TIBCO Hawk®

Installation, Configuration, and Administration

Software Release 5.2.0
June 2015

Two-Second Advantage®

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Preface

TIBCO Hawk is a tool for monitoring and managing distributed applications and operating systems. The software is designed specifically for monitoring distributed systems, so there is no centralized console or frequent polling across the network. With this structure, TIBCO Hawk software is able to scale to multi-thousand node global networks without the use of hierarchical managers and has the flexibility to add or modify individual managed entities without the need to reconfigure or restart any other part of the system.

This software may be available on multiple operating systems. However, not all operating system platforms for a specific software version are released at the same time. Please see the Readme file for the availability of this software version on a specific operating system platform.

This manual covers the installation and configuration of the TIBCO Hawk on various platforms. It is intended for systems and network administrators who need to install TIBCO Hawk and use TIBCO Hawk WebConsole.

This manual assumes you are familiar with TIBCO Rendezvous or TIBCO DataGrid architecture and the concepts of system monitoring.

Topics

Changes from the Previous Release of this Guide

Updated the guide to reflect support for JRE 8.

Related Documentation

This section lists documentation resources you may find useful.

TIBCO Hawk Documentation

The following documents form the TIBCO Hawk documentation set:

- *TIBCO Hawk Concepts* This manual includes basic descriptions of TIBCO Hawk concepts.
- *TIBCO Hawk Installation, Configuration, and Administration* Read this book first. It contains step-by-step instructions for installing TIBCO Hawk software on various operating system platforms. It also describes how to configure the software for specific applications, once it is installed. An installation FAQ is included.
- *TIBCO Hawk Microagent Reference* A reference to the microagents and methods used by a TIBCO Hawk Agent for system and application monitoring.
- *TIBCO Hawk WebConsole User's Guide* This manual includes complete instructions for using TIBCO Hawk WebConsole.
- *TIBCO Hawk Programmer's Guide* All programmers should read this manual. It contains detailed descriptions of Application Management Interface (AMI), Application Programming Interface (API) concepts, and the TIBCO Hawk security framework and its classes. It also contains detailed descriptions of each class and method for the following APIs:

  — AMI API

  Java, C++ and C API

  — Console API

  Java API

  — Configuration Object API

  Java API

  Programmers should refer to the appropriate language reference sections for the AMI API details. The TIBCO Hawk Application Management Interface (AMI) exposes internal application methods to TIBCO Hawk.
- *TIBCO Hawk Plug-in Reference Guide* Contains details about the Enterprise Message Service, Messaging and JVM microagents methods that are used to administer and monitor the TIBCO Enterprise Message Service server.

- *TIBCO Hawk Plug-ins for TIBCO Administrator* Contains detailed descriptions of the TIBCO Hawk plug-ins accessed via TIBCO Administrator.
- *TIBCO Hawk HTTP Adapter User's Guide* Contains information about performing discovery, monitoring of agent status, monitoring of agent alerts, method invocation, method subscription, and many more activities on TIBCO Hawk and third-party products.
- *TIBCO Hawk Admin Agent Guide* Contains basic configuration details for TIBCO Hawk Admin Agent Runtime and complete instructions for using the web interface of TIBCO Enterprise Administrator for TIBCO Hawk.
- *TIBCO Hawk 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® Enterprise Administrator
  - *TIBCO Enterprise Administrator User's Guide*
  - *TIBCO Enterprise Administrator Installation Guide*
  - *TIBCO Enterprise Administrator Developer's Guide*
- TIBCO ActiveSpaces®
  - *TIBCO ActiveSpaces Developer's Guide*
  - *TIBCO ActiveSpaces Administration*
  - *TIBCO ActiveSpaces Installtion*
  - *TIBCO ActiveSpaces C Reference*
- TIBCO Rendezvous®
  - *TIBCO Rendezvous Concepts*
  - *TIBCO Rendezvous Administration*
  - *TIBCO Rendezvous Configuration Tools*
- TIBCO Enterprise Message Service™
  - *TIBCO Enterprise Message Service Installation*
  - *TIBCO Enterprise Message Service User's Guide*

Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
ENV_HOME *TIBCO_HOME* *HAWK_HOME* *CONFIG_FOLDER*	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. An installation environment consists of the following properties: • **Name** Identifies the installation environment. This name is referenced in documentation as *ENV_NAME*. 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 > All Programs menu. • **Path** The folder into which the product is installed. This folder is referenced in documentation as *TIBCO_HOME*. TIBCO Hawk installs into a directory within a *TIBCO_HOME*. This directory is referenced in documentation as *HAWK_HOME*. The default value of *HAWK_HOME* depends on the operating system. For example on Windows systems, the default value is `C:\tibco\hawk\5.2`. A TIBCO Hawk configuration folder stores configuration data generated by TIBCO Hawk. Configuration data can include sample scripts, session data, configured binaries, logs, and so on. This folder is referenced in documentation as *CONFIG_FOLDER*. For example, on Windows systems, the default value is `C:\ProgramData\tibco\cfgmgmt\hawk`.
`code font`	Code font identifies commands, code examples, filenames, pathnames, and output displayed in a command window. For example: Use `MyCommand` to start the foo process.

Table 1 General Typographical Conventions (Cont'd)

Convention	Use
`bold code font`	Bold code font is used in the following ways: • 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]
italic font	Italic font is used in the following ways: • To indicate a document title. For example: See *TIBCO BusinessWorks Concepts*. • To introduce new terms For example: A portal page may contain several portlets. *Portlets* 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` *pathname*
Key combinations	Key name separated by a plus sign indicate keys pressed simultaneously. For example: Ctrl+C. Key names separated by a comma and space indicate keys pressed one after the other. For example: Esc, Ctrl+Q.
	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.

Connecting with TIBCO Resources

How to Join TIBCOmmunity

TIBCOmmunity is an online destinaton for TIBCO customers, partners, and resident experts—a place to share and access the collective experience of the TIBCO community. TIBCOmmunity offers forums, blogs, and access to a variety of resources. To register, go to http://www.tibcommunity.com.

How to Access All 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, please 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 TIBCO Hawk Installation Overview

This chapter provides the details about TIBCO Hawk product installation, along with various requirements, different installation modes. Also, provides additional precautions you may have to ensure in order to get seamless functioning of TIBCO Hawk system.

Topics

Installer Overview

If this is the first TIBCO software product you are installing on the system, you can specify the installation directory where all TIBCO products will be installed. This directory is referred in this documentation as *TIBCO_HOME*. On Microsoft Windows platforms, the default *TIBCO_HOME* is C:\tibco. On UNIX/Linux, the default *TIBCO_HOME* directory is `/opt/tibco`.

Note that

- **`installation-path`** — The directory where TIBCO Hawk System components get installed and is referred in this documentation as *HAWK_HOME*. For example, the default *HAWK_HOME* path on Windows is `C:\tibco\hawk\`*<version>*, where on UNIX/Linux, it is `/opt/tibco/hawk/`*<version>*.
- **`configuration-path`** — The directory where TIBCO Hawk components get prepared with appropriate default configuration and kept ready for out-of-the-box execution. This folder is referred in this documentation as *CONFIG_FOLDER*. For example, the default *CONFIG_FOLDER* on Microsoft Windows is `C:\ProgramData\tibco\cfgmgmt\hawk`, whereas on UNIX/Linux, it is *TIBCO_HOME*`/tibco/cfgmgmt/hawk`.

  For Windows 7 and Window 8.x, we recommend you to configure *CONFIG_FOLDER* as some folder other than `C:\ProgramData` to avoid any access control issues later.

Installing TIBCO Hawk Over Previous Releases

TIBCO Hawk Installation enables TIBCO Hawk to be installed in multiple *TIBCO_HOME*. During installation, you can select the existing *TIBCO_HOME* or create a new *TIBCO_HOME*. If the existing *TIBCO_HOME* is selected, it may have other products installed including TIBCO Hawk. If there is any previous TIBCO Hawk installation in the *TIBCO_HOME*, the existing installation will:

- Replace, if the same version (major, minor) is installed.
- Upgrade to the latest version, if the patch version is latest.
- Add, in case of newer major or minor version.

The Universal Installer is responsible to create and setup directories under *HAWK_HOME*. All the files under *HAWK_HOME* should not be modified by any other component except the installer. An installation properties file that includes settings required for runtime is placed in the installation directory.

During the installation, the Universal Installer creates or updates the properties file `hawk_<version>_prodInfo.xml` in the *TIBCO_HOME*`\_installInfo` directory.

This file contains the settings that are used by TIBCO Hawk runtime modules. You do not need to uninstall previous releases of TIBCO Hawk in order to install the most recent version. TIBCO Universal Installer enables you to install multiple versions of TIBCO Hawk on the same machine.

If you try to install the most recent version of TIBCO Hawk in the same *TIBCO_HOME* that has older versions of TIBCO Hawk, Universal Installer lets you proceed ahead seamlessly. If you choose to install the most recent version of TIBCO Hawk in a new *TIBCO_HOME*, it helps you to create new *TIBCO_HOME*. For example, you can have TIBCO Hawk 4.9 and 5.2 co-exist in the same *TIBCO_HOME*.

If you try to re-install the most recent version of TIBCO Hawk in the same *TIBCO_HOME*, the installer displays a warning indicative of previous installation does exist and will be overwritten.

On Windows platforms, if there are TIBCO Hawk Windows services installed by the previous installation of TIBCO Hawk, they get replaced by new versions of such TIBCO Hawk services, by the Universal Installer without any warning.

Installation Prerequisites

If you plan to install in an existing installation environment, it is recommended to stop all the processes that are using Java from *TIBCO_HOME*.

Before you run TIBCO Universal Installer on your Windows or UNIX system, you must login as a user with appropriate permissions, and your system must meet hardware and software requirements as mentioned in the following sections.

Some software is required, and the rest is optional. Before you run the installer, make sure you are running on a supported platform. See the Readme file available at https://docs.tibco.com for information about the supported operating system platforms, versions, and about required patches.

Use the 32-bit installer for installing TIBCO Hawk only on the 32-bit systems. If you use the 32-bit installer to install TIBCO Hawk on the 64-bit systems, the system throws error when TIBCO Hawk components are started.

Microsoft Windows

Only user with Administrator privileges can install TIBCO Hawk components on Windows platform. If you intend to install the product on a network drive, ensure that the account used for installation has Administrator permission to access the network drive.

UNIX/Linux

Any type of user—regular (non-root) user and super-user (root)— can install TIBCO Hawk. It is recommended the same installer account to install all TIBCO products. A graphic environment such as CDE or X Windows is required to run the installer in GUI mode.

Hardware Requirements

TIBCO Hawk installation requires minimum of 512 MB system memory (RAM) and about 500 MB of free disk space. Please make sure you have adequate system memory and disk space before proceeding with TIBCO Hawk installation.

The Universal Installer requires disk space in the temporary directory before installation, and additional space in the temporary directory for running the installer. Please refer to the following table and ensure you have sufficient disk space available in the directory you want to use as the installation environment (*TIBCO_HOME*) directory.

Directory / Location	Disk Space Requirement
Temporary Directory before installation. For example, `c:\temp` or `/tmp`	Before you start the installation, you need this space to download installable archive file. For example, file with name `TIB_hawk_5.2.0_win_x86_64.zip` is the installable archive file. This file will need about **165 MB** of disk space.
Temporary Directory during installation. For example, `c:\temp\hawk510install` or `/tmp/hawk510install`	This is the directory where you will unzip the installable zip so that you can later execute the Universal Installer. This directory requires about **175 MB** of disk space. On Microsoft Windows, the default temporary directory location is `%SystemDrive%:\Documents and Settings\user_name\Local Settings\Temp`. If your system does not have sufficient free disk space in the default temporary directory, you can use the `is:tempdir` option when starting the installer to run the installer with a different temporary directory. For example: `TIBCOUniversalInstaller -is:tempdir \new_tmp` where `\new_tmp` has sufficient free disk space.
Installation Environment Directories	These directories are *HAWK_HOME* and *CONFIG_FOLDER*. Together they both need at least **360 MB** of disk space.

Software Requirements

Refer to the following table for software requirements for a well-functioning TIBCO Hawk system. TIBCO Hawk installation includes some of the components, although they may be optional. Refer to the Readme file for details about the supported versions of various third-party software components.

Table 2 Software Requirement

Software	Optional?	Bundled with Installer?	Comments
TIBCO DataGrid	Yes	Yes, it is supplied with the installer.	TIBCO DataGrid is a peer-to-peer distributed in-memory data grid, a form of virtual shared memory that is replicated on distributed devices and applications. If you have already installed TIBCO DataGrid on the machine, you can clear the TIBCO DataGrid Runtime option in the Hawk Component during custom installation.
TIBCO Rendezvous	Yes	No, it is not supplied with TIBCO Hawk installer and needs a separate installation.	The TIBCO Rendezvous is the default transport between the Hawk Micro Agent and Hawk Agent and also between the Hawk Agent and Hawk Console applications. If you have already installed TIBCO Rendezvous software on a network-wide basis and you want to use it as a transport for TIBCO Hawk, you do not need additional TIBCO Rendezvous licenses unless you are running TIBCO Rendezvous Routing Daemon (RVRD) processes on a particular machine. In that case, you need a valid RVRD license in the `tibrv.tkt` file for that machine. TIBCO Rendezvous is used for inter-process communication even if TIBCO Enterprise Message Service (EMS) is chosen as the primary transport.
TIBCO Enterprise Message Service	Yes	No, it is not supplied with TIBCO Hawk installer and needs a separate installation.	If you plan to use TIBCO Enterprise Message Service as the primary messaging transport, at least one EMS server must be installed on the network and you must select to install the TIBCO EMS Java client during the TIBCO EMS installation on every machine running TIBCO Hawk Agent and TIBCO Hawk Console applications. **Note:** You have to manually copy the JAR files for the EMS client from *EMS_HOME* to each machine running Hawk Agent or Hawk Console applications when you are using TIBCO Enterprise Message Service version 6.3 or version 7.0 (which do not have client installation profile), and you do not want to install complete TIBCO Enterprise Message Service on each machine running Hawk Agent or Hawk Console applications. See step 5 in Web Server for Hawk WebConsole on page 47.

Table 2 Software Requirement

Software	Optional?	Bundled with Installer?	Comments
TIBCO Administrator	Yes	No, it is not supplied and needs a separate installation	TIBCO Administrator is a browser-based GUI for monitoring and managing deployed processes in the domain. The domain is a collection of machines and software components used for business process integration. In terms of physical process, every domain has an Administration Server that provides a data store for all the domain resource information as well as project data. The Administration Server consists of a repository server and two servlets running on Tomcat application server. The servlets are built using Hawk Console API to interact with TIBCO Runtime Agents running on every machine in the domain. There are additional Hawk plugins for Administrator, that you may need to copy from Hawk installation to Administrator installation before you use them from within Administrator UI.
TIBCO Runtime Agent (TRA)	Yes	No, it is not supplied and needs a separate installation	If you plan to use any Hawk plug-ins, TIBCO Administrator and TIBCO Runtime Agent are required. TIBCO Runtime Agent is a Hawk Agent with a special Hawk MicroAgent is added to deploy, monitor, and manage TIBCO components like TIBCO BusinessWorks, TIBCO BusinessEvents etc.
Java Runtime Environment (JRE)	No	Yes, it is supplied within Hawk Installation	TIBCO Hawk bundles Java Runtime Environment (JRE) 1.8.0 with available patches, on the target machine. However user can choose NOT TO OPT for TIBCO Hawk supplied version of JRE and can use their version of JRE (new or previously installed on the same machine). In that case, users will need to edit / modify required ".tra" and ".cfg" file to reflect the accurate JRE location.
Tomcat Web Server	No	Yes, it is supplied within Hawk Installation	TIBCO Hawk bundles Tomcat 7.x. It is not a pre-requisite as during the installation process, it is installed on your machine. The Tomcat web server is necessary to host TIBCO Hawk WebConsole web application.
TIBCO Enterprise Administrator SDK	No	No, it is not supplied and needs a separate installation.	TIBCO Enterprise Administrator Agent for Hawk requires TIBCO Enterprise Administrator Server to be running. You must download and install TIBCO Enterprise Administrator SDK and start the server before running the Admin Agent. Your Web Browser must meet the requirements to run the TIBCO Enterprise Administrator server UI. Refer to the Readme file of TIBCO Enterprise Administrator for details

Preparing for Installation

Before you start with installation, make sure your system meets all prerequisites, it is recommended that you decide on the installation environment name and folder, and download and extract the installation package.

- *TIBCO_HOME* is the top-level installation directory for TIBCO products.
- *TIBCO_HOME* is referred to as the installation environment.

Installation environments isolate product installations. A product installed into an installation environment does not automatically access components in other environments.

An installation environment consists of a name and a folder.

- The name identifies the environment, is appended to the name of Windows services created by the installer, and is a component of the path to the product in the Windows **Start** > **All Programs** menu.
- The folder contains the installed software. When you install you can choose a new installation environment or an existing installation environment.

If a previous installation of a TIBCO product did not use the TIBCO Universal Installer, the TIBCO Universal Installer does not detect the folder those older products use as an installation environment folder. If you wish to use the existing location as the installation folder, create a new installation environment and choose the folder where the other products exist.

