sso:Priority />
EventName	<sso:EventName />

Parameter Name	Format
ExistingParticipation	<pre><sso:ExistingParticipation> <sso:Name /> <sso:Index /> <sso:Qname /> <sso:StartingDate> <sso:IsValueSet /> <sso:Date /> </sso:StartingDate> <sso:EndingDate> <sso:IsValueSet /> <sso:Date /> </sso:EndingDate> <sso:StartingTime> <sso:IsValueSet /> <sso:Time /> </sso:StartingTime> <sso:EndingTime> <sso:IsValueSet /> <sso:Time /> </sso:EndingTime> <sso:IsSunday /> <sso:IsMonday /> <sso:IsTuesday /> <sso:IsWednesday /> <sso:IsThursday /> <sso:IsFriday /> <sso:IsSaturday /> <sso:UserNames> <sso:string /> </sso:UserNames> </sso:ExistingParticipation></pre>
ExternalId	<pre><sso:ExternalId /></pre>

Parameter Name	Format
Fields	<pre><sso:Fields> <sso:vField> <sso:Name /> <sso:FieldType /> <sso:Value /> </sso:vField> </sso:Fields></pre>
FilterExpression	<pre><sso:FilterExpression /></pre>
GraftId	<pre><sso:GraftId /></pre>
GraftSubTask	<pre><sso:GraftSubTask> <sso:Fields> <sso:vField> <sso:Name /> <sso:FieldType /> <sso:Value /> </sso:vField> </sso:Fields> <sso:Name /> <sso:Type /> <sso:Status /> </sso:GraftSubTask></pre>

Parameter Name	Format
GraftSubTasks	<pre><sso:GraftSubTasks /> <sso:GraftSubTask> <sso:Fields> <sso:vField> <sso:Name /> <sso:FieldType /> <sso:Value /> </sso:vField> </sso:Fields> <sso:Name /> <sso:Type /> <sso:Status /> </sso:GraftSubTask> </sso:GraftSubTasks></pre>
GroupContent	<pre><sso:GroupContent> <sso:IsWithAttributes /> </sso:GroupContent></pre>
GroupName	<pre><sso:GroupName /></pre>
GroupNames	<pre><sso:GroupNames> <sso:string /> </sso:GroupNames></pre>

Parameter Name	Format
Groups	<pre> <sso:Groups> <sso:vAGroup> <sso:vGroup> <sso:vGroupId> <sso:Name /> <sso:Description /> </sso:vGroupId> <sso:Attributes> <sso:vAttribute /> </sso:Attributes> </sso:vGroup> <sso:UserNames> <sso:string /> </sso:UserNames> </sso:vAGroup> </sso:Groups> </pre>
HeldId	<pre><sso:HeldId /></pre>
Hold	<pre><sso:Hold /></pre>
IncludeSubProcs	<pre><sso:IncludeSubProcs /></pre>
Instance	<pre><sso:Instance /></pre>
ListValidationNames	<pre> <sso:ListValidationNames> <sso:string /> </sso:ListValidationNames> </pre>
LogLevel	<pre><sso:LogLevel /></pre>
MaxCount	<pre><sso:MaxCount /></pre>
MaxSize	<pre><sso:MaxSize /></pre>
MaxStepLoop	<pre><sso:MaxStepLoop /></pre>
MaxSubProc	<pre><sso:MaxSubProc /></pre>
MessageId	<pre><sso:MessageId /></pre>

Parameter Name	Format
NewPassword	<sso:NewPassword />
NextStep	<sso:NextStep />
NodeCtx	<sso:NodeCtx> <sso:NodeId> <sso:Name /> <sso:ComputerName /> <sso:IPAddress /> <sso:TCPPort /> <sso:IsDirector /> </sso:NodeId> <sso:UserName /> <sso>Password /> </sso:NodeCtx>
NodeId	<sso:NodeId> <sso:Name /> <sso:ComputerName /> <sso:IPAddress /> <sso:TCPPort /> <sso:IsDirector /> </sso:NodeId>
NodeName	<sso:NodeName />
OldPassword	<sso:OldPassword />
OSUserNames	<sso:OSUserNames> <sso:string /> </sso:OSUserNames>

Parameter Name	Format
OutstandingItemContent	<pre><sso:OutstandingItemContent> <sso:IsWithNormalItems /> <sso:IsWithEventItems /> <sso:IsWithEAIItems /> <sso:IsWithSubProcCallItems /> <sso:IsWithDynamicSubProcItems /> <sso:IsWithGraftItems /> <sso:IsWithTransactionControlItems /> </sso:OutstandingItemContent></pre>

Parameter Name	Format
Participations	<pre><sso:Participations> <sso:vParticipation> <sso:Name /> <sso:Index /> <sso:Qname /> <sso:StartingDate> <sso:IsValueSet /> <sso:Date /> </sso:StartingDate> <sso:EndingDate> <sso:IsValueSet /> <sso:Date /> </sso:EndingDate> <sso:StartingTime> <sso:IsValueSet /> <sso:Time /> </sso:StartingTime> <sso:EndingTime> <sso:IsValueSet /> <sso:Time /> </sso:EndingTime> <sso:IsSunday /> <sso:IsMonday /> <sso:IsTuesday /> <sso:IsWednesday /> <sso:IsThursday /> <sso:IsFriday /> <sso:IsSaturday /> <sso:UserNames> <sso:string /> </sso:UserNames> </sso:vParticipation> </sso:Participations></pre>

