

# **TIBCO Runtime Agent™**

## **Authentication API**

### **User's Guide**

*Software Release 5.10*  
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# Preface

This manual explains how to use TIBCO Runtime Agent™ Authentication API.

## Topics

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- [Changes from the previous Release of this Guide, page vi](#)
- [Related Documentation, page vii](#)
- [Typographical Conventions, page ix](#)
- [Connecting with TIBCO Resources, page xii](#)

## Changes from the previous Release of this Guide

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There are no changes from the previous release of this guide.

## Related Documentation

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This section lists documentation resources you may find useful.

### TIBCO Runtime Agent Documentation

The TIBCO Runtime Agent™ software suite is a prerequisite for other TIBCO software products. In addition to Runtime Agent components, the software suite includes the third-party libraries used by other TIBCO products, TIBCO Designer™, Java Runtime Environment (JRE), TIBCO Rendezvous®, and TIBCO Hawk®.

The following documents form the TIBCO Runtime Agent™ documentation set:

- *TIBCO Runtime Agent™ Installation* Read this manual for instructions on site preparation and installation.
- *TIBCO Runtime Agent™ Installing Into a Cluster* Read this manual for instructions on installing TIBCO applications into a cluster environment.
- *TIBCO Runtime Agent™ Upgrading to Release 5.10.0* Read this manual for instructions on upgrading from release 5.x to release 5.10.0.
- *TIBCO Runtime Agent™ Domain Utility User's Guide* Read this manual for instructions on using TIBCO Domain Utility to create and manage administration domains.
- *TIBCO Runtime Agent™ Scripting Deployment User's Guide* Read this manual for instructions on using the AppManage scripting utility to deploy applications.
- *TIBCO Runtime Agent™ Authentication API User's Guide* Read this manual for instructions on using Authentication API.
- *TIBCO Runtime Agent™ 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.

### Other TIBCO Product Documentation

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

- **TIBCO Administrator™** : TIBCO Administrator allows you to manage users, machines and applications defined in a TIBCO administration domain. The TIBCO Administrator graphical user interface enables users to deploy, monitor, and start and stop TIBCO applications.

- TIBCO Designer™: This graphical user interface is used for designing and creating integration project configurations and building an Enterprise Archive (EAR) for the project. The EAR can then be used by TIBCO Administrator for deploying and running the application.
- TIBCO Hawk®: This is a tool for monitoring and managing distributed applications and operating systems.
- TIBCO Rendezvous®: Rendezvous enables programs running on many different kinds of computers on a network to communicate seamlessly. It includes two main components: the Rendezvous application programming interface (API) in several languages, and the Rendezvous daemon.
- TIBCO Enterprise Message Service™: This software lets application programs send and receive messages using the Java Message Service (JMS) protocol. It also integrates with TIBCO Rendezvous and TIBCO SmartSockets® messaging products.
- TIBCO ActiveMatrix BusinessWorks™: ActiveMatrix BusinessWorks is a scalable, extensible, and easy to use integration platform that allows you to develop integration projects. ActiveMatrix BusinessWorks includes a GUI for defining business processes and an engine that executes the process.
- TIBCO® Adapter software: TIBCO Runtime Agent is a prerequisite for TIBCO Adapter products. You will therefore find TIBCO Adapter product documentation useful.



## Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
<i>ENV_NAME</i> <i>TIBCO_HOME</i> <i>TRA_HOME</i>	<p>TIBCO products are installed into an installation environment. A product installed into an installation environment does not access components in other installation environments. Incompatible products and multiple instances of the same product must be installed into different installation environments.</p> <p>An installation environment consists of the following properties:</p> <ul style="list-style-type: none"> <li>• <b>Name</b> Identifies the installation environment. This name is referenced in documentation as <i>ENV_NAME</i>. On Microsoft Windows, the name is appended to the name of Windows services created by the installer and is a component of the path to the product shortcut in the Windows Start &gt; All Programs menu.</li> <li>• <b>Path</b> The folder into which the product is installed. This folder is referenced in documentation as <i>TIBCO_HOME</i>.</li> </ul> <p><i>TIBCO Runtime Agent</i> installs into a directory within a <i>TIBCO_HOME</i>. This directory is referenced in documentation as &lt;ProductAcronym&gt;_HOME. The default value of &lt;ProductAcronym&gt;_HOME depends on the operating system. For example on Windows systems, the default value is C:\tibco\&lt;ProductAcronym&gt;\&lt;ReleaseNumber&gt;.</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>
<b>bold code font</b>	<p>Bold code font is used in the following ways:</p> <ul style="list-style-type: none"> <li>• In procedures, to indicate what a user types. For example: Type <b>admin</b>.</li> <li>• In large code samples, to indicate the parts of the sample that are of particular interest.</li> <li>• In command syntax, to indicate the default parameter for a command. For example, if no parameter is specified, MyCommand is enabled: MyCommand [<b>enable</b>   disable]</li> </ul>

Table 1 General Typographical Conventions (Cont'd)




Convention	Use
<i>italic font</i>	<p>Italic font is used in the following ways:</p> <ul style="list-style-type: none"><li>• To indicate a document title. For example: See <i>TIBCO ActiveMatrix BusinessWorks Concepts</i>.</li><li>• To introduce new terms For example: A portal page may contain several portlets. <i>Portlets</i> are mini-applications that run in a portal.</li><li>• To indicate a variable in a command or code syntax that you must replace. For example: <code>MyCommand <i>PathName</i></code></li></ul>
Key combinations	<p>Key name separated by a plus sign indicate keys pressed simultaneously. For example: <code>Ctrl+C</code>.</p> <p>Key names separated by a comma and space indicate keys pressed one after the other. For example: <code>Esc, Ctrl+Q</code>.</p>
	<p>The note icon indicates information that is of special interest or importance, for example, an additional action required only in certain circumstances.</p>
	<p>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.</p>
	<p>The warning icon indicates the potential for a damaging situation, for example, data loss or corruption if certain steps are taken or not taken.</p>

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>

Table 2 Syntax Typographical Conventions (Cont'd)

Convention	Use
{ }	<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

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### 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

# Using the TIBCO Runtime Agent Authentication API

This chapter explains the need for TIBCO Runtime Agent Authentication API, and contains instructions for its use.