If any errors appear during installation, consult Appendix B, Troubleshooting and Frequently Asked Questions, page 117 for possible solutions.

Installation Environment

An installation environment isolates product installations. A product installed into an installation environment does not access components in other installation environments.

An installation environment is the top level installation directory for TIBCO products. An installation environment consists of the following properties:

- **Directory** - Identifies the directory into which the product is installed.
- **Name** - Identifies the name of the folder where the product is installed.

Understanding Installation Profiles

Different installation components are associated with different functions. Using the installer, you can select the components during the installation.

During custom installation, you can choose to install the following Hawk components.

Table 3 Installation Components

Component	Description
TIBCO Hawk Core: Agent, EventService, WebConsole, Display, SDK, Examples	Installs TIBCO Hawk Agent, TIBCO Hawk Event Service, TIBCO Hawk WebConsole, TIBCO Hawk Display, Hawk API Development kit, and Examples. Hawk development tools to build Hawk MicroAgent, AMI, or the console application.
TIBCO DataGrid: Runtime	Installs only TIBCO DataGrid runtime components. Do not select this check box if you have already installed TIBCO DataGrid on the machine.
TIBCO Hawk WebConsole: WebConsole Application	Installs TIBCO Hawk WebConsole for interacting with Hawk Agents.
TIBCO Hawk WebConsole: WebContainer - Apache Tomcat	Installs Apache Tomcat web server to host Hawk WebConsole (and any other Console-API based web applications).
TIBCO Enterprise Administrator Enablers: Admin Agent	Installs Admin Agent, which is used to monitor and manage Hawk agents using the TIBCO Enterprise Administrator server UI. Refer to *TIBCO Hawk Admin Agent User's Guide* for configuration details and how to use the Admin Agent to monitor and manage the Hawk agents. If you are using an older version of Hawk earlier than 5.2, upgrade to the latest version. **Note:** For successful installation, the Admin Agent component should be installed only in the existing TIBCO Hawk 5.2 installation environment, and not in a new installation environment. **Caution:** The Admin Agent interacts with the TIBCO Enterprise Administrator server that is not shipped with this product. Ensure that you install TIBCO Enterprise Administrator separately.

The installation components are grouped into different installation profiles. One installation profile is associated with one or more installation components. When a profile is selected, the components that default to the selected profile are installed. By default, the **TIBCO Hawk 5.2 Components** installation profile is selected, therefore, all the Hawk components are installed. However, the installer allows you to customize the installation by explicitly selecting the components that you want to install.

The following installation profiles are available for Hawk:

Table 4 Installation Profiles

Profile	Description
TIBCO Hawk 5.2 Components	When this profile is selected, all the TIBCO Hawk components are installed.
TIBCO Hawk TEA Enablers	Select this profile if you want the TIBCO Hawk to be exposed to the TIBCO® Enterprise Administrator. The enabler provides a TIBCO Enterprise Administrator Agent Runtime.

Decide the installation mode that you plan to use and then refer to the following sections. The examples shown in those sections use the 32-bit installation package on Microsoft Windows.

Installation Modes

TIBCO Universal Installer provides the following three modes of installation for TIBCO Hawk. When installing TIBCO Hawk you also have the option to install the Admin Agent, which exposes TIBCO Hawk to TIBCO Enterprise Administrator, along with the installation of TIBCO Hawk Components.

GUI Mode

GUI mode performs the installation in an interactive graphical interface. The installer prompts you for values specific to your environment.

Installing the Hawk Components and Hawk Admin Agent

1. Open the physical media or download the package.
2. Extract the contents of the package to a temporary directory.
3. Navigate to the temporary directory.
4. Run TIBCOUniversalInstaller. You can do so in one of the following ways:
   a. Double-click the installer icon.
   b. On the command prompt, provide the absolute path of the installer file without specifying any options. The installer defaults to GUI mode.
5. Click the **Next** button on the **Welcome** dialog.
6. Read through the license text when the **License Agreement** dialog appears. Select the "**I accept the terms of the license agreement.**" radio button and click the **Next** button.

   The **TIBCO Installation Home** dialog is displayed.
7. In the TIBCO Installation Home dialog, select one of the following options to specify the installation environment. See Installation Environment on page 8 for more details.

- **Create a new TIBCO_HOME** to install the product into a new installation environment, specify the following properties:
  - **Directory** - The directory into which the product is installed. Type a path or click Browse to specify the path or accept the default location.
  - **Name** – The name is appended to the name of Windows services created by the installer and is a component of the path to the product in the Windows **Start** > **All Programs** menu.

- **Use an existing TIBCO_HOME** to install the product into an existing installation environment, select the environment from the drop-down list.
  - The **Name** and **Directory** fields are populated automatically and cannot be edited.

8. Click the **Next** button. The **Installation Profile Selection** dialog displays.
9. Select the **TIBCO Hawk 5.2 Components** installation profile to install all the Hawk components. Or select the **Customize Installation** checkbox to explicitly select the Hawk installation components.

   Optionally, hold your Ctrl key down and click **TIBCO Hawk Admin Agent** to select it too. If you choose not to install the Admin Agent at this time you can always install it at a later time by re-running this installer. Click **Next**. See the Understanding Installation Profiles on page 9 for more details.
10. Select whether you want to use the JVM bundled with the installer or you want to use a previously installed JVM on your machine. If you opt for the latter, browse to the Java location on your machine using the **Browse** button, then click **Next**.
11. Verify the list of product features selected for install in the **Pre-Install Summary** dialog and click **Install**.
12. Review the information listed in the **Post-Install Summary** dialog and click **Finish**.

Installing the Admin Agent after Installing the TIBCO Hawk Components

1. Navigate to the temporary directory where the installation package was extracted and re-run TIBCOUniversalInstaller. You can do so in one of the following ways:
   a. Double-click the installer icon.
   b. On the command prompt, provide the absolute path of the installer file without specifying any options. The installer defaults to GUI mode.
2. Click the **Next** button on the **Welcome** dialog.
3. Read through the license text when the **License Agreement** dialog appears. Select the "**I accept the terms of the license agreement.**" radio button and click the **Next** button.
4. In the TIBCO Installation Home dialog, click the **Use an existing TIBCO_HOME** option and select the existing installation environment where Hawk is installed and click **Next**.

5. Select the **TIBCO Hawk Admin Agent** installation profile to install the TIBCO Enterprise Administrator Agent Runtime component. Click **Next**. See the Understanding Installation Profiles on page 9 for more details.
6. Select whether you want to use the JVM bundled with the installer or you want to use a previously installed JVM on your machine. If you opt for the latter, browse to the Java location on your machine using the **Browse** button, then click **Next**.
7. Verify the list of product features selected for install in the **Pre-Install Summary** dialog and click the **Install**.
8. Review the information listed in the **Post-Install Summary** dialog and click **Finish**.

Console Mode

Console mode allows you to install the software from a command window or terminal emulator. The installer prompts you for values.

To install this product in console mode:

1. Open the physical media or download the package.
2. Extract the contents of the package to a temporary directory.
3. Using a console window, navigate to the temporary directory.
4. To install from a Microsoft Windows command window, type:

```
TIBCOUniversalInstaller -console
```

   To install from a UNIX terminal window, type:

```
TIBCOUniversalInstaller-<platform>.bin -is:javaconsole -console
```

5. Complete the installation by responding to the console window prompts

   The installation process is the similar to the installation in GUI Mode on page 11.

Silent Mode

In silent mode, the Universal Installer does not prompt for any inputs during installation. Instead, the inputs are read from a configuration file that can be provided as a command-line parameter. If no value is specified, the installer uses the default `TIBCOUniversalInstaller.silent` file.

The TIBCOUniversalInstaller.silent file is packaged in the directory that contains the Universal Installer. Edit the file with information for your environment before launching the silent installation. The file includes comments that describe the installation properties you can set.

While you can use the TIBCOUniversalInstaller.silent file, it is recommended to copy the file to a different name and use that file for the silent install. If errors occur during installation, they will be listed in the installation log file located in the User_Home/.TIBCO directory.

Installing the Hawk Components and Admin Agent

1. Open the physical media or download the package.
2. Extract the contents of the package to a temporary directory.
3. Using a console window, navigate to the temporary directory.
4. Make a copy of the TIBCOUniversalInstaller_hawk_5.2.0.silent file and rename the original file.
5. Using a text editor, open the copied file and update the install location, ENV_NAME, and features to install as follows:
   a. Update the install location. Install TIBCO Hawk in the same directory where <Family> is installed. For example, update the directory as follows:

```
<entry key="installationRoot">C:\tibco</entry>
```

   b. Update ENV_NAME. TIBCO Hawk must use the same ENV_NAME that <Family> uses.

      For example, update ENV_NAME as follows:

```
<entry key="createNewEnvironment">false</entry>
<entry key="environmentName">TIBCO_HAWK_HOME</entry>
```

   c. Update features to install. Set the Hawk component features that you want to install to true and the Admin Agent feature to false. See Understanding Installation Profiles on page 9 for more details.

      The following elements can be set to true or false in the .silent file for installing your choice of components, to simulate the TIBCO Hawk custom installation.

```
<entry key="feature_Agent, EventService, Display, SDK,
Examples_hawk">true</entry>
<entry key="feature_Runtime_hawk">true</entry>
<entry key="feature_WebConsole Application_hawk">true</entry>
<entry key="feature_WebContainer -Apache Tomcat_hawk">true</entry>
```

   d. If you would like to install the TIBCO Hawk Admin Agent at this time, set the following property to true:

```
<entry key="feature_Admin Agent Runtime_hawk">true</entry>
```

If you choose not to install the Admin Agent at this time, set the above property to false. You can always install the Admin Agent at a later time by setting the property to true and rerunning the installation.

6. Run the following command to start the installation:

   — On Windows:

```
TIBCOUniversalInstaller.cmd -silent -V
responseFile="TIBCOUniversalInstaller_hawk_5.2.0.silent"
```

   — On UNIX/Linux:

```
TIBCOUniversalInstaller.bin -silent -V responseFile="
TIBCOUniversalInstaller_hawk_5.2.0.silent "
```

Provide a complete (absolute) path of `TIBCOUniversalInstaller_hawk_5.2.0.silent` to execute Universal Installer from some other folder.

A line similar to the following is written to the installer log file when installation completes:

```
... Install, com.tibco.installer.util.TIBCOInstaller, dbg.Debug,
Executing Event:::OnEndInstall
```

Installing Admin Agent After Installing the Hawk Components

1. Edit the same `.silent` file which was used for Hawk components installation. See Installing the Hawk Components and Admin Agent on page 14.
2. Using a text editor, open the copied file and update the install location, `ENV_NAME`, and features to install as follows:
   a. Update `ENV_NAME`. Admin Agent must use the same `ENV_NAME` that TIBCO Hawk 5.2 uses.

      For example, update `ENV_NAME` as follows:

```
<entry key="createNewEnvironment">false</entry>
<entry key="environmentName">TIBCO-HAWK_HOME</entry>
```

   b. Update features to install. Set the following feature to `true` to install the Admin Agent component. See Understanding Installation Profiles on page 9 for more details.

```
<entry key="feature_Admin Agent Runtime_hawk">true</entry>
```

3. Run the following command to start the installation:

   — On Windows:

```
TIBCOUniversalInstaller.cmd -silent -V
responseFile="TIBCOUniversalInstaller_hawk_5.2.0.silent"
```

   — On UNIX/Linux:

```
TIBCOUniversalInstaller.bin -silent -V responseFile="
TIBCOUniversalInstaller_hawk_5.2.0_silent "
```

Provide a complete (absolute) path of `TIBCOUniversalInstaller_hawk_5.2.0.silent` to execute Universal Installer from some other folder.

A line similar to the following is written to the installer log file when installation completes:

```
... Install, com.tibco.installer.util.TIBCOInstaller, dbg.Debug,
Executing Event:::OnEndInstall
```

Post installation Tasks

Verify the Installation

To verify the installation, ensure that all directories and files have been added correctly. For details, see TIBCO Hawk Directory Structure on page 246.

External JRE

For JVM microagents: If you have specified external JRE when installing TIBCO Hawk, then `tools.jar` in the `.hma` file must point to a JDK installation location.

If you plan to use an external JRE than the one supplied with TIBCO Hawk 5.2.0, please make sure that the correct values are set for `JVM_LIB_PATH`, `JVM_LIB_DIR`, `JVM_LIB_SERVER_DIR`, `JAVA_HOME`, `JRE_HOME`, `JRE_ROOT` in the `.cfg` and `.tra` files in *CONFIG_FOLDER*\bin.

Setting Permissions for Executing HMA on UNIX/Linux

TIBCO Hawk MicroAgent (HMA) process must execute under “root” privileges, on UNIX/Linux platforms.

This process internally gathers various system level information through different system artifacts such as, files, folders, scripts and so on. Access failure to such system-guarded items results in incorrect results of some of the microagent methods.

If the installation is done using root user, then the installation process, accordingly creates “`setuid`” permissions with root ownership for the TIBCO HMA executable.

If the installation is done using a non-root user, then after installation is complete, the root user must change the ownership of the following files to root and set the setuid permission as follows:

```
chown root tibhawkhma,
chown root starthma.sh
chmod u+s tibhawkhma
chmow u+s starthma.sh
```

Then, a normal user with executable permissions will be able to execute HMA with effective "root" permissions.

Uninstallation Procedure

This section describes how to uninstall this product in the GUI mode and the Console mode.

The uninstaller removes all files that were installed as a part of TIBCO Hawk installation, even if those files were modified by the user or the application. So please make sure you have a backup of user-modified files before proceeding with the uninstallation.

Installing any TIBCO Hawk Adapter product creates the *HAWK_HOME*/adapters folder by default. Uninstallation of TIBCO Hawk does not remove the adapter folder. However, if you remove that folder manually, the adapters' uninstaller and the entire installation become non-functional.

GUI Mode

To uninstall this product using Universal Installer GUI screens:

1. Shut down all running TIBCO Hawk applications.
2. Navigate to *TIBCO_HOME*`/tools/universal_installer` and run TIBCOUniversalInstaller.
3. In the TIBCO Installation Manager screen, perform the following steps:
   - Select the **Uninstall Products** from **Selected TIBCO Home Location** radio button.
   - Select the *TIBCO_HOME* location from the **TIBCO Home Location** drop-down list.
   - The **Welcome** dialog appears. Click the **Next** button.
   - Choose an uninstallation option. The wizard provides two uninstallation options:

     Custom Uninstall - You can select the products to be removed.

     Typical Uninstall - The universal uninstaller removes all the products in this *TIBCO_HOME*.
4. Click the **Next** button. If you selected the **Custom Uninstall** (Select The Products To Be Removed) radio button, select the check boxes for products to uninstall, and then click the **Uninstall** button.
5. Review the **Pre-Uninstall Summary** and click the **Uninstall** button to start the uninstallation process.

6. Review the **Post-Uninstall Summary** and click the **Finish** button to exit the uninstall wizard.

Console Mode

To uninstall this product in Console mode, complete the following steps:

1. Using a command window, navigate to the *TIBCO_HOME*`/tools/universal_installer` directory.
2. Type the following command at the command prompt:

   ```
   TIBCOUniversalInstaller.exe  -console
   ```

3. Complete the uninstallation by responding to the console window prompts.

Getting Started with TIBCO Hawk (Quick Start)

After successful installation of TIBCO Hawk, follow these steps:

1. Open *TIBCO_HOME* and ensure that the following folders exist under *TIBCO_HOME*:
   - *TIBCO_HOME*/as
   - *TIBCO_HOME*/hawk/5.2
   - *TIBCO_HOME*/tibcojre (OR *TIBCO_HOME*/tibcojre64 - depending on 32bit or 64bit system)

On Windows:

2. Start the following TIBCO Hawk components:
   a. Start Hawk Agent using one of the following methods:
   - Click **Start** > **All Programs** > **TIBCO** > *HAWK_HOME* > **TIBCO Hawk** <*version*> > **Start Hawk Agent**.
   - Double-click tibhawkagent from *CONFIG_FOLDER*\bin.

   b. Start Hawk Microagent using one of the following methods:
   - Click **Start** > **All Programs** > **TIBCO** > *HAWK_HOME* > **TIBCO Hawk** <*version*> > **Start Hawk Microagent**.
   - Double-click tibhawkhma from *CONFIG_FOLDER*\bin.

     On UNIX, execute starthma. The starthma must be run as root and must not use setuid.

   c. Start Hawk Event Service (if needed) using one of the following methods:
   - Click **Start** > **All Programs** > **TIBCO** > *HAWK_HOME* > **TIBCO Hawk** <*version*> > **Start Hawk Event**.
   - Start Hawk Event by double clicking tibhawkevent from *CONFIG_FOLDER*\bin.

3. To start TIBCO Hawk WebConsole, follow these steps:
   a. Browse to the *HAWK_HOME*\webconsole folder and double-click tibhawkh2db.exe to start the database.
   b. In the same folder, double-click startwebconsole.bat on Windows (startwebconsole.sh on non-Windows platforms) to start Hawk WebConsole.
   c. After you start the Hawk WebConsole in your browser's address box, enter a URL of the following format:

`<address>:<port_number>/hawkwebconsole`

where the default <*port_number*> is 8080.