Parameter Name	Format
PredictionCriteria	<pre> <sso:PredictionCriteria> <sso:FilterExpression /> <sso:SortFields> <sso:vSortField> <sso:FieldName /> <sso:IsAscending /> <sso:SortTypeAs /> </sso:vSortField> </sso:SortFields> <sso:MaxSubProc /> <sso:MaxStepLoop /> </sso:PredictionCriteria> </pre>
Preference	<pre> <sso:Preference> <sso:Name /> <sso:Value /> </sso:Preference> </pre>
PreferenceName	<pre> <sso:PreferenceName /> </pre>
ProcDefContent	<pre> <sso:ProcDefContent> <sso:IsWithAdminBy /> <sso:IsWithStartBy /> <sso:IsWithNetworkNodes /> <sso:IsWithStepIds /> <sso:IsWithFieldDefs /> <sso:IsWithAuditData /> </sso:ProcDefContent> </pre>
ProcName	<pre> <sso:ProcName /> </pre>
ProcTag	<pre> <sso:ProcTag /> </pre>
ProcTags	<pre> <sso:ProcTags> <sso:string /> </sso:ProcTags> </pre>
PurgeCriteria	<pre> <sso:PurgeCriteria /> </pre>

Parameter Name	Format
Reason	<code><sso:Reason /></code>
Redirection	<code><sso:Redirection></code> <code><sso:StartingDateTime></code> <code><sso:IsValueSet /></code> <code><sso:DateTime /></code> <code></sso:StartingDateTime></code> <code><sso:EndingDateTime></code> <code><sso:IsValueSet /></code> <code><sso:DateTime /></code> <code></sso:EndingDateTime></code> <code><sso:WorkQName /></code> <code></sso:Redirection></code>
Refresh	<code><sso:Refresh /></code>
ReleaseAllResources	<code><sso:ReleaseAllResources /></code>
ReleaseItem	<code><sso:ReleaseItem /></code>
Resurrect	<code><sso:Resurrect /></code>
ReturnCount	<code><sso:ReturnCount /></code>
RoleNames	<code><sso:RoleNames></code> <code><sso:string /></code> <code></sso:RoleNames></code>
Roles	<code><sso:Roles></code> <code><sso:vRole></code> <code><sso:Name /></code> <code><sso:UserName /></code> <code></sso:vRole></code> <code></sso:Roles></code>
SendList	<code><sso:SendList></code> <code><sso:string /></code> <code></sso:SendList></code>

Parameter Name	Format
SortAscending	<sso:SortAscending />
StartIndex	<sso:StartIndex />
StartStepName	<sso:StartStepName />
StepContent	<sso:StepContent> <sso:IsWithRouting /> <sso:IsWithMarkings /> <sso:IsWithPublicFields /> </sso:StepContent>
StepDescription	<sso:StepDescription />
StepName	<sso:StepName />
StepNames	<sso:StepNames> <sso:string /> </sso:StepNames>
SubProcPrecedence	<sso:SubProcPrecedence />
SupervisorNames	<sso:SupervisorNames> <sso:string /> </sso:SupervisorNames>
Suspend	<sso:Suspend />
TableNames	<sso:TableNames> <sso:string /> </sso:TableNames>
TaskCnt	<sso:TaskCnt />
TopicName	<sso:TopicName />
Trace	<sso:Trace />
UpdateOutstanding	<sso:UpdateOutstanding />

Parameter Name	Format
UDPPortNumbers	<pre> <sso:UDPPortNumbers> <sso:string /> </sso:UDPPortNumbers> </pre>
UserContent	<pre> <sso:UserContent> <sso:IsWithAttributes /> <sso:IsWithGroups /> <sso:IsWithRoles /> <sso:IsWithWorkQs /> </sso:UserContent> </pre>
UserName	<pre> <sso:UserName /> </pre>
UserNames	<pre> <sso:UserNames> <sso:string /> </sso:UserNames> </pre>
ValidateFields	<pre> <sso:ValidateFields /> </pre>
Wait	<pre> <sso:Wait /> </pre>
WIContent	<pre> <sso:WIContent> <sso:IsReturnAllFields /> <sso:CaseFieldNames> <sso:string /> </sso:CaseFieldNames> <sso:IsReturnAllCDQPs /> <sso:CDQPNames> <sso:string /> </sso:CDQPNames> </sso:WIContent> </pre>

Parameter Name	Format
WICriteria	<pre> <sso:WICriteria> <sso:FilterExpression /> <sso:SortFields> <sso:vSortField> <sso:FieldName /> <sso:IsAscending /> <sso:SortTypeAs /> </sso:vSortField> </sso:SortFields> </sso:WICriteria> </pre>
WIFGContent	<pre> <sso:WIFGContent> <sso:FieldsOption /> <sso:WIFieldNames> <sso:string /> </sso:WIFieldNames> </sso:WIFGContent> </pre>
WIFieldData	<pre> <sso:WIFieldData> <sso:vWIFieldGroup> <sso:WorkItemTag /> <sso:WorkItemFields> <sso:vField> <sso:Name /> <sso:FieldType /> <sso:Value /> </sso:vField> </sso:WorkItemFields> </sso:vWIFieldGroup> </sso:WIFieldData> </pre>
WithdrawList	<pre> <sso:WithdrawList> <sso:string /> </sso:WithdrawList> </pre>
WorkItemTag	<pre> <sso:WorkItemTag /> </pre>

Parameter Name	Format
WorkItemTags	<pre><sso:WorkItemTags> <sso:string /> </sso:WorkItemTags></pre>
WorkQDeltaId	<pre><sso:WorkQDeltaId /></pre>
WorkQSyncId	<pre><sso:WorkQSyncId /></pre>
WorkQTag	<pre><sso:WorkQTag /></pre>
WorkQTags	<pre><sso:WorkQTags> <sso:string /> </sso:WorkQTags></pre>

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