## Topics

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- [Feature Overview, page 2](#)
- [API Overview, page 3](#)
- [Getting Started with the API, page 4](#)
- [Common Aspects of the API, page 6](#)
- [Best Practices, page 7](#)

## Feature Overview

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This is an API that can be used to create custom scripts and applications. This API includes Javadocs, viewable in a web browser.

## API Overview

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This API can be used to create custom scripts and applications. Javadocs for this API are contained in the following directory:

`TRA_HOME/doc/auth/javadoc`



For explanations of the meaning of variables like *TRA\_HOME*, *TIBCO\_DOMAIN\_HOME*, *TIBCO\_TRA\_VERSION*, and so on, please refer to the table on [Typographical Conventions on page ix](#) of the Preface.

While most TIBCO Runtime Agent and TIBCO Runtime Agent (TRA) requirements are addressed by the capabilities available through Runtime Agent Console and other TRA utilities, this API allows you to provide programmatic access to the functionality available through Runtime Agent Console.

This API provides a framework for doing the following:

- User authentication
- Retrieve users
- Retrieve roles and role memberships

## Getting Started with the API

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This section provides information that will be useful to you as you begin to work with the API.

### Compiling Programs

In order to compile your scripts and applications, you will need to include the following jar files in your classpath:

- `TRA_HOME/lib/TIBCOAuthAPI.jar`

### Running Programs

In order to run your scripts and applications, your system must meet the requirements described in this section.



Note that an API program cannot be run remotely from the command-line. You must run it on a machine where this Authentication API is installed.

### Running Programs: Environment Variables Required

To run a program or application that uses this API, you must set the following environment variables:

`TRA_VERSION=TRA_VERSION`

`TRA_HOME=TRA_HOME`

`DOMAIN_NAME=Your-Domain-Name`

`DOMAIN_HOME=TIBCO_DOMAIN_HOME`

### Running Programs: JAR Files Required

You must also ensure that the following JAR files are on your classpath:

- TRA jar files from following directory:
  - `TRA_HOME/lib`
  - These files include `TIBCOAuthAPI.jar` and `TIBCOAuthAPIimpl.jar`
- HAWK Jar files from following directory:
  - `TIBCO_HOME/hawk/lib`



- RV jar files from following directory:
  - *TIBCO\_HOME/tibrv/TIBCO\_RV\_VERSION/lib*
- TPCL jar files from following directories:
  - *TIBCO\_HOME/tpcl/TIBCO\_TPCL\_VERSION/lib*
  - *TIBCO\_HOME/tpcl/TIBCO\_TPCL\_VERSION/jdbc*

## Running the Samples

A sample has been provided with compile and run scripts. This sample provides all the environment variables required to run this program. The sample is available in the following directory:

— *TRA\_HOME/sample/auth*

Please refer to the `readme.txt` in that directory for the instructions on compiling and running the sample.

## Using the API

For learning how to use this API, please refer to:

- Javadocs from the following directory  
*TRA\_HOME/doc/auth/javadoc*
- `SampleAuthAPIUsage.java` from a subdirectory within the following samples source directory:  
*TRA\_HOME/sample/auth/src*

## Common Aspects of the API

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For more details on the objects and classes referenced in the section ahead, refer to the Javadocs as described in the section [API Overview on page 3](#).

### Objects and Factory

Two main objects are User and Role. The factory classes UserFactory and RoleFactory provide methods to retrieve the User and Role objects respectively.

### AuthenticationSubject

An object of the AuthenticationSubject class represents an authenticated user, and contains such information as the user name, password, and whether or not the user is authenticated.

This is *not* used for validating the authentication for the username and password specified here. This is only used for such purposes as identifying the user or checking role memberships for a user. For information on checking authorization, refer to [AuthUtils on page 6](#).

### RoleMembershipConfig and RoleMembership

There are two major portions of the API: model and runtime. The model portion of the API deals with managing the configuration of the Object. The runtime portion of the API contains utilities you can use to compute something or take some action.

RoleMembershipConfig is the model component that provides details necessary for computing the membership of the role. RoleMembership is the runtime component that provides logic for computing the membership of a Role. The runtime portion of the API is generally useful only in the context of custom Role Membership Plug ins. You will not have the necessary context to run this runtime API in a command-line context.

### AuthUtils

The model objects such as User and Role are purely data objects with no behavior exposed. This utility class exposes the behavior for these objects. For example, it provides role membership, taking into account the membership inherited from child roles.

The single instance of this utility class is obtained by calling `instance()`.

# Best Practices

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## General Tips

The following sections provide some general tips for developers.

## Log Files

When a program written using these API does not behave as expected, make sure you check the *TIBCO\_DOMAIN\_HOME\TIBCO\_DOMAIN\_NAME\logs\Administrator.log* file. It may indicate what exceptions or errors have been encountered.



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