For example, http://localhost:8080/hawkwebconsole

In the login window, enter a valid username and password. The default credentials are:

- Username: **`admin`**

- Password: **`admin`**

On UNIX/Linux:

1. Start the following TIBCO Hawk components:
   a. Start Hawk Agent by executing tibhawkagent from *CONFIG_FOLDER*`/bin`.
   b. Start Hawk Microagent by executing `starthma`. The `starthma` must be run as root.
   c. Start Hawk Event Service (if needed) by executing `tibhawkevent` from *CONFIG_FOLDER*`/bin`.
2. Start TIBCO Hawk WebConsole as follows:
   a. Open the command prompt and go to the *HAWK_HOME*`\webconsole` folder.
   b. Run the following executables:
   — `tibhawkh2db` to start the database
   — `startwebconsole.sh` to start the Webconsole
   c. After you start the Hawk WebConsole in your browser's address box, enter a URL of the following format:

      `_address>/<`*port_number*`>/hawkwebconsole`

      where the default <*port_number*> is 8080.

      For example, http://10.97.123.83:8080/hawkwebconsole

      In the login window, enter a valid username and password. The default credentials are:

      - Username: **`admin`**

      - Password: **`admin`**

For HP-UX, HP-IA, and Solaris/SPARC (64-bit only)—Make sure that *HAWK_HOME*`/webconsole/startwebconsole.sh` has the following entries:

- `JAVA_OPTS=-d64`
- `export JAVA_OPTS`

Chapter 2 Configuring TIBCO Hawk Components

This chapter provides the details about various TIBCO Hawk components, along with ways to configure each of them in greater details. The various components within TIBCO Hawk installation are:

- Hawk Agent
- Hawk WebConsole
- HMA (native Hawk MicroAgent)
- Hawk Display (Deprecated but still supported in Hawk 5.x)
- Hawk Event Service

There are a few configuration items that are common for all TIBCO Hawk components and are explained in the following sections.

Topics

Configuring Transport Mode

Three transport modes are available to be configured as a means of communication between Hawk Agent and HMA, and Hawk Agent and Hawk WebConsole, and they are:

- TIBCO DataGrid (distributed as a part of Hawk installation)
- TIBCO Rendezvous (RV)
- TIBCO Enterprise Message Service (EMS)

At least one transport mode should be configured in the configuration files of Hawk Agent, Hawk MicroAgent, Hawk Event, Hawk Display, and Hawk WebConsole to enable message or event communication among various Hawk components.

TIBCO Hawk 5.2 installation has TIBCO Rendezvous configured as the default mode of message and event transport between Hawk Agent and HMA, as well as between Hawk Agent and Hawk WebConsole.

If either TIBCO DataGrid or TIBCO Rendezvous is chosen as a transport between the Hawk Agent and the WebConsole, the same is used a transport between the Hawk Agent and the HMA or other AMI based applications. You cannot configure it to use a different transport. However, if you choose to use TIBCO EMS as the transport between the Hawk Agent and the WebConsole, you can only use TIBCO Rendezvous as the transport between the Hawk Agent and the HMA or other AMI based applications.

The above combinations can be configured using various configuration files, as described in next few sections of this chapter.

TIBCO Rendezvous and TIBCO EMS are two independent products that need to be installed separately. Additional configurations need to be performed manually based on whether they are installed before or after installing TIBCO Hawk 5.2, and whether any of them share the same *TIBCO_HOME* installation folder.

A Single TIBCO_HOME Location for Various TIBCO Products

If you are using or planning to use a single *TIBCO_HOME* for all TIBCO Rendezvous, TIBCO EMS, and TIBCO Hawk components, read this section. Otherwise, you might skip to the section Different TIBCO_HOME Locations for Various TIBCO Products, page 26.

Using pre-installed and pre-configured existing transports

You use an existing transport (TIBCO Rendezvous or TIBCO EMS) either from a previous installation of TIBCO Hawk 4.x or independent installations of these TIBCO products in the same *TIBCO_HOME* where Hawk 5.2 is installed. Update all the TRA configuration files (for example, `tibhawkagent.tra`), script files (such as, startwebconsole and starthma), Hawk WebConsole configuration files with the correct locations of *EMS_HOME* and *RV_HOME* and the execution environment.

Setup all the required libraries and their paths during the post-install configuration step of the TIBCO Hawk 5.2 installation.

If you are not using EMS as transport, then it is recommended that you remove the *EMS_HOME* entries from `startwebconsole.bat` and `setenv.bat` (the `.bat` file on Windows, and the `.sh` file on UNIX/Linux) files, to avoid any issues with Hawk WebConsole start.

Installing TIBCO Rendezvous or TIBCO EMS transports after installing TIBCO Hawk 5.2

If you install TIBCO Rendezvous or TIBCO Enterprise Message Service in the same *TIBCO_HOME* after TIBCO Hawk 5.2, ensure the following to set the correct runtime environment for the TIBCO Hawk components.

- Edit and modify TRA configuration files (all the files with the extension ".tra" in *CONFIG_FOLDER*/bin) to set the correct installation location of TIBCO Rendezvous and TIBCO Enterprise Message Service. That is, set the correct values for `tibco.env.EMS_HOME` and `tibco.env.RV_HOME` environment variables in all the TRA configuration files.

  On Unix or Linux, edit and modify the `starthma.sh` file with the correct *RV_HOME* location if TIBCO Rendezvous is installed after TIBCO Hawk 5.2.

- To configure Hawk WebConsole runtime environment, assuming TIBCO Hawk 5.2 is installed with the default supplied Tomcat web server, copy the Java libraries from respective locations to the *HAWK_HOME*`/webconsole/tomcat/lib` folder.

  Copy the following Java libraries for TIBCO Rendezvous as transport:

  — *RV_HOME*`/lib/tibrvj.jar`

Copy the following Java libraries for TIBCO EMS as transport:

— *EMS_HOME*/lib/tibrvjms.jar

— *EMS_HOME*/lib/tibjms.jar

— *EMS_HOME*/lib/tibcrypt.jar

— *EMS_HOME*/lib/jms.jar (whenever EMS version is below 8.0) or *EMS_HOME*/lib/jms-2.0.jar (in case of EMS 8.x)

- To configure Hawk WebConsole runtime environment, assuming TIBCO Hawk 5.2 is installed with default supplied Tomcat web server, edit and modify *HAWK_HOME*/webconsole/startwebconsole.bat and *HAWK_HOME*/webconsole/tomcat/bin/setenv.bat (.bat file on Windows, and .sh on Unix/Linux) to set RV_HOME and EMS_HOME correctly.

For TIBCO Hawk WebConsole, if you are using EMS 8.0 and it is installed after installing TIBCO Hawk 5.2.0, update the JMS classpath in the setenv.bat file. The setenv.bat file is located at *HAWK_HOME*/webconsole/tomcat/bin. In the setenv.bat file, under the heading "Set the Classpath", update the classpath %EMS_HOME%/lib/jms.jar to %EMS_HOME%/lib/jms-2.0.jar.

If you are not using EMS as transport, then it is recommended that you remove the *EMS_HOME* entries from startwebconsole.bat and setenv.bat (the .bat file on Windows, and the .sh file on UNIX/Linux) files, to avoid any issues with Hawk WebConsole start.

If you want to use any web server other than Tomcat, you need to copy some libraries (JAR/WAR) into locations specific to the web server. For details, see Web Server for Hawk WebConsole on page 47.

Different TIBCO_HOME Locations for Various TIBCO Products

If you are using or planning on using a different *TIBCO_HOME* for all TIBCO Rendezvous, TIBCO Enterprise Message Service, and TIBCO Hawk components, read this section. Otherwise, skip to the next section.

Since *TIBCO_HOME* for Hawk 5.2 is different from that of TIBCO Rendezvous and TIBCO Enterprise Message Service, ensure that appropriate installation locations are updated as follows:

- Edit and modify the TRA configuration files (all the files with extension ".tra" in *CONFIG_FOLDER*/bin) to set the correct installation location of TIBCO Rendezvous and TIBCO Enterprise Message Service. That is, set the correct values for tibco.env.EMS_HOME and tibco.env.RV_HOME environment variables in all the TRA configuration files.

On Unix/Linux, if TIBCO Rendezvous is installed at different *TIBCO_HOME*, then edit and modify the `starthma.sh` file with the correct *RV_HOME* location.

- To configure Hawk WebConsole runtime environment, assuming TIBCO Hawk 5.2 is installed with default supplied Tomcat web server, copy the Java libraries from respective locations to the *HAWK_HOME*`/webconsole/tomcat/lib` folder.

  Copy the following Java libraries for TIBCO Rendezvous as transport:

  — *RV_HOME*`/lib/tibrvj.jar`

  Copy the following Java libraries for TIBCO EMS as transport:

  — *EMS_HOME*`/lib/tibrvjms.jar`

  — *EMS_HOME*`/lib/tibjms.jar`

  — *EMS_HOME*`/lib/tibcrypt.jar`

  — *EMS_HOME*`/lib/jms.jar` (whenever EMS version is below 8.0) or *EMS_HOME*`/lib/jms-2.0.jar` (in case of EMS 8.x)

- To configure Hawk WebConsole runtime environment, assuming TIBCO Hawk 5.2 is installed with default supplied Tomcat web server, edit and modify *HAWK_HOME*`/webconsole/startwebconsole.bat` and *HAWK_HOME*`/webconsole/tomcat/bin/setenv.bat` (the `.bat` file on Windows, and the `.sh` file on UNIX/Linux) to set *RV_HOME* and *EMS_HOME* correctly.

For TIBCO Hawk WebConsole, if you are using EMS 8.0 and it is installed after installing TIBCO Hawk 5.2.0, update the JMS classpath in the `setenv.bat` file. The `setenv.bat` file is located at *HAWK_HOME*`/webconsole/tomcat/bin`. In the `setenv.bat` file, under the heading "Set the Classpath", update the classpath `%EMS_HOME%/lib/jms.jar` to `%EMS_HOME%/lib/jms-2.0.jar`.

If you are not using EMS as transport, then it is recommended that you remove the *EMS_HOME* entries from `startwebconsole.bat` and `setenv.bat` (the `.bat` file on Windows, and the `.sh` file on UNIX/Linux) files, to avoid any issues with Hawk WebConsole start.

If you want to use any web server other than Tomcat, copy some libraries (JAR/WAR) to locations specific to the web server. For details, see Web Server for Hawk WebConsole on page 47.

TIBCO Rendezvous Transport

The TIBCO Rendezvous software is the default transport between the Hawk Micro Agent and Hawk Agent and also between the Hawk Agent and Hawk Console applications.

Configure the `-rvd_session` parameter in the configuration files to re-enable the TIBCO Rendezvous as transport back from TIBCO EMS or TIBCO DataGrid.

Comment this option, or let it be commented in the configuration file, if you are using TIBCO EMS or TIBCO DataGrid as the primary transport.

TIBCO Hawk connects to the TIBCO Rendezvous daemon by creating a session. In the configuration files, ensure that the `-as_session` and `-ems_transport` parameters are commented out, and then configure the `-rvd_session` parameter. TIBCO Rendezvous transport creation calls accept three parameters that govern the behavior of the transport: `service`, `network` and `daemon`.

`-rvd_session` <*service*> <*network*> <*daaemon*>

where,

- **service** instructs the Rendezvous daemon to use this service whenever it conveys messages on this transport. You can specify the port number as the service to be used, for example, "`7474`".
- **network** instructs the Rendezvous daemon to use a particular network for all communications involving this transport. The network parameter consists of up to three parts, separated by semicolons: network, multicast groups, and send address.
- **daemon** instructs the transport creation function about how and where to find the Rendezvous daemon and establish communication. For remote daemons, specify two parts (introducing the remote host name as the first part), for example, `tcp:7474`:
  - — Remote host name
  - — Port number

The default value in the configuration file for the Rendezvous session is

```
-rvd_session 7474 ; tcp:7474
```

For more details on TIBCO Rendezvous, refer to the TIBCO Rendezvous documentation.

TIBCO DataGrid Transport

Configure the `-as_session` parameter in the configuration files to enable the TIBCO DataGrid as transport.

Comment this option, or let it be commented in the configuration file, if you are using TIBCO EMS or TIBCO Rendezvous as the primary transport.

Because the TIBCO Hawk software uses the functionality of the TIBCO DataGrid system, it must connect to a TIBCO DataGrid by creating a session. In the configuration files, ensure that the `-rvd_session` and `-ems_transport` parameters are commented out, and then configure the `-as_session` parameter.

`-as_session` *<listen url> <discover url>*

where,

- **listen url** specifies the interface and the TCP port that the process uses to listen for incoming connections from new members to the metaspace, and specified in the form of a URL. To use a listen URL, use a string of the form:

  ```
  tcp://[interface[:port]]
  ```

  If the first agent is in discovery node, and the second agent uses the discovery URL of the first agent. In this case, the discovery node should be started first for the cluster to function well.

  For example, Agent1 (discovery node) is started with the following parameters:

  — Discovery URL - `tcp://10.97.97.123:50001`

  — Listen URL - `tcp://10.97.97.123:50001`

  Agent2 is started with the following parameters:

  — Discovery URL - `tcp://10.97.97.123:50001`

  — Listen URL - `tcp://10.97.97.123:50002`

  In this case the Agent1 should be started first then Agent2 and other nodes using the discovery URL of the discovery node (Agent1) for the cluster to function properly.

- **discovery url** determines how the members are discovered. Discovery can be unicast (TCP) or multicast (PGM —Pragmatic General Multicast).

  With PGM, discovery of the current metaspace members is done by using a reliable IP multicast. The attributes of this discovery mechanism are expressed in the form of a URL in the following format:

  ```
  tibpgm://[dport]/[interface];[discovery group address]
  ```

When multicast discovery is not needed or possible, you can use only the TCP discovery. The discovery URL uses well known addresses. The TCP discovery has the following format:

```
tcp://ip1[:port1];ip2[:port2],...
```

Use a semicolon (;) to indicate a null value, or use an empty string. For example, the default value in the configuration files is:

```
#-as_session "" tibpgm://8989/
```

On Unix, using the default PGM protocol discovery URL (`tibpgm://8989`) with TIBCO DataGrid sometimes might throw a stacktrace exception in the log file such as the following:

```
SYS_ERROR (multicast_error - (8) grp_iface not a valid multicast
interface).
```

To resolve this issue, either modify the hosts file, or provide the desired interface explicitly in the network argument. For example:

```
tibpgm://8989/10.97.97.101;224.1.1.1.
```

The default value for multicast group address is 239.8.8.9.

Some parameters need to have the same values across all components within a Hawk Domain for the proper functioning of these components. These parameters are:

- `as_receive_buffer_size` and as defined in the HawkAgent, HMA and receiveBufferSize in Webconsole. It is recommended not to change the default values.
- `as_virtual_node_count` in Hawk Agent and HMA and virtualNodeCount in WebConsole respectively. It is recommended not to change the default values.

TIBCO Enterprise Message Service (EMS) Transport

This section describes configuration options for connecting to TIBCO EMS server as transport for TIBCO Hawk components.

Comment this option if you are using TIBCO DataGrid or TIBCO Rendezvous as the primary transport.

The two ways to specify the TIBCO EMS transport parameters are:

1. Specify only the location of the EMS server.

   For example,

   ```
   -ems_transport tcp://server1:7222
   ```

If communicating with the EMS server using SSL, specify the location of the EMS server as follows for the above example

```
-ems_transport ssl://server1:7222
```

also specify the additional options as outlined below.

2. Specify the location of the EMS server and a valid username and password for the EMS server.

   These parameters are separated by a space and can be an empty string to indicate a null value.

   For example,

   ```
   -ems_transport tcp://server1:7222 admin "#!NhAD1NBC"
   ```

   For instructions to modify the password which was specified during installation, see Handling Passwords for TIBCO EMS Transport on page 33

   If communicating with the EMS server using SSL, specify the location of the EMS server as follows for the above example

   ```
   -ems_transport ssl://server1:7222 admin "#!NhAD1NBC"
   ```

   and also specify the additional options as outlined in TIBCO Enterprise Message Service (EMS) Transport Using SSL on page 32.

Re-Connection Setup

To ensure the TIBCO EMS client attempts re-connection after losing connection to the EMS server, repeat the server URL in the URL list. For example,

```
-ems_transport tcp://H1:7222,tcp://H1:7222
```

Fault Tolerance Setup

You can specify backup servers to connect to in the event of the failure of the primary server. The serverURLs for the primary and backup server(s) are specified as a comma-separated list of URLs.

For example,

```
-ems_transport tcp://server1:7222,tcp://server2:7344
```

If a connection to the first URL fails, the next URL in the list is used to attempt a reconnection. The connections in the list are attempted in sequence (wrapping to the start of the list, if the first connection was not the failed connection) until all URLs have been tried. If no connection is established after all URLs have been tried, the connection fails.

In addition to specifying the -ems_transport options, the following parameters in the EMS server configuration file, `tibemsd.conf`, should be considered:

- `ft_active`—the name of the active server.
- `ft_reconnect_timeout`—the amount of time a backup server waits for clients to reconnect.
- `store`—the directory to store TIBCO EMS data.

For more information, see TIBCO Enterprise Message Service documentation.

TIBCO Enterprise Message Service (EMS) Transport Using SSL

Specifies the SSL parameters used by TIBCO Hawk Display when connecting to the EMS server.

If the -ems_tranport parameter is not used, the following options are ignored.

`-ssl_vendor <name of the vendor>`

The name of the vendor of the SSL implementation. The valid choices are

- `j2se`—Use this option when you want to use the default Java Cryptography Extension (JCE) bundled with the Java JRE.

  On IBM platforms (such as AIX), this option defaults to ibm.
- `entrust61`—Use this option when you want to use the Entrust libraries.
- `ibm`—On non-IBM platforms, this option can be used only if the IBM version of JCE is installed.
- `-ssl_ciphers <`*suite-name(s)*`>`—When specifying this option to specify the cipher suites that can be used, use the ^ qualifier instead of a - qualifier. For more information on specifying cipher suites, refer to the TIBCO Enterprise Message Service documentation.

In addition, the following sets of options are used:

For TIBCO Hawk components to verify the EMS server

- `-ssl_no_verify_host`—If this option is present, it this indicates that the TIBCO Hawk component should not verify the server. Conversely, if this option is not included in the configuration file, it indicates that TIBCO Hawk component should verify the server.
- `-ssl_trusted`—The option specifies the file name of the server certificates. This option can be repeated if more than one certificate file is used.
- `-ssl_no_verify_hostname`—This option specifies that the client should not verify the name in the CN field of the server certificate. Conversely, if this option is not included in the configuration file, it indicates that TIBCO Hawk component should verify the name in the CN field of the server certificate.

- `-ssl_expected_hostname`—The name that is expected in the name of the CN field of the server certificates is specified by this option. The value of this option is used when the -ssl_no_verify_hostname option absent from the configuration file.

If the `-ssl_no_verify_host` is not specified, the option `-ssl_trusted` has to be used. Along with the option `-ssl_trusted`, specify either `-ssl_no_verify_hostname` or `-ssl_expected_hostname`.

For the EMS server to verify TIBCO Hawk components

- `-ssl_identity`—This option specifies the digital certificate of the TIBCO Hawk components.
- `-ssl_private_key`—This option indicates the private key of the TIBCO Hawk component. If the key is included in the digital certificate in -ssl_identity, then you may comment this parameter.
- `-ssl_password`—The password to decrypt the identity file of the Hawk component.

Handling Passwords for TIBCO EMS Transport

On Microsoft Windows, the password is obfuscated before it is stored in the Microsoft Windows registry. In order to use the EMS password encrypt/decrypt functionality, all TIBCO Hawk components (including the tibhawkpassword wrapper) have to use JRE 1.8 or above.

If you need to change the username and password information for the EMS server after installation, a utility is provided to encrypt your password. The following steps detail the use of this utility:

1. Invoke the command line using the syntax

```
tibhawkpassword -encrypt
```

2. Enter the password you want to encrypt when prompted.
3. Copy and paste the output of the utility within quotes ("") into the configuration file.

   For example,

```
 -ems_transport tcp://emsServer:7222 username
"#!FrHOG/QbvQMdVk4/wMv/1DA0"
```

4. Re-start the TIBCO Hawk component whose configuration file you updated in step above.

Starting TIBCO Hawk Components

A standalone TIBCO Hawk 5.2.0 installation does not need any changes in any of the configuration files for you to execute TIBCO Hawk and its components using TIBCO Rendezvous as the default transport. However, if you want to use different or existing transport(s) (TIBCO DataGrid or TIBCO EMS) or use different port or security, refer to the following table.

These executable or scripts are located in *CONFIG_FOLDER*/`bin` and *HAWK_HOME*/`webconsole`.

Table 5 TIBCO Hawk Components, Startup Scripts/Wrappers, and Configuration Files

Component	Executable / Script	Configuration File	Page
TIBCO Hawk Agent	tibhawkagent TIBCO Hawk Agent (Windows Service)	`hawkagent.cfg`	36
TIBCO Hawk WebConsole	tibhawkh2db.exe (Windows) startwebconsole.bat (Windows) tibhawkh2db (UNIX) startwebconsole.sh (UNIX)	`DomainTransportCfg.xml`	47
TIBCO HMA	tibhawkhma (Windows) TIBCO Hawk HMA (Windows Service) starthma (UNIX/Linux)	`hawkhma.cfg`	58
TIBCO Hawk Event Service	tibhawkevent TIBCO Hawk Event (Windows Service)	`hawkevent.cfg`	63
TIBCO Hawk Display	tibawkdisplay	`hawkdisplay.cfg`	70

In any of the above configuration files, if any folder or file has to be configured with a space in it, then the full path has to be provided within double quotes.

On AIX platform, TIBCO HMA process must be started as **`root`** user and should not rely on the **`setuid`** feature. On other non-Windows platforms, pseudo access may be sufficient, but root privileges are recommended to start TIBCO HMA process.

Hawk Domain

A Hawk domain is a logical grouping of Hawk Components. The Hawk Agent, the WebConsole API and the AMI instrumented applications can all communicate with each other only if they all belong to the same hawk domain. A hawk domain constitutes of a transport and a domain name.

Some components may have additional requirements in order to communicate with the Hawk Agent such as to specify the Hawk Agent name to connect to.

However, the Hawk WebConsole can be configured to manage multiple domains.

Configuring Hawk Agent

All the required configuration parameters are stored in *HAWK_HOME*`/bin/hawkagent.cfg`. Each section in this configuration file begins with "`-M`" followed by the module name, such as `-M Self`. Within each modular section, all the command-line options that can be configured are listed. These options are as follows:

Table 6 Hawk Agent Modules and Options

Module	Parameters
-M Self	-cluster <*cluster name*>
	-agent_name <*agent name*>
	-agent_domain <*agent domain name*>
	-hawk_domain <*TIBCO Hawk Domain Name*>
	-as_session <*listen url*> <*discover url*>
	-as_transport_timeout <*time in milliseconds*>
	-as_receive_buffer_size <*buffer size in bytes*>
	-as_virtual_node_count <*virtual node count*>
	-as_worker_thread_count <*worker thread count*>
	-rvd_session <*service*> < *network*> <*daemon*>
	-ems_transport <*ems transport parameters*>
	-ssl_ciphers <*suite-name(s)*>
	-ssl_no_verify_host
	-ssl_trusted <*file name*>
	-ssl_expected_hostname <*host name*>
	-ssl_identity <*file name*>
	-ssl_private_key <*file name*>
	-ssl_password <*string*>

Table 6 Hawk Agent Modules and Options

Module	Parameters
	-use_thread_pool <*thread pool*>
	-character_encoding <*character encoding*>
	-hma_plugin_dir <*directory*>
-M RuleBaseEngine	-rulebases <*rulebase*> <*rulebase*> …
	-config_path <*list of directories to use as configuration sources*>
	-auto_config_dir <*directory to autoload rulebases at startup*>
	-repository_path <*list of repositories to use as configuration sources*>
	-repository_cache_dir <*repository cache dir*>
	-variables <*property file*>
	-email_smtp_server <*SMTP hostname*>
	-email_smtp_port <*server port number*>
	-email_smtp_auth_required <*true or false*>
	-email_smtp_user <*username*>
	-email_smtp_password <*password*>
	-email_from <*sender email address*>
-M AMIService	-ami_rvd_session <*service*> <*network*> <*domain*>
-M LogService	-log_dir <*directory to store TIBCO Hawk logs*>
	-log_max_size <*maximum size of log file*>
	-log_max_num <*maximum number of log files*>
	-log_level <*desired trace level for logs*>
	-log_format <*log format*>
-M TIBProtocolAdapter	-interval <*heartbeat interval in seconds*>
	-security_policy <*class that implements security*>

Table 6 Hawk Agent Modules and Options

Module	Parameters
-M Repository	-repository_name <*repository name*>
	-repository_dir <*repository directory*>
-M LogFileMicroAgent	-scan_rate <*scan interval in seconds*>
	-block_size <*size in kilobytes*>
	-eval_rate <*rate in seconds*>
-M CustomMicroAgent	-timeout <*time in seconds*>

Each of the parameters listed above are explained in more detail, in the following table.

Table 7 Hawk Agent Configuration Options

Property	Mandatory	Default Value	Description
-cluster	No	IP subnet address	The name of the container in which this agent will appear in the display by default. The display will create the container if it does not already exist. Allows for grouping of multiple agents. The cluster name must be enclosed within quotes, if the name contains spaces.
-agent_name	Yes	Host Name of the computer	Each agent being managed must have a unique combination of agent_name, agent_domain, and hawk_domain values. To use the host name as the agent name, comment this option. Note: Agent names with multiple words separated by dots are not supported.
-agent_domain	Yes	"none"	An agent domain must be specified when two computers within the same TIBCO Hawk domain have the same name but reside in different network domains. For example, you might specify this option as: -agent_domain pa.tibco.com.
-hawk_domain	Yes	"default"	As explained on page 35.
TIBCO DataGrid Transport You can use the same configuration for AMI communication.			

Table 7 Hawk Agent Configuration Options

Property	Mandatory	Default Value	Description
-as_session	No	"" tibpgm://8989/	Comment this option if you are using TIBCO EMS or TIBCO Rendezvous as the primary transport. The format is -as_session <listen url> <discover url>. See TIBCO DataGrid Transport on page 29 for more details. Use a semicolon (;) to indicate a null value, or use an empty string, for example: `-as_session "" tibpgm://8989/`
-as_transport_timeout	No	30000	Timeout (in milliseconds) used by transport for internal invocations.
-as_receive_buffer_size	No	1000	Internal buffer size in bytes
-as_virtual_node_count	No	100	Virtual node count
-as_worker_thread_count	No	32	Worker threads
TIBCO Rendezvous Transport			
-rvd_session	No	7474 "" tcp:7474	TIBCO Rendezvous is the default primary transport for TIBCO Hawk 5.2.0. Comment this option if you are using TIBCO DataGrid or TIBCO EMS as the primary transport. The format is -rvd_session <service> <network> <daemon>. If you use this option, all three parameters must be present and separated by white space. Use a semicolon (;) to indicate a null value, or use an empty string, for example: -rvd_session 7474 "" tcp:7474
TIBCO EMS Transport See page 30 for details			
-ems_transport	No		Comment this option if you are using TIBCO DataGrid or TIBCO Rendezvous as the primary transport. Specifies location of the EMS server. For example, -ems_transport tcp://server1:7222. Note: If EMS is configured as Transport, then ami_rvd_session parameter should be configured.

Table 7 Hawk Agent Configuration Options

Property	Mandatory	Default Value	Description
TIBCO EMS SSL Parameters (In case EMS Server is configured for SSL communication). Refer to page 32 for details			
-ssl_vendor	No	J2se	The name of the vendor of the SSL implementation. The valid choices are • j2se-default—Use this option when you want to use the default JCE bundled with the Java JRE. On IBM platforms (such as AIX), this option defaults to ibm. • j2se • entrust61—Use this option when you want to use the Entrust libraries. • ibm—On non-IBM platforms, this option can be used only if the IBM version of JCE is installed.
-ssl_ciphers	No	-	Cipher suite name
-ssl_no_verify_host	No	-	Indicate not to verify the EMS server
-ssl_trusted	No	-	File name of the server certificates. The file should be accessible locally/ shared drive
-ssl_no_verify_hostname	No	-	Indicates not to verify the name in CN field of the server certificate
-ssl_expected_hostname	No	-	If the -ssl_no_verify_host is not specified, the option -ssl_trusted has to be used. Along with the option-ssl_trusted specify either -ssl_no_verify_hostname or -ssl_expected_hostname.
-ssl_identity	No	-	Digital certificate
-ssl_private_key	No	-	Private key
-use_thread_pool	No	256	Optimizes the number of threads the agent creates for every microagent it discovers. It is advisable to turn this option On if the agent is going to discover over 100 microagents. This value is OS dependent and should be set to the maximum number of threads allowable per process.
-character_encoding	No	UTF-8	Character encoding to be used across the configured transport

Table 7 Hawk Agent Configuration Options

Property	Mandatory	Default Value	Description
-hma_plugin_dir	No	*CONFIG_FOLDER*/plugin	Specify the plug-in directory path.
-rulebases	No	-	List of .hrb files to be loaded at the startup
-config_path	No	*CONFIG_FOLDER*/config	The list of directories to use as configuration sources. Used in the case of manual configuration. The delimiter for path entries is a colon (:). If -config_path is used, comment the -auto_config_dir, -repository_path, and -repository_cache_dir options.
-auto_config_dir	No	*CONFIG_FOLDER*/autoconfig	The directory to auto-load Rulebases at the startup. If this option is present, the agent runs in an automatic configuration mode. Specify the directory from which the Rulebase and schedule configuration objects are loaded at the startup. The default directory, *HAWK_HOME*/autoconfig, is used if a value is commented. If you use automatic configuration, comment the following options: -config_path, -repository_path, -repository_cache_dir, -rulebases
-repository_path	No	-	List of repositories to use as configuration sources. If repository configuration mode is used, specify the path to be searched for repositories. The delimiter for path entries is a colon (:). The default used if this option is commented is the current working directory. If -repository_path is used, comment the -auto_config_dir and -config_path options.
-repository_cache_dir	No	*CONFIG_FOLDER*/cache	If repository configuration mode is used, all configuration objects loaded from the repository may be cached in a local directory, specified in this option. This cache is used if a repository fails, and also to minimize network traffic. If -repository_cache_dir is used, comment the -auto_config_dir and -config_path options.

Table 7 Hawk Agent Configuration Options

Property	Mandatory	Default Value	Description
-variables	No	-	Properties file to specify variables file. The variables file can pass data to define external variables to be passed to rules for use in Rulebase configurations.
Email Configurations Email configuration options are used to send the notification email.			
-email_smtp_server	No	-	Specifies the hostname of the SMTP server.
-email_smtp_port	No	25	Specifies the port at which the SMTP server is listening.
-email_smtp_auth_required	No	false	Specifies whether authentication is required for the SMTP server. The default value is `false`. If the value is `true`, you need to provide the username (`-email_smtp_user`) and password (`-email_smtp_password`) for authentication.
-email_smtp_user	No	-	Specifies the sender's username for the SMTP server authentication. The field is mandatory if the authentication option (`-email_smtp_auth_required`) is set to `true`.
-email_smtp_password	No	-	Specifies the sender's password for the SMTP server authentication. The field is mandatory if the authentication option (`-email_smtp_auth_required`) is set to `true`.
-email_from	No	-	Specifies the sender's email address for sending the email. The default is the current system user, for example, `"HawkAdministrator"<admin@abc.com>`
Configuration for AMI communication AMI communication configuration option is used only in the case of TIBCO Enterprise Message Service or TIBCO Rendezvous transport. For TIBCO DataGrid, it is ignored.			
-ami_rvd_session	No	7474 127.0.0.1 tcp:7474	Configures the agent with a RVD session to be used to communicate with applications implementing the TIBCO Hawk Application Management Interface. Multiple -ami_rvd_session parameters may be specified. If none are specified, the RV session used for AMI is the primary session of the Self Module. # Note: When using TIBCO EMS transport for communication, 127.0.0.1 should be used as the network parameter. For example: ami_rvd_session 7474 127.0.0.1 tcp:7474
Logging			

Table 7 Hawk Agent Configuration Options

Property	Mandatory	Default Value	Description
-log_dir	No	*CONFIG_FOLDER*/log	The directory in which to store log files generated by the TIBCO Hawk Agent.
-log_max_size	No	10240	The maximum size of a rotating log files in Kbytes.
-log_max_num	No	10	The maximum number of rotating log files
-log_level	No	7	Specifies the level of diagnostic information stored in the logs. The following are the logging levels: 4 - Indicates error level trace messages should be enabled. 6- Indicates warning level trace messages should be enabled. 7 - Indicates information level trace messages should be enabled. 8 - Indicates debug level trace messages should be enabled. 16 - Indicates AMI level trace messages should be enabled. A value of zero turns all tracing off. A value of -1 turns all tracing on.
-log_format	No	"default"	The format for trace log messages
TIBCO Protocol Adapter			
-interval	No	30 seconds	The heartbeat interval in seconds. Not available for TIBCO DataGrid transport.
-security_policy	No	-	The fully qualified name of the Java class which implements the security policy. For more information refer to Chapter 4, TIBCO Hawk Security Model, on page 81.
Rulebase Repository			
-repository_name	No	-	The name of the Rulebase Repository
-repository_dir	No	-	The location of the Repository
Logfile MicroAgent			
-scan_rate	No	10 seconds	The rate at which log files are scanned.
-block_size	No	16 KB	The maximum number of kilobytes to read on each scan.

Table 7 Hawk Agent Configuration Options

Property	Mandatory	Default Value	Description
-eval_rate	No	300 seconds	The rate at which all the log files being monitored are re-evaluated.
Custom MicroAgent			
-timeout	No	30 seconds	The timeout value for commands executed by the custom MicroAgent.

Logging for TIBCO Hawk Agent

TIBCO Hawk 5.2.0 provides two different modes of logging: trace mode and log4j mode.

Trace Logging Mode

By default, Hawk Agent uses the trace mode for logging requirements. TIBCO Hawk 5.2.0, uses the trace mode logging mechanism to match parity with different versions of Hawk, bundled in different TIBCO products.

The logging parameters for Hawk Agent, Hawk MicroAgent, and Hawk Event are configured using the logging parameters defined their respective configuration files. For more details on these logging parameters, refer the following sections:

- Table 7, Hawk Agent Configuration Options, on page 38
- Table 8, HMA Configuration Properties, on page 58
- Table 10, Hawk Event Service Configuration Properties, on page 63

Log4j Logging Mode

In TIBCO Hawk 5.2.0, you can enable the log4j mode for Hawk Agent logging requirements. By default, the log4j mode is disabled for Hawk Agent. Modify the log4j configuration in the respective .tra files to enable the log4j for logging.

The configuration for Hawk Agent is included in `tibhawkagent.tra` at:

```
java.extended.properties=-Duse_log4j=false
-Dlog4j.configuration=%HAWK_CONFIG_HOME%/bin/log4j_agent.properties
```

To enable the log4j for logging, update the value of the `-Duse_log4j` parameter to `true` in the configuration mentioned above.

Specify "`-Dlog4j.configuration`" as command-line parameter to override the log file configuration.

A default log4j properties file exists at *CONFIG_FOLDER*`/bin/log4j_agent.properties`. You can modify this configuration file or use your own properties file.

The logging properties specified in `hawkagent.cfg` for –M LogService viz. log_dir, log_max_size, log_max_num and `log_level` override those in log4j RootLogger's RollingFileAppender.

Use of -log_level Parameter in Agent Configuration

If –log_level <*int_value*> is specified in –M `LogService` section of agent configuration and the value of `log_level` is greater than seven, the log4j root logger level is set to `DEBUG`.

Note:

- Ensure that the log4j configuration file specified above must have at least one RollingFileAppender applied to the Root logger.
- Agent logging configuration properties given in hawkagent.cfg only apply to RollingFileAppender for the Root category (Logger). If there are sub-categories with different file appenders, the agent properties will not override them.
- Log4j.xml configuration file is not supported.

Mapping of TIBCO Hawk default Util Logging Levels with Log4j:

Util Logging (in Hawk Agent)

Util Logging Level	Log4j Logging Level
Log.INFO (value 0)	INFO
Log.WARNING (value 1)	WARN
Log.DEBUG (value 2)	DEBUG
Log.ERROR (value 3)	ERROR
Log.EVENT (value 4)	INFO
Log.EXCEPTION	EXCEPTION

Trace Logging (in AMI)

Util Logging Level	Log4j Logging Level
Log.ALWAYS (value 0)	DEBUG
Log.INFO (value 1)	INFO
Log.WARNING (value 2)	WARN
Log.ERROR (value 4)	ERROR
Log.DEBUG (value 8)	DEBUG
Log.AMI (value 16)	INFO

Configuring Hawk WebConsole

The following sections explain various configurations for TIBCO Hawk WebConsole.

Web Server for Hawk WebConsole

By default, TIBCO Hawk installer bundles Apache Tomcat 7.0 web server and deploys TIBCO Hawk WebConsole web-application in it. All the required libraries for TIBCO DataGrid and persistence are already available at appropriate locations.

If you want to use a different standalone Tomcat server to deploy TIBCO Hawk WebConsole, you need to follow these manual steps:

1. Copy *HAWK_HOME*`/webconsole/hawkwebconsole.war` to <*CATALINA_HOME*>`/webapps/`.
2. If TIBCO DataGrid is used as the transport, copy the jar (`as-common.jar`) to the `lib` folder of Tomcat (<*CATALINA_HOME*>`/lib`)
3. If H2 database is used, copy H2 driver jar (`h2*.jar`) to the `lib` folder of Tomcat (<*CATALINA_HOME*>`/lib`).
4. If TIBCO Rendezvous is used as the transport, copy the following `JAR` to the `lib` folder of Tomcat (<*CATALINA_HOME*>`/lib`):
   - *RV_HOME*`/lib/tibrvj.jar`
5. If TIBCO Enterprise Message Service is used as the transport, copy the following JARs to lib folder of Tomcat (<*CATALINA_HOME*>`/lib`):
   - *EMS_HOME*`/lib/tibrvjms.jar`
   - *EMS_HOME*`/lib/tibjms.jar`
   - *EMS_HOME*`/lib/TIBCrypt.jar`
   - *EMS_HOME*`/lib/jms.jar` (in case of EMS 6.3) or *EMS_HOME*`/lib/jms-2.0.jar` (in case of EMS 8.0)

6. Make sure that TIBCO DataGrid, TIBCO EMS (when required) and TIBCO Rendezvous shared libraries are in
   - `PATH` (Windows)
   - `LD_LIBRARY_PATH` (Linux, Solaris)
   - `SHLIB_PATH` (HP-UX)
   - `LIBPATH` (AIX)
   - `DYLD_LIBRARY_PATH` (MacOS)

If you want to use any web server other than Tomcat, then you need to copy the above mentioned libraries (JAR/WAR) into appropriate locations specific to the web server.

Basic Configurations

Hawk Domain and Transport

TIBCO Hawk WebConsole can monitor multiple domains configured for different or same transports.

The monitored domain names must be unique within and across different transport types.

TIBCO Hawk WebConsole can monitor multiple transports at the same time. Each of those transports supports multiple domain configurations.

Domain Transport Configuration File (DomainTransportCfg.xml)

The configuration file used to configure the domains is specified in `web.xml` under the `'main_servlet'` definition.

```
<init-param>
     <param-name>domain_config_file</param-name>
     <param-value>/DomainTransportCfg.xml</param-value>
</init-param>
```

This file `DomainTransportCfg.xml` is available in the *HAWK_HOME*`/webconsole/tomcat/webapps/hawkwebconsole/WEB-INF/conf` folder.

It follows the xml schema defined as per `DomainTransportCfg.xsd` as explained in *TIBCO Hawk WebConsole User's Guide*. Also, refer to the following examples on how to configure Hawk Domains and their respective transports. One or more Hawk domains can be managed. You require one DomainTransport section per managed domain as follows.

For example, the configuration for RV transport domain (default) is as follows:

```
<!--  RV transport domain-->
<hk:DomainTransport>
    <hk:HawkDomainName>default</hk:HawkDomainName>
    <hk:Transport>
        <hk:RVTransportCfg>
            <hk:service>7474</hk:service>
            <hk:network></hk:network>
            <hk:daemon>tcp:7474</hk:daemon>
        </hk:RVTransportCfg>
    </hk:Transport>
    <hk:SecurityPolicy></hk:SecurityPolicy>
</hk:DomainTransport>
```

Configuring Security for Any Domain

Configure a security policy for each domain independently using the `<hk:SecurityPolicy>` as shown in the preceding section. For more Information on Security Configuration, refer to Chapter 4, TIBCO Hawk Security Model, page 81.

The security policy of a domain is an optional tag. If the `<hk:SecurityPolicy>` tag is not present in the Domain configuration or is empty, the domain is initialized with no security policy.

Persistence Mode

The WebConsole Server may or may not be configured to use a database. Persistence mode enabled refers to when a database is used for configuration and storage. The WebConsole Server uses the persistence mode by default. You can disable the persistence mode in `web.xml`. Depending on the selected mode, different aspects of the web applications are configured differently. The following sections cover these configuration options.

The persistence mode can be enabled or disabled in `web.xml` as shown:

```
<!-- Hawk webconsole persistence mode -->
<!-- Accepted values are either true or false, default value is true-->
 <context-param>
   <param-name>persistence_mode</param-name>
   <param-value>false</param-value>
```

```
</context-param>
```

Persistence Mode Enabled Settings

With persistence mode enabled, you can save/restore configuration objects and user created dashboards across multiple sessions.

The above functionality is not available when the persistence mode is disabled.

TIBCO Hawk bundles a H2 database (`http://www.h2database.com`) for data persistence. You may choose to connect to an external database that is JDBC compliant

Configuring an External Database

1. Define database resource in the hawkwebconsole web application's `META-INF/context.xml` as follows:

```
<Context>
<!-- Configure Hawk Database resource for Persistence mode-->
  <Resource name="jdbc/hawkdb"
      factory="org.apache.tomcat.jdbc.pool.DataSourceFactory"
      type="javax.sql.DataSource"
      url="jdbc:h2:tcp://localhost/~/hawk"
      driverClassName="org.h2.Driver"
      username="sa"
      password=""
      maxActive="100"
      maxIdle="20"
      initialSize ="10"
      defaultAutoCommit ="false"
      removeAbandoned="true"
      removeAbandonedTimeout="60"
    logAbandoned="true"/>
</Context>
```

2. Define the resource reference in its `web.xml` as follows:

```
<resource-ref>
 <description>Hawk Database Connection</description>
   <res-ref-name>jdbc/hawkdb</res-ref-name>
   <res-type>javax.sql.DataSource</res-type>
   <res-auth>Container</res-auth>
</resource-ref>
```

Hawk WebConsole Users

Hawk WebConsole can be configured to authenticate Hawk users against the following types of user repositories and these authentication types need to be set in the following section of `web.xml`.

```
<!-- Hawk Users Authentication provider type, supported types are
FILE or LDAP or DATABASE -->
  <context-param>
      <param-name>auth_type</param-name>
      <param-value>FILE</param-value>
    </context-param>
```

Default `auth_type` is FILE, that is, File based user repository is used.

Database (RDBMS) based User Repository

In the DATABASE based configuration, the users and passwords are stored in the database.

To use this configuration, change auth_mode to DATABASE in web.xml:

```
<context-param>
  <param-name>auth_type</param-name>
  <param-value>DATABASE</param-value>
</context-param>
```

To use `auth_type` as DATABASE, make sure persistence mode is enabled and Database configuration is done appropriately.

The user authentication information is stored in a table called `hawk_users`.

For example, to add a new user (admin/admin), Administrator needs to run the following SQL script:

```
INSERT INTO hawk_users (user_name, password) VALUES ('admin',
'admin');
```

OR

```
INSERT INTO hawk_users (user_name, password) VALUES ('admin',
'232f297a57a5a743894a0e4a801fc3');
```

The password can be in plain text or MD5 hashed.

LDAP Based User Repository

In the LDAP based configuration, the users and passwords are stored in LDAP/AD.

To use this configuration, change auth_mode to LDAP in `web.xml`:

```
<context-param>
     <param-name>auth_type</param-name>
     <param-value>LDAP</param-value>
</context-param>
```

```
Configure LDAP properties in web.xml:
<!-- If authentication type is LDAP, configure LDAP properties -->
<context-param>
     <param-name>ldap_host</param-name>
     <param-value>10.97.107.21</param-value>
</context-param>
<context-param>
<!--If not configured, default port 389-->
     <param-name>ldap_port</param-name>
     <param-value>389</param-value>
</context-param>
<context-param>
     <param-name>ldap_adminDN</param-name>
     <param-value>CN=eric,CN=Users,DC=pmqa,DC=com</param-value>
</context-param>
<context-param>
     <param-name>ldap_admin_password</param-name>
     <param-value>Search123</param-value>
</context-param>
<context-param>
     <param-name>ldap_baseDN</param-name>
     <param-value>DC=pmqa,DC=com</param-value>
</context-param>
<context-param>
<!--If not configured, default value is 'uid'-->
     <param-name>ldap_uid_attr</param-name>
     <param-value>cn</param-value>
</context-param>
<context-param>
<!--If not configured, default value is '*' -->
     <param-name>ldap_object_class</param-name>
     <param-value>*</param-value>
</context-param>
```

File Based User Repository

In the File based configuration, the users and passwords are stored in the `hawkusers.xml` file. To configure file based authentication:

1. Change the `auth_mode` to `FILE` in `web.xml` as follows:

```
<context-param>
     <param-name>auth_type</param-name>
     <param-value>FILE</param-value>
</context-param>
```

2. Configure the `hawkusers.xml` file as follows:

```
<!-- Hawk Users file for FILE based authentication -->
<context-param>
     <param-name>hawk_users_file</param-name>
     <param-value>/hawk_users.xml</param-value>
</context-param>
```

Store the Hawk users file in the location *HAWK_HOME*\webconsole\tomcat\webapps\WEB-INF\conf. It has the following format:

```
<user username="<username>" password="<MD5 hashed password or Plain text password>" roles="<user role>"/>
```

Logging

WebConsole uses log4j for application logging. By default, the WebConsole logs are generated under *CONFIG_FOLDER*/logs/hawkwebconsole.log.

You can modify the default log4j config file *WEB-INF*/conf/log4j_webconsole.properties or use your own properties file.

You can configure the location of logs using the log4j.appender.RFileApp.File property in the log4j config file (*WEB-INF*/conf/log4j_webconsole.properties).

For example, the default location of logs is as follows:

```
log4j.appender.RFileApp.File=C:/ProgramData/HK510v11/tibco/cfgmgmt
/hawk/logs/hawkwebconsole.log
```

You can specify your properties file location in the *WEB-INF*/web.xml file as follows:

```
<context-param>
      <param-name>log4j_config_file</param-name>
      <param-value>/log4j_webconsole.properties</param-value>
</context-param>
```

By default, Tomcat server logs are generated at *HAWK_HOME*/webconsole/logs.

Authorization

Perform the filtering of agents in the WebServer layer. When enabled, authenticated users can be authorized to access specific domains or agents.

By default, users have access to all configured domains and agents.

To configure the filtering of domains and agents in the User Agent Config file, use one of the following ways:

- Use a File Path: add the following entry in web.xml under the 'main_servlet' definition.

```
<init-param>
     <param-name>user_agent_config_file</param-name>
     <param-value>/hawk_user_agent_cfg.txt</param-value>
</init-param>
```

- Use a URL: an example of configuring domain filtering with a URL is as follows:

```
<init-param>
 <param-name>user_agent_config_file</param-name>
 <param-value>http://<hostname:port>/hawkusers/hawk_user_agent_cfg.
txt</param-value>
</init-param>
```

Example of `hawk_user_agent_cfg.txt` is as follows:

```
# This file is used by agent running with "COM.TIBCO.hawk.security.trusted.Trusted"
security model.
#
#
# Explanation of Settings:
#
# This file provides authorization or filter level for node/agent for WebConsole
application.
# This doesn't include microagent and methods level authorization, even if the
microagent and methods are defined, then those will be ignored.
# The node column can have a node/agent name or "agent dns domain" or
"agent:dns:domain" format.
# Wild card * is supported in both user and node column.
# Access restrictions can be defined for an user by starting record with !
# In case of any conflict in grant and restriction, the restriction will have the
precedence.
#Examples
#1. admin will have access to all agents/nodes and domains
#2. user1 will have access to agent1 under domain1 with dns dns1.
#3. user2 will have access to all agents/nodes under domain domain2 and any dns.
#4. user3 will have access to agent3 if agent3 doesn't belong to domain3
#
# File format:
#
# user       node
#            access
#             &
#          restrictions
#
admin *
user1 "agent1 dns1 domain1"
user2 "* * domain2"
user3       agent3
!user3"* * domain3"
```

Enabling SSL Authentication for Hawk WebConsole

The WebConsole is hosted inside the Tomcat web container, thus, enable the SSL for the Tomcat Web container to enable the SSL for WebConsole. Follow the steps mentioned in the Tomcat documentation at the following URL to configure SSL in the Tomcat Web container:

https://tomcat.apache.org/tomcat-7.0-doc/ssl-howto.html

Alternatively, you can also follow these steps to quickly enable SSL over HTTP for the Tomcat Web container:

1. Open the command prompt and navigate to the JDK Installation folder.
2. Run the following command to create a keystore file to store the server's private key and self-signed certificate:

JAVA_HOME`\bin\keytool -genkey -alias tomcat -keyalg RSA`

3. When prompted, specify the password string, for example, "hawkwebconsole". The password could be any string, the same password needs to be specified in the `server.xml` configuration file (see step 6).
4. When prompted, specify general information about the certificate, such as company, contact name, and so on. This information helps users to validate the authenticity of the certificate, as this information is displayed to users who attempt to access a secure page in your application.

   The `.keystore` file with the Certificate is created in the same JDK installation folder.
5. Now, browse to the configuration folder of Hawk WebConsole and open `server.xml` for editing.

HAWK_HOME`/webconsole/tomcat/conf/server.xml`

6. Enter the following information under the Catalina service tag `<Service name="Catalina">`:

```
<Connector protocol="org.apache.coyote.http11.Http11Protocol"
port="8443" maxThreads="200"
scheme="https" secure="true" SSLEnabled="true"
keystoreFile="<path of .keystore file>"
keystorePass="hawkwebconsole"
clientAuth="false" sslProtocol="TLS"/>
```

7. Save the file and restart Hawk WebConsole.

   To verify, type the URL "https://localhost:8443/hawkwebconsole/" in a web browser and press **Enter**. Web browser should display Hawk WebConsole.

Agent Inventory

The WebConsole Server maintains a record of all newly discovered agents.

- Upon restart of the WebConsole Server, these agents status initially appears as "Offline"
- During the discovery process, if an agent is discovered, the status changes to "Alive".

If persistence mode is enabled, the agent information is saved in the configured database.

If persistence mode is disabled, the agent information is saved in an xml file, which does not require any configuration. By default, the application stores the agent information under <*CATALINA_HOME*>/AppData/hawk_agents.xml.

It is possible to bootstrap the application with a predefined set of Hawk Agents by directly adding entries to this file or to the corresponding table in the database.

Global User Preferences

The user preferences at global level can be configured in the WebConsole Server. These preferences are applicable across all users.

The following example shows how the depth of alert/subscription caches in the browser (`default=1000`) can be set in `web.xml`:

```
<!-- Configure the Max limit of the items (Alerts/subscription)to
be cached on browser -->
<!-- If not configured, the default limit is 1000 -->
<context-param>
     <param-name>browser_item_cache_max</param-name>
     <param-value>1000</param-value>
</context-param>
```

HeatMap Update Frequency

The rendering frequency of heatmaps in Hawk WebConsole can be controlled using the following parameters in `web.xml`:

`heatmap_update_type` — Specifies if the heatmap can be updated automatically or at the specified time interval. Set the value to one of the following:

- **`auto`** —Updates heatmap automatically for optimal performance
- **`timer`**— Gives control to specify the rendering rate using the parameter "heatmap_render_rate"
- **`heatmap_render_rate`**— Specifies how often the heatmap is updated. Default value 10 seconds. The minimum value is 5 seconds.

Change Notifications

All configuration object changes made via the WebConsole UI are propagated to all connected user sessions. However, the changes made through Hawk Display or any other mechanism is not notified.

Versioning

When the persistence mode is enabled, the objects that are local to a user (that is, the objects that are not yet deployed to an agent) are versioned.

A version check is performed when you try to save a local object. The save operation succeeds only if the version is the latest. Otherwise, you get an exception that asks you to refresh your copy. It can happen only if the same user logs in from two sessions.

For agent deployed objects or common objects, versioning is not maintained. This is because Agents do not support versioning and version based deployment of configuration objects.

WebConsole User Session Persistence

By default, the session persistence is disabled for WebConsole application with Tomcat restart. You can enable or disable the session persistence with Tomcat restart for Hawk WebConsole application. It is configurable in `tomcat/webapps/hawkwebconsole/META-INF/context.xml`.

To enable session persistent, comment out the below entry in `context.xml`:

```
<Manager pathname="" />
```

The above configuration for user session persistence is specific to Tomcat. If you are deploying Hawk WebConsole on any other web server, follow equivalent steps for that web server.

Configuring HMA

All the required configuration parameters are stored in *CONFIG_FOLDER*`/bin/hawkhma.cfg`. The following table describes various HMA configuration properties in easy-to-understand logical groups. The various groups are as follows:

Table 8 HMA Configuration Properties

Logical Group	Parameters
TIBCO HMA Common	-hawk_domain <TIBCO Hawk domain name>
	-agent_name <agent name>
	-agent_domain <agent domain name>
TIBCO DataGrid Session	-as_session <listenurl> <discoverurl>
	-as_transport_timeout <timeout in milliseconds>
	-as_receive_buffer_size <size in bytes>
	-as_worker_thread_count <numeric count>
	-as_virtual_node_count <numeric count>
TIBCO Rendezvous (RVD) Session	-rvd_session <service> <network> <daemon>
Logging Information	-logdir <directory to store HMA logs>
	-logmaxsize <maximum size of one HMA log>
	-logmaxnum <maximum number of HMA logs>
	-log_format <Hawk or ActiveEnterprise format>
Timeout	-timeout <milliseconds>
Trace Level	-tracelevel <desired trace level>
UNIX Signal Handling	-ignore_sigint
	-ignore_sigterm
	-ignore_sigabrt
Encoding	-codepage

Each of the parameters listed above are explained in more detail, in the following table.

Table 9 HMA Configuration Parameter Details

Property	Mandatory	Default Value	Description
TIBCO HMA Common			
-hawk_domain	Yes	"default"	See page 35 for details.
-agent_name	Yes	Host Name of the computer	When Hawk is configured with TIBCO DataGrid as the transport mechanism, on non-Windows platforms, and agent_name is not specified, then the host name is used as the default agent_name implicitly. Ensure that the output of the '`/usr/bin/hostname`' UNIX command matches with the '`hostname`' specified in the `/etc/hosts` file. For example, if the value of `hostname` is `linux64` then the `/etc/hosts` file should have the entry, such as, `192.168.1.100 linux64`.
-agent_domain	Yes	"none"	An agent domain must be specified when two computers within the same TIBCO Hawk domain have the same name but reside in different network domains. For example, you might specify this option as: -agent_domain pa.tibco.com.
TIBCO DataGrid Transport Note: Same configuration will be used for AMI communication			
-as_session	No	"" tibpgm://8989/	Comment this option if you are using TIBCO Rendezvous as the primary transport. The format is `-as_session` <*listen url*> <*discover url*>. See TIBCO DataGrid Transport on page 29 for more details. Use a semicolon (;) to indicate a null value, or use an empty string, for example: `-as_session "" tibpgm://8989/`
-as_transport_timeout	No	30000	Timeout (in milliseconds) used by transport for internal invocations
-as_receive_buffer_size	No	1000	Internal buffer size in bytes
-as_virtual_node_count	No	100	Virtual node count

Table 9 HMA Configuration Parameter Details

Property	Mandatory	Default Value	Description
-as_worker_thread_count	No	32	Worker threads
TIBCO Rendezvous Transport			
-rvd_session	No	7474 "" tcp:7474	TIBCO Rendezvous is the default primary transport for TIBCO Hawk 5.2.0. Comment this option if you are using TIBCO DataGrid as the primary transport. The format is -rvd_session <service> <network> <daemon>. If you use this option, all three parameters must be present and separated by white space. Use a semicolon (;) to indicate a null value, or use an empty string, for example: -rvd_session 7474 "" tcp:7474
Logging			
-logdir	No	*CONFIG_FOLDER*/logs	The directory in which to store log files generated by the TIBCO Hawk HMA.
-logmaxsize	No	1024	The maximum size of a rotating log files in Kbytes.
-logmaxnum	No	5	The maximum number of rotating log files
-log_format	No	“default”	The format for trace log messages
Timeout			
-timeout	No	10000	The method invocation timeout period to be used by all AMI methods. Timeout value is in milliseconds.
Trace Level			

Table 9 HMA Configuration Parameter Details

Property	Mandatory	Default Value	Description
-tracelevel	No	7	Specifies the level of diagnostic trace output. The desired trace level is specified by adding the following values together: 1 - Indicates information level trace messages should be enabled. 2 - Indicates warning level trace messages should be enabled. 4 - Indicates error level trace messages should be enabled. 8 - Indicates debug level trace messages should be enabled. 16 - Indicates AMI level trace messages should be enabled. 32 - Adds source file name and line number to all messages. A value of zero turns all tracing off A value of -1 turns all tracing on.
Unix Signal Handling			
-ignore_sigint	No	-	Ignore SIGINT signal
-ignore_sigterm	No	-	Ignore SIGTERM signal
-ignore_sigabrt	No	-	Ignore SIGABRT signal
Encoding			
-codepage	No	65001 (UTF-8)	The desired code-page for multi-byte/Unicode character sets

Logging for HMA

The TIBCO Hawk HMA process creates log files for each MicroAgent, such as `Hawk_Process.log`. The HMA process also creates a `Hawk_HMA.log` file for MicroAgent-generic errors.

To see console logs on command console, add "`-console`" argument as one of the application arguments in the file `tibhawkhma.tra`. Otherwise, the logs get logged as Windows Events. If the logging is enabled, the logs appear in the related files.

You control the size and level of detail in HMA log files at the start using the `hawkhma.cfg` file or during runtime using the `setTraceLevel`() and `setTraceParameters`() methods. These standard methods are included for default platform-specific MicroAgents, and can be added when instrumenting an application using the AMI protocol.

Following are some representative lines in an HMA log file for the Services MicroAgent:

```
INFO 01/15/2013 11:14:39
OPTIONS: Transport: AS
Discovery URL : tcp://10.97.123.88:40000
Listen URL : tcp://10.97.123.88:40000
Invocation Timeout : 30000
Virtual Node Count : 100
Worker Thread Count : 32
Received Buffer Size : 1000
CodePage : 65001
TraceLevel : -1
Logdir : C:/ProgramData/hawkv16/tibco/cfgmgmt/hawk/log --
LogMaxSize : 1024 -- Max Log Files : 5 -- Log Format : default
INFO 01/15/2013 11:14:53 TIBCO Hawk HMA initialization completed
successfully.
```

Configuring Hawk Event Service

The Hawk Event Service records:

- All alerts raised and cleared by TIBCO Hawk Agents across the network, as well as the changes in Agent's alert level
- Record events reported by agents in text files or relational databases using JDBC
- Asynchronously notify using AMI

Refer to the *TIBCO Hawk Concepts* guide for details about TIBCO Hawk Event Service.

All the required configuration parameters are stored in *CONFIG_FOLDER*`/bin/hawkevent.cfg`. The following table describes various Hawk Event Service related configuration properties in easy-to-understand logical groups. The various groups are as follows:

Table 10 Hawk Event Service Configuration Properties

Logical Group	Parameters
TIBCO DataGrid Session	-as_session <*listenurl*> <*discoverurl*>
	-agent_name <*agent name*>
	-agent_domain <*agent domain name*>
	-as_transport_timeout <*timeout in milliseconds*>
	-as_receive_buffer_size <*size in bytes*>
	-as_worker_thread_count <*numeric count*>
	-as_virtual_node_count <*numeric count*>
TIBCO Rendezvous (RVD) Session	-rvd_session <*service*> <*network*> <*daemon*>
TIBCO Hawk Domain	-hawk_domain <*TIBCO Hawk domain name*>
Logging Information	-logdir <*directory to store Event Service logs*>
	-logmaxsize <*maximum size of one Event Service log*>
	-logmaxnum <*maximum number of Event Service logs*>
	-log_level <*desired trace level for logs*>

Table 10 Hawk Event Service Configuration Properties

Logical Group	Parameters
	-log_format <*Hawk or ActiveEnterprise format*>

Fault Tolerance

To enable fault tolerance, uncomment the `-ft` parameter.

This instance joins a fault tolerant group named `HawkEventService:hawkdomain`, where *hawkdomain* is the domain of the agent.

Separate instances of TIBCO Hawk must be running on at least two machines in order to use fault tolerance. Fault tolerance must be enabled on each instance

Weight

Assign the weight of this instance using a positive integer. The member with the highest weight receives rank 1 (so it outranks all other members). When an instance fails, the next-highest instance is activated and the member with the next highest weight receives rank 2; and so on.

Table 11 Hawk Event Service Configuration Properties

Logical Group	Parameters
Fault tolerance	-ft <*fault tolerance weight*>
	-ft_rvd_session <*service*> <*network*> <*daemon*>
File based event store	-datadir
	-datamaxsize
	-datamaxnum
Database based event store	-JDBCdriverClassName
	-JDBCuserName
	-JDBCpassword
	-JDBCurl
	-JDBCdbType
	-JDBCalertTableFields

Be careful not to confuse TIBCO Hawk Event Service data files (`Event.dat`) with Event Service log files (`Event.log`).

- `Event.dat` data files contain the data produced by the Event Service.
- `Event.log log` files record the state of the Event Service itself.

Each of the parameters listed above are explained in more detail, in the following table.

Table 12 Hawk Event Service Configuration Parameter Details

Property	Mandatory	Default Value	Description
-hawk_domain	Yes	"default"	See page 35 for details.
-agent_name	Yes	Host Name of the computer	The name of the agent. Each Microagent being monitored must have agent_name, by which Microagent is being monitored
TIBCO DataGrid Transport Note: Same configuration will be used for AMI communication			
-as_session	No	"" tibpgm://8989/	Comment this option if you are using TIBCO Rendezvous or TIBCO EMS as the primary transport. The format is `-as_session` *<listen url> <discover url>*. See TIBCO DataGrid Transport on page 29 for more details. Use a semicolon (;) to indicate a null value, or use an empty string, for example: `-as_session "" tibpgm://8989/`
-as_transport_timeout	No	30000	Timeout (in milliseconds) used by transport for internal invocations
-as_receive_buffer_size	No	1000	Internal buffer size in bytes
-as_virtual_node_count	No	100	Virtual node count
-as_worker_thread_count	No	32	Worker threads
TIBCO Rendezvous Transport			

Table 12 Hawk Event Service Configuration Parameter Details

Property	Mandatory	Default Value	Description
-rvd_session	No	7474 "" tcp:7474	TIBCO Rendezvous is the default primary transport for TIBCO Hawk 5.2.0. Comment this option if you are using TIBCO DataGrid or TIBCO EMS as the primary transport. The format is -rvd_session <service> <network> <daemon>. If you use this option, all three parameters must be present and separated by white space. Use a semicolon (;) to indicate a null value, or use an empty string, for example: -rvd_session 7474 "" tcp:7474
TIBCO EMS Transport See page 30 for details.			
-ems_transport	No		Comment this option if you are using TIBCO DataGrid or TIBCO Rendezvous as the primary transport. Specifies location of EMS server. For example, -ems_transport tcp://server1:7222. Note: If EMS is configured as Transport, the ami_rvd_session parameter should be configured.
TIBCO EMS SSL Parameters (In case EMS Server is configured for SSL communication). Refer to page 32 for details.			
-ssl_vendor	No	J2se	The name of the vendor of the SSL implementation. The valid choices are • j2se-default—Use this option when you want to use the default JCE bundled with the Java JRE. On IBM platforms (such as AIX), this option defaults to ibm. • j2se • entrust61—Use this option when you want to use the Entrust libraries. • ibm—On non-IBM platforms, this option can be used only if the IBM version of JCE is installed.
-ssl_ciphers	No	-	Cipher suite name
-ssl_no_verify_host	No	-	Indicate not to verify the EMS server

Table 12 Hawk Event Service Configuration Parameter Details

Property	Mandatory	Default Value	Description
-ssl_trusted	No	-	File name of the server certificates. The file should be accessible locally/ shared drive
-ssl_no_verify_hostname	No	-	Indicates not to verify the name in CN field of the server certificate
-ssl_expected_hostname	No	-	If the -ssl_no_verify_host is not specified, the option -ssl_trusted has to be used. Along with the option-ssl_trusted specify either -ssl_no_verify_hostname or -ssl_expected_hostname.
-ssl_identity	No	-	Digital certificate
-ssl_private_key	No	-	Private key
-character_encoding	No	UTF-8	Character encoding to be used across the configured transport
Logging			
-logdir	No	*CONFIG_FOLDER*/logs	The directory in which to store log files generated by the TIBCO Hawk Event Service
-logmaxsize	No	10M	The maximum size of a rotating log files in Kbytes
-logmaxnum	No	10	The maximum number of rotating log files
-log_level	No	7	Specifies the level of diagnostic information stored in the logs. The following are the logging levels: 4 - Indicates error level trace messages should be enabled 6- Indicates warning level trace messages should be enabled 7 - Indicates information level trace messages should be enabled 8 - Indicates debug level trace messages should be enabled 16 - Indicates AMI level trace messages should be enabled A value of zero turns all tracing off. A value of -1 turns all tracing on.
-log_format	No	"default"	The format for trace log messages

Table 12 Hawk Event Service Configuration Parameter Details

Property	Mandatory	Default Value	Description
–script	No	-	Specifies the fully-qualified name of an executable file to be executed when an agent is lost.
-security_policy	No	-	Fully qualified name of the Java class which implements security policy. For more information refer to Chapter 4, TIBCO Hawk Security Model, page 81.
-variables	No		Properties file to specify variables file. The variables file can pass data to define external variables to be passed to rules for use in Rulebase configurations.
Configuration for AMI communication It is used only in case of Rendezvous or EMS transport. For TIBCO DataGrid, it is ignored.			
-ami_rvd_session	No	7474 127.0.0.1 tcp:7474	Configures the agent with a RVD session to be used to communicate with applications implementing the TIBCO Hawk Application Management Interface. Multiple -ami_rvd_session parameters may be specified. If none are specified, the RV session used for AMI is the primary session of the Self Module. # Note: When using TIBCO EMS transport for communication, 127.0.0.1 should be used as the network parameter. For example: ami_rvd_session 7474 127.0.0.1 tcp:7474
Fault Tolerance			
-ft	No	-1	Fault tolerance weight
-ft_rvd_session	No	7474 127.0.0.1 tcp:7474	TIBCO Rendezvous session used for fault tolerance. This option is ignored if the -ft option is not specified. Note: In case of TIBCO DataGrid the same as_session parameter will be used for Fault tolerance.
File Based Event Store			
-datadir	No	null	Specifies the location to store data files generated by the TIBCO Hawk Event Service. IF not specified, will not log events.
-datamaxsize	No	1M	The maximum size of a rotating data file in KB. You may apply a suffix m or M for indicating MB values (for example, 10m).

Table 12 Hawk Event Service Configuration Parameter Details

Property	Mandatory	Default Value	Description
-datamaxnum	No	4	The maximum number of rotating data files
Database Based Event Store			
-JDBCdriverClassName	No	-	Class name for the vendor's JDBC driver. For example, com.microsoft.jdbc.sqlserver.SQLServerDriver
-JDBCuserName	No	-	User name to connect to the database
-JDBCpassword	No	-	User's password to connect to the database
-JDBCurl	No	-	URL which identifies the database connection
-JDBCdbType	No	-	Database vendor, valid/supported values are ORACLE, SQLSERVER, DB2 or SYBASE
-JDBCalertTableFields	No	-	User defined alert action property fields to be created as additional columns in the HawkAlertClearInfo table

Database Configuration

To setup database, add the appropriate `.jar` file of the JDBC driver classes, from the database vendor, to the *HAWK_HOME*`/lib` based on the value of the `-JDBCdbType` parameter.

-JDBCdbType Value	Required .jar Files
ORACLE	ojdbc6.jar
SQLSERVER	sqljdbc.jar sqljdbc4.jar
DB2	jconn3.jar
SYBASE	db2jcc4.jar

Configuring Hawk Display

All the required configuration parameters are stored in *CONFIG_FOLDER*`/bin/hawkdisplay.cfg`. The following table describes various Hawk Display related configuration properties in easy-to-understand logical groups. The various groups are as follows:

Table 13 Hawk Display Configuration Properties

Logical Group	Parameters
TIBCO DataGrid Session	-as_session <listenurl> <discoverurl>
	-agent_name <agent name>
	-agent_domain <agent domain name>
	-as_transport_timeout <timeout in milliseconds>
	-as_receive_buffer_size <size in bytes>
	-as_worker_thread_count <numeric count>
	-as_virtual_node_count <numeric count>
TIBCO Rendezvous (RVD) Session	-rvd_session <service> <network> <daemon>
TIBCO Hawk Domain	-hawk_domain <TIBCO Hawk domain name>
Logging Information	-logdir <directory to store Hawk Display logs>
	-logmaxsize <maximum size of one Hawk Display log>
	-logmaxnum <maximum number of Hawk Display logs>
	-log_level <desired trace level for logs>
	-log_format <Hawk or ActiveEnterprise format>

Each of the parameters listed above are explained in more detail, in the following table.

Table 14 Hawk Display Configuration Parameter Details

Property	Mandatory	Default Value	Description
-hawk_domain	Yes	"default"	See page 35 for details.

Table 14 Hawk Display Configuration Parameter Details

Property	Mandatory	Default Value	Description
TIBCO DataGrid Transport Note: You can use the same configuration for AMI communication.			
-as_session	No	"" tibpgm:// 8989/	Comment this option if you are using TIBCO Rendezvous as the primary transport. The format is `-as_session` <*listen url*> <*discover url*>. See TIBCO DataGrid Transport on page 29 for more details. Use a semicolon (;) to indicate a null value, or use an empty string, for example: `-as_session "" tibpgm://8989/`
-as_transport_timeout	No	30000	Timeout (in milliseconds) used by transport for internal invocations
-as_receive_buffer_size	No	1000	Internal buffer size in bytes
-as_virtual_node_count	No	100	Virtual node count
-as_worker_thread_count	No	32	Worker threads
TIBCO Rendezvous Transport			
-rvd_session	No	7474 "" tcp:7474	TIBCO Rendezvous is the default primary transport for TIBCO Hawk 5.2.0. Comment this option if you are using TIBCO DataGrid or TIBCO EMS as the primary transport. The format is -rvd_session <service> <network> <daemon>. If you use this option, all three parameters must be present and separated by white space. Use a semicolon (;) to indicate a null value, or use an empty string, for example: -rvd_session 7474 "" tcp:7474
TIBCO EMS Transport See page 30 for details			
-ems_transport	No		Comment this option if you are using TIBCO DataGrid or TIBCO Rendezvous as the primary transport. Specifies the location of the EMS server. For example, -ems_transport tcp://server1:7222. Note: If EMS is configured as Transport, the ami_rvd_session parameter should be configured.

Table 14 Hawk Display Configuration Parameter Details

Property	Mandatory	Default Value	Description
TIBCO EMS SSL Parameters (In case EMS Server is configured for SSL communication). Refer to page 32 for details.			
-ssl_vendor	No		The name of the vendor of the SSL implementation. The valid choices are • j2se-default—Use this option when you want to use the default JCE bundled with the Java JRE. On IBM platforms (such as AIX), this option defaults to ibm. • entrust61—Use this option when you want to use the Entrust libraries. • ibm—On non-IBM platforms, this option can be used only if the IBM version of JCE is installed.
-ssl_ciphers	No		Cipher suite name
-ssl_no_verify_host	No		Indicate not to verify the EMS server
-ssl_trusted	No		File name of the server certificates. The file should be accessible locally/ shared drive
-ssl_no_verify_hostname	No		Indicates not to verify the name in CN field of the server certificate
-ssl_expected_hostname	No		If the -ssl_no_verify_host is not specified, the option -ssl_trusted has to be used. Along with the option-ssl_trusted specify either -ssl_no_verify_hostname or -ssl_expected_hostname.
-ssl_identity	No		Digital certificate
-ssl_private_key	No		Private key
-character_encoding	No		Character encoding to be used across the configured transport
Configuration for AMI communication AMI communication configuration options is used only in case of the Rendezvous or EMS transport. For TIBCO DataGrid, this will be ignored.			

Table 14 Hawk Display Configuration Parameter Details

Property	Mandatory	Default Value	Description
-ami_rvd_session	No	7474 127.0.0.1 tcp:7474	Configures the agent with a RVD session to be used to communicate with applications implementing the TIBCO Hawk Application Management Interface. Multiple -ami_rvd_session parameters may be specified. If none are specified, the RV session used for AMI is the primary session of the Self Module. # Note: When using TIBCO EMS transport for communication, 127.0.0.1 should be used as the network parameter. For example: ami_rvd_session 7474 127.0.0.1 tcp:7474
Logging			
-logdir	No		The directory in which to store log files generated by the TIBCO Hawk Display.
-logmaxsize	No		The maximum size of a rotating log files in Kbytes.
-logmaxnum	No		The maximum number of rotating log files
-log_level	No	7	Specifies the level of diagnostic information stored in the logs. The following are the logging levels: 4 - Indicates error level trace messages should be enabled 6- Indicates warning level trace messages should be enabled 7 - Indicates information level trace messages should be enabled 8 - Indicates debug level trace messages should be enabled 16 - Indicates AMI level trace messages should be enabled A value of zero turns all tracing off. A value of -1 turns all tracing on.
-log_format	No		The format for trace log messages
-display_file	No		Specify the location of the display file (.hdp) to be loaded by Hawk Display. This file contains the saved UI state of the Network Topology.
-security_policy	No		The fully qualified name of the Java class which implements security policy. For more information refer to Chapter 4, TIBCO Hawk Security Model, page 81.

Table 14 Hawk Display Configuration Parameter Details

Property	Mandatory	Default Value	Description
-variables	No		Properties file to specify variables file. The variables file can pass data to define external variables to be passed to rules for use in Rulebase configurations.

Chapter 3 Configuring the Rulebase Repository

This chapter describes TIBCO Hawk configuration modes and how configuration objects such as schedules and rulebases are managed. It also explains how to work with configuration objects in a Repository.

For more info about RuleBase, please refer to *TIBCO Hawk Concepts* guide.

Topics

Choosing a Configuration Mode

On your network, configuration objects such as schedules and rulebases are retrieved using either manual or automatic configuration. The mode you choose might depend on the number of TIBCO Hawk agents running on your network, and the number and complexity of configuration objects.

- With automatic configuration, all changes applied to the agent are permanent. In this mode, you automatically specify rulebases for the agent to load at startup by saving and deleting rulebases from the auto-configuration directory.
- With manual configuration, you manually configure which rulebases an agent loads by editing the rulebase map or adding them to the –rulebases configuration parameter. At startup, the agent searches one or more directories or Repositories to find the specified configuration object. All changes are temporary, until you decide to make them permanent by saving them to a file or a Repository. For more Information, see Using the Repository Option, page 77.

You specify a configuration mode and other parameters when starting a TIBCO Hawk agent, and the agent searches the configuration source for configuration objects. A configuration source is one or more directories on the agent machine, or one or more Repository names on the network.

This section describes how configuration objects are stored and retrieved.

Using Automatic Configuration

Automatic Configuration is the default mode for storing configuration objects. In Automatic Configuration mode, the configuration source is a single directory specified in the `-auto_config_dir` startup option. The agent locates the automatic configuration directory at startup and loads schedules first, then rulebases. Since all rulebases found are loaded, a rulebase map is not used in Automatic Configuration mode.

After an agent is started, in this mode additional rulebases can be loaded by deploying rulebases through WebConsole., or by invoking the `RuleBaseEngine:loadRuleBaseFromFile()` method. For more information on specific methods, see the *TIBCO Hawk Microagent Reference*.

Using Manual Configuration

In Manual Configuration mode, the configuration source is one of the following:

- One or more directories specified in the `config_path` parameter
- One or more Repositories specified in the `repository_path` parameter

These two options are mutually exclusive. If no path is specified, the current directory is used by default.

In Manual Configuration mode, the agent performs the following sequence of tasks to load startup rulebases:

1. At startup, the agent searches the configuration source for schedules, then for a rulebase map.
2. The agent searches the configuration source and loads all rulebases specified in the rulebase map.
3. The agent searches the configuration source for any additional rulebases specified in the `–rulebases` command line option and loads them.
4. If these rulebases have Include lists of other rulebases, the agent searches the configuration source for included rulebases and loads them.

After an agent is started in Manual Configuration mode, additional rulebases can be loaded by deploying rulebases through WebConsole or by invoking the `RuleBaseEngine: loadRuleBase`() or

`RuleBaseEngine:loadRuleBaseFromFile`() methods. For more information on `RuleBaseEngine`() methods, see the *TIBCO Hawk Microagent Reference*.

If a rulebase loaded using one of these procedures has an Include list, included rulebases are also loaded.

Using the Configuration Path Option

With the Configuration Path option, the configuration source is one or more directories specified in `-config_path`. With this option, any rulebases loaded by the agent are not written out to a local cache. The only rulebases an agent loads at startup are those specified in the rulebase map, by the `–rulebases` parameter, and in the Include lists of those rulebases.

Using the Repository Option

With the Repository option, the configuration source is one or more Repositories specified in `-repository_path`. All agents that use the same Repository load all changes saved to the Repository on startup.

A Repository is a network application that distributes configuration objects to agents. Users send new and updated objects to the Repository, and it responds to configuration requests from TIBCO Hawk agents. You specify a Repository for an agent to use with the –`repository_path` parameter, and one or more Repository names. A particular agent on the network hosts each Repository and has a Repository microagent with methods for accessing configuration objects. For more information on microagents, see the *TIBCO Hawk Microagent Reference*.

In addition, you can configure an agent to maintain a backup of configuration objects in local cache with the -`repository_cache` parameter. This feature is useful for implementing fault-tolerance and for minimizing unnecessary object transfer across the network. Agents compare locally cached rulebases with those stored in the Repository, and retrieve only new or updated objects. If a Repository defined in the -`repository_path` option for an agent does not respond to a request within 15 seconds, the agent searches the local cache directory for the configuration object.

Understanding Configuration Scenarios

Complicated scenarios can result from the various rulebase tasks and configuration modes. Table 7 describes some of these scenarios and their consequences in Manual and Automatic Configuration modes.

Table 15 Configuration Scenarios

Action	Manual Configuration	Automatic Configuration
Specify startup rulebases.	You specify one or more directory paths or Repositories for the TIBCO Hawk agent to find rulebases to load at startup. You can explicitly state the names of additional rulebases the TIBCO Hawk agent should load, as well as a rulebase map.	You specify an auto-configuration directory, and the TIBCO Hawk agent loads all files in that directory at startup.
Create a rulebase and send it to an agent.	The rulebase exists only in memory. You must explicitly save the rulebase to a file or Repository if you want it to exist after the agent process ends. The agent does not load the rulebase at startup unless you add the rulebase name to the rulebase map, the explicit list of startup rulebases, or an Include list.	The rulebase is created in memory and also copied to a file in the auto-configuration directory. Because the file is in the auto-configuration directory, it is reloaded at startup.
Change a rulebase and apply the change to an agent.	The changes are applied only to the copy of the rulebase in memory. You must explicitly save your changes to a rulebase file or Repository to save them after the agent process ends.	The rulebase is changed in memory, and the rulebase file in the auto-configuration directory is changed.

Table 15 Configuration Scenarios (Cont'd)

Action	Manual Configuration	Automatic Configuration
Rename a rulebase and apply the change to an agent.	The name is changed only in memory. You must explicitly save the rulebase to a file or Repository to save the new name after the agent process ends. To load the rulebase with the new name on startup, you must modify the rulebase map, explicit list of startup rulebases, or Include list.	The name is changed in memory, the old rulebase file (with the old name) has been deleted, and the new rulebase file has been saved (with the new name) in the auto-configuration directory.
Delete a rulebase and apply the change to an agent.	The rulebase is deleted only from memory. The rulebase file is not deleted, and it will be reloaded at startup if it is specified in the rulebase map, explicit list of startup rulebases, or Include list.	The rulebase is deleted from memory, and the rulebase file is deleted from the auto-configuration directory.
Send a rulebase across the network to an agent.	The rulebase is copied to memory only on the machine you send it to. To make the change permanent, you must copy the rulebase file to that machine or send it to a Repository; then modify the rulebase map, explicit list of startup rulebases, or Include list.	The rulebase is copied to memory on the machine you send it to, and copied to a file in that agent's auto-configuration directory. Because the file is in the auto-configuration directory, it is reloaded at startup.
Delete a rulebase across the network for an agent that has this type of configuration.	You delete the rulebase from memory only on that machine. To permanently remove a rulebase from multiple agents you must remove it from the rulebase map, explicit list of startup rulebases, and Include lists.	You delete the rulebase from memory; you also delete the rulebase file in the agent's auto-configuration directory; and it is not reloaded at startup.
Load a rulebase using the `RuleBaseEngine: loadRuleBase()` method.	The agent searches the list of configuration path directories or Repositories for rulebases with the specified name.	The method invocation fails.
Manually copy a rulebase file into the auto-configuration directory.	Nothing will happen, and the rulebase is not loaded at startup.	Not applicable.

Chapter 4 TIBCO Hawk Security Model

This chapter discusses the security models for TIBCO Hawk system.

Topics

Trusted Security Model

TIBCO Hawk uses Trusted Security model to guarantee that only authorized users can perform restricted actions.

The Trusted model uses an ASCII file as a simple yet effective entitlement server. This has the benefit of being easily distributed to all nodes, making it a very scalable mechanism. A scan of the ASCII file for information about the user determines if the request will be granted.

Users are explicitly granted or denied access through the access control file. A user who is not in this file is not allowed to perform any operations on the TIBCO Hawk system. Access control information is in a plain ASCII file located in the *TIBCO_HOME*`\hawk\<version>\examples\security` folder.

Copy this file to *CONFIG_FOLDER*\security manually. See Access Control File, page 86, for more details.

Trusted Model

The Trusted model provides a simple yet effective mechanism for addressing authorization concerns. It addresses security issues as follows:

- **Authentication**: the Trusted security model does not guarantee the authenticity of the request.
- **Integrity**: the Trusted security model does not guarantee the integrity of the request.
- **Authorization**: the Trusted security model guarantees that only authorized users can perform restricted actions.
- **Privacy**: the Trusted security model does not address the privacy of the request. All requests are sent using plain text.

Authorization

The Trusted model uses an ASCII file as a simple yet effective entitlement server. This has the benefit of being easily distributed to all nodes, making it a very scalable mechanism. A scan of the ASCII file for information about the user determines if the request will be granted.

Users are explicitly granted or denied access through the access control file. A user who is not in this file is not allowed to perform any operations on the TIBCO Hawk system. Access control information is in a plain ASCII file located in `the` *HAWK_HOME*`/examples/security` folder.

Copy this file to *CONFIG_FOLDER*`/security` manually. See Access Control File, page 86, for more details.

Logging

All trusted requests (both Trusted and `TrustedWithDomain`) can be logged to rolling log files in a directory of your choice.

The current log file is named `Trusted.log`. When it reaches the maximum size (`size`), it is closed and renamed `Trusted`*1*`.log`, and a new `Trusted.log` is started. When the number of logs exceeds the maximum (`n`), log entries roll over to reuse the oldest log file.

To activate logging, add the following line to the access control file:

<*LogService*> `-log_dir` <*logDir*> `-log_max_size` <*size*> `-log_max_num` <*n*>

where:

Option	Description
`logDir`	The directory where the log file is saved. Make sure this directory exists before you activate logging.
`size`	The maximum size of the rolling log file in KB. The suffix `m` or `M` can be used for indicating MB.
`n`	The maximum number of rolling log files.

Example Log File Entries

This is an example log entry for an authorized request:

```
Tue Dec 31 11:14:13 EST 2002: Trusted operation:
userID=HAWK-TRUSTDMN\hawkuser, node=hawkuser-DT:none:default,
microagent=COM.TIBCO.hawk.microagent.SysInfo, method=
getOperatingSystem.
```

This is an example of an entry for an unauthorized request:

```
Tue Dec 31 11:19:54 EST 2002: Trusted operation: userID=
HAWK-TRUSTDMN\hawkuser, node=hawkuser-DT:none:default, microagent=
COM.TIBCO.hawk.microagent.Repository, method= getRBMap -
permission denied.
```

Using both Trusted and TrustedWithDomain

An agent using the Trusted or TrustedWithDomain security model allows users with either Trusted or TrustedWithDomain to access the agent.

- To allow access to a user who starts Hawk Display (or the Console API application) in Trusted security mode, the entry for <*user*> specified in the agent's `Trusted.txt` or `TrustedWithDomain.txt` *should not* include the domain of the user who actually starts Hawk Display (or the Console API application).
- To allow access to a user who starts Hawk Display in TrustedWithDomain security mode, the entry for <*user*> specified in the agent's `Trusted.txt` or `TrustedWithDomain.txt` *should* include the domain of the user who actually starts Hawk Display.

To Use the Trusted Model

Two sample access control files are included with TIBCO Hawk.

- `Trusted.txt` can be used on UNIX or Microsoft Windows. It is used when the command line specifies `Trusted`.
- `TrustedWithDomain.txt` is for use on Microsoft Windows only, and is used when the command line specifies `TrustedWithDomain`.

The access control files, `Trusted.txt` and `TrustedWithDomain.txt`, are described in the next section.

To use the Trusted model:

If you have multiple Hawk agents running on a machine and these Hawk agents, in turn, belong to different Hawk domains, you can specify separate access control files for each domain.

1. For each Hawk domain, create a directory:

   CONFIG_FOLDER`/hawk/domain/<domain-name>/security` where *<domain-name>* is the name of the Hawk domain.

2. Provide a remote `Trusted.txt` file to configure a security URL on Agent,

   — add/append the following system parameter to `java.extended.properties` in `tibhawkagent.tra`

   `-Dhawk.security_file_url=f`**`ile:///D:/temp/Trusted.txt`**

   Or

   `-Dhawk.security_file_url=`http://<*hostname:port*>/Trusted.txt

   The Agent always gives precedence to the local file, if found in hawk/domain folder.

3. Modify the appropriate sample access control file, `Trusted.txt` or `TrustedWithDomain.txt`, according to the requirements of your system.

4. Save the modified file in the directory you created, without changing the filename. The program automatically searches for the access control file in this directory.

5. Ensure that the `security_policy` parameter in Hawk agent configuration is set to one of the following, before starting TIBCO Hawk Agent and Display/WebConsole:

   `COM.TIBCO.hawk.security.trusted.Trusted`

   or

```
COM.TIBCO.hawk.security.trusted.TrustedWithDomain
```

The Trusted model is now in effect. The security policy will stay in force as long as the process is running.

Access Control File

To store access control information, the Trusted model uses an ASCII file. Two sample access control files are included with TIBCO Hawk: `Trusted.txt` and `TrustedWithDomain.txt`.

Sample access control files are shipped with the TIBCO Hawk software, in the directory *HAWK_HOME*`/examples/security/`.

Trusted.txt

This access control file can be used with UNIX or with Microsoft Windows XP.

The user for authorization is the login ID of the TIBCO Hawk Display owner.

TrustedWithDomain.txt

This file can only be used with Microsoft Windows XP, and only when specified in the command used to start TIBCO Hawk agent and Display, as in `-security_policy COM.TIBCO.hawk.security.trusted.TrustedWithDomain`.

The user is the login ID and the domain where the user is logged on. For example, for user1 in domainX, the user is <*domainX*>`\user1`.

Group Operations

A group operation effectively performs a method invocation simultaneously on all of the specified target microagents. It is useful for affecting a group of microagents in a single operation. There are two kinds of group operation: network query and network action.

Wildcard characters + and * affect permissions on group operations and point-to-point invocations as shown in Access Control File, page 86.

- Use + in node access to allow access to group operations.
- Use * in node access to allow access to point-to-point invocations.
- Use + in method access to allow access to all INFO and ACTION methods.
- Use * in method access to allow access.

Access Control File Conventions

The access control file uses the following conventions to grant or deny access.

- Explicit access for a particular resource implicitly denies access to all other resources in the same class. The defined classes are nodes, microagents, and methods.
- Explicit restriction for a particular resource implicitly allows access to all other resources in the same class, provided they have been explicitly granted. The defined classes are nodes, microagent, and methods.
- Permissions always default to the most restrictive case.

File Settings for the Trusted Model

This table presents how individual restrictions and permissions are defined for nodes, microagents, and methods. Individual node, microagent, and method names can be specified. In addition, wildcard characters can be used as shown in the table.

Each individual setting is represented by one line in the access control file. Complex permissions and restrictions can be defined using sets of related lines. For example, you can give a user access to all methods on a node in one line, then in the following line, restrict that user's access to one of those methods. See Disable Custom Microagent, page 90, for further details.

Permissions are granted to a user using the user name. Restrictions are defined by prefixing a bang (!) character to the user name, as shown in the table.

Table 16 Access Control File Settings

Effect	User	Node	Microagent	Method
Full Access Grants full access to all methods on all microagents on all nodes, including group operations.	*<user>*			
Full Restriction Denies access to all methods on all microagents on all nodes, including group operations	! *<user>*			
Node Access: All Nodes Grants point-to-point and group operation invocation access to all methods on all microagents.	*<user>*	+		

Table 16 Access Control File Settings (Cont'd)

Effect (Cont'd)	User	Node	Microagent	Method
Node Access: All Nodes Grants point-to-point invocation access to all methods on all microagents. Does not grant group operation invocation access.	*<user>*	*		
Node Access: Named node Grants invocation access to all methods on all microagents on the named node. You can add several lines for one user to provide access to a set of nodes.	*<user>*	*<node>*		
Node Restriction: All Nodes Denies point-to-point and group operation invocation access to all methods on all microagents.	! *<user>*	*		
Node Restriction: All Nodes Denies group operation invocation access to all methods on all microagents. (Does not deny point-to-point operation invocations.)	! *<user>*	+		
Node Restriction: Named node Denies invocation access to all methods on all microagents on the named node. You can add several lines for one user to provide access to a set of nodes.	! *<user>*	*<node>*		
Microagent Access Grants access to all methods on the specified microagent. Wildcard characters can be used in place of a specific node name. See *Node Access*.	*<user>*	*<node>*	*<microagent>*	
Microagent Restriction Denies access to all methods on the specified microagent. Wildcard characters can be used in the Node columns. See *Node Restriction* above.	! *<user>*	*<node>*	*<microagent>*	

Table 16 Access Control File Settings (Cont'd)

Effect (Cont'd)	User	Node	Microagent	Method
Method Access Grants access to all `ACTION` and `INFO` methods on the specified microagent (but not `ACTIONINFO` methods). Wildcard characters can be used in the Node and Microagent columns.	*<user>*	*<node>*	*<microagent>*	+
Method Access Grants access to all `INFO` methods on the specified microagent (but not `ACTION` or `ACTIONINFO` methods). Wildcard characters can be used in the Node and Microagent columns.	*<user>*	*<node>*	*<microagent>*	*
Method Access Grants access to the specified method on the specified microagent. Wildcard characters can be used in the Node and Microagent columns.	*<user>*	*<node>*	*<microagent>*	*<method>*
Method Restriction Denies access to all methods on the specified microagent. Wildcard characters can be used in the Node and Microagent columns.	! *<user>*	*<node>*	*<microagent>*	*
Method Restriction Denies access to all `ACTION` and `ACTION_INFO` methods on the specified microagent. Wildcard characters can be used in the Node and Microagent columns.	! *<user>*	*<node>*	*<microagent>*	+

Table 16 Access Control File Settings (Cont'd)

Effect (Cont'd)	User	Node	Microagent	Method
Method Restriction Denies access to the specified method on the specified microagent. Wildcard characters can be used in the Node and Microagent columns.	!<*user*>	<*node*>	<*microagent*>	<*method*>

Disable Custom Microagent

The Custom microagent can be disabled by leveraging the Security TrustModel supported by TIBCO Hawk. Users are explicitly granted or denied access through the access control file.

The following steps describe how to disable Custom microagent execution.

1. If multiple Hawk agents are running on a machine and these Hawk agents in turn belong to different Hawk domains, specify separate access control files for each domain.

   For each Hawk domain create a directory *HAWK_HOME*`/domain/<domain-name>/security where <domain-name>` is the name of the Hawk domain.

2. According to the requirements of your system, copy *HAWK_HOME*`/examples/security/Trusted.txt` or *HAWK_HOME*`/examples/security/TrustedWithDomain.txt` to *CONFIG_FOLDER*`/security/`.

3. Modify the file to add the following lines:

   ```
   * * **
   none        *      COM.TIBCO.hawk.microagent.Custom                +
   ```

   The first line grants access to all users, on all nodes, and for all microagent methods.

   The second line grants access only to the user `none`, on all nodes for the Custom microagent, where `none` is a non-existent user. This effectively prevents anyone from executing the Custom microagent.

4. Ensure that the `security_policy` parameter in Hawk agent configuration is set to one of the following, before starting TIBCO Hawk Agent and Display/WebConsole::

   `COM.TIBCO.hawk.security.trusted.Trusted` or
   `COM.TIBCO.hawk.security.trusted.TrustedWithDomain`

Trusted.txt and TrustedWithDomain File Examples

The following example files demonstrates how a `Trusted.txt` and `TrustedWithDomain.txt` access control file might be constructed. The permissions and restrictions defined in this file are explained in the previous section.

Explanation of Settings

The settings in the example files below provide access to the following users as shown here:

- Grant `user1` point-to-point access to all methods on all microagents, except:
  - All `ACTION` methods on the `Custom` microagent on all nodes.
  - The specified methods on the `Repository` microagent on all nodes.
  - The specified methods on the `RuleBaseEngine` microagent on `nodeA`.
- Grant `user2` point-to-point and group operation invocation access to all methods on all microagents, except:
  - All `ACTION` methods on the `Custom` microagent on all nodes.
  - All `ACTION` methods on the `Repository` microagent on all nodes.
  - All `ACTION` methods on the `RuleBase` microagent on all nodes.
- Grant `user3` point-to-point and group operation invocation access to all methods on all microagents on all nodes, except:
  - group operation invocation access to all `ACTION` methods on the `RuleBase` microagent.
- Grant `user4` full access to all methods on all microagents on `nodeB`.
- Grant `user5` point-to-point access to all `INFO` methods on all microagents on all nodes.

Trusted.txt Example File

```
#
# This file is used by agent running with COM.TIBCO.hawk.security.trusted.Trusted
# security model.
#
#
# Explanation of Settings:
#
# Grant "user1" point-to-point access to all methods on all Microagents, EXCEPT
#       - all ACTION methods on the Custom microagent on all nodes.
#       - the specified methods on the Repository microagent on all nodes.
#       - the specified methods on the RuleBaseEngine microagent on "nodeA".
```

```
#
# Grant "user2" point-to-point and network access to all methods on all
# Microagents, EXCEPT
#       - all ACTION methods on the Custom microagent on all nodes.
#       - all ACTION methods on the Repository microagent on all nodes.
#       - all ACTION methods on the RuleBase microagent on all nodes.
#
# Grant "user3" point-to-point and network access to all methods on all
# Microagents on all nodes, EXCEPT
#       - network access to all ACTION methods on the RuleBase microagent.
#
# Grant "user4" full access to all methods on all microagents on nodeB.
#
# Grant "user5" point-to-point access to all INFO methods on all microagents
# on all nodes.
#
#
# Wildcard characters + and * usage:
#
# - Use + in node access for allowing access to group operations.
# - Use * in node access for allowing access to  point-to-point invocations.
# - Use + in method access for allowing access to all INFO and ACTION methods.
# - Use * in method access for allowing access to all INFO methods only.
#
#
# File format:
#
# user     node                  microagent                    method
#         access                   access                     access
#           &                        &                          &
#       restrictions            restrictions               restrictions
#
user1         *
!user1        *      COM.TIBCO.hawk.microagent.Custom            +
!user1        *      COM.TIBCO.hawk.microagent.Repository     addRuleBase
!user1        *      COM.TIBCO.hawk.microagent.Repository     updateRuleBase
!user1        *      COM.TIBCO.hawk.microagent.Repository     deleteRuleBase
!user1        *      COM.TIBCO.hawk.microagent.Repository     setSchedules
!user1        *      COM.TIBCO.hawk.microagent.Repository     setRBMap
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine addRuleBase
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine updateRuleBase
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine deleteRuleBase
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine loadRuleBase
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine unloadRuleBase
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine loadRuleBaseFromFile
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine setSchedules
!user1      nodeA    COM.TIBCO.hawk.microagent.RuleBaseEngine setRBMap

user2         +                        *                        +
!user2        *      COM.TIBCO.hawk.microagent.Custom            +
!user2        *      COM.TIBCO.hawk.microagent.Repository        +
!user2        *      COM.TIBCO.hawk.microagent.RuleBaseEngine    +

user3
!user3        +      COM.TIBCO.hawk.microagent.RuleBaseEngine    +

user4       nodeB
```

```
user5        *                          *                              *

#
# To activate logging, uncomment the following:
# <LogService>  -log_dir logDir  -log_max_size size  -log_max_num n
#
# where: logDir is the directory where the log file will be stored
#        size is the maximum size of a rotating log file in KB.
#          A suffix m or M  can be used for indicating MB .
#        n is the maximum number of rotating log files.
```

TrustedWithDomain.txt Example File

```
#
# This file is used by agent running with
# COM.TIBCO.hawk.security.trusted.TrustedWithDomain security model.
#
# To allow a user running with COM.TIBCO.hawk.security.trusted.TrustedWithDomain
# security model on Windows platform to access this agent, the user
# specified should include the domain of the user.
# For example, for user1 in domainX, the user should be specified as
# "domainX\user1".
#
# Note that agents using the TrustedWithDomain security model also allow
# users running with COM.TIBCO.hawk.security.trusted.Trusted security model
# to access this agent.  For these users, the domain should not be
# included in the user.
#
#
# Explanation of Settings:
#
# Grant "user1" point-to-point access to all methods on all Microagents, EXCEPT
#- all ACTION methods on the Custom microagent on all nodes.
# - the specified methods on the Repository microagent on all nodes.
# - the specified methods on the RuleBaseEngine microagent on "nodeA".
#
# Grant "user2" point-to-point and network access to all methods on all
# Microagents, EXCEPT
#- all ACTION methods on the Custom microagent on all nodes.
#- all ACTION methods on the Repository microagent on all nodes.
#- all ACTION methods on the RuleBase microagent on all nodes.
#
# Grant "user3" point-to-point and network access to all methods on all
# Microagents on all nodes, EXCEPT
#- network access to all ACTION methods on the RuleBase microagent.
#
# Grant "user4" full access to all methods on all microagents on nodeB.
#
# Grant "user5" point-to-point access to all INFO methods on all microagents
# on all nodes.
#
#
```

```
# Wildcard characters + and * usage:
#
# - Use + in node access for allowing access to group operations.
# - Use * in node access for allowing access to  point-to-point invocations.
# - Use + in method access for allowing access to all INFO and ACTION methods.
# - Use * in method access for allowing access to all INFO methods only.
#
#
# File format:
#
# user     node                  microagent                    method
#         access                   access                     access
#           &                        &                          &
#       restrictions            restrictions               restrictions
#
user1        *
!user1       *     COM.TIBCO.hawk.microagent.Custom             +
!user1       *     COM.TIBCO.hawk.microagent.Repository     addRuleBase
!user1       *     COM.TIBCO.hawk.microagent.Repository     updateRuleBase
!user1       *     COM.TIBCO.hawk.microagent.Repository     deleteRuleBase
!user1       *     COM.TIBCO.hawk.microagent.Repository     setSchedules
!user1       *     COM.TIBCO.hawk.microagent.Repository     setRBMap
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine addRuleBase
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine updateRuleBase
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine deleteRuleBase
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine loadRuleBase
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine unloadRuleBase
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine loadRuleBaseFromFile
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine setSchedules
!user1     nodeA   COM.TIBCO.hawk.microagent.RuleBaseEngine setRBMap

user2        +                        *                          +
!user2       *     COM.TIBCO.hawk.microagent.Custom             +
!user2       *     COM.TIBCO.hawk.microagent.Repository         +
!user2       *     COM.TIBCO.hawk.microagent.RuleBaseEngine     +

user3
!user3       +     COM.TIBCO.hawk.microagent.RuleBaseEngine     +

user4      nodeB

user5        *                        *                          *

#
# To activate logging, uncomment the following:
# <LogService>  -log_dir logDir  -log_max_size size  -log_max_num n
#
# where: logDir is the directory where the log file will be stored
#        size is the maximum size of a rotating log file in KB.
#          A suffix m or M  can be used for indicating MB .
#        n is the maximum number of rotating log files.
```

Running with a localhost rvd

As a further precaution, AMI applications will be required to specify `localhost` as part of the TIBCO Rendezvous daemon parameter in order to prevent remote connections to its `rvd` daemon. Instructions to do this for UNIX and Microsoft Windows platforms are given below.

UNIX Procedure

1. Add a command to start the localhost `rvd` prior to starting any TIBCO Hawk processes, as follows:

   `rvd -listen tcp:127.0.0.1:<daemon>`

2. Modify `hawkagent.cfg` and `hawkhma.cfg` and, in the `-rvd_session` parameter, specify the following:

   `tcp:127.0.0.1:<daemon>`

Microsoft Windows Procedure

Use `rvntsreg.exe` to install a localhost `rvd` as a Microsoft Windows service.

1. Create an `rvd` service using `rvntsreg.exe`. Use the following parameters:

   `-listen tcp:127.0.0.1:<daemon>`

2. Make all TIBCO Hawk services dependent upon this new `rvd` service.
3. In the Configuration Utility, modify the daemon parameter to the following:

`tcp:127.0.0.1:<daemon>`

Trusted Security Sample Implementation

The sample implements the Trusted model describes in Trusted Model. This implementation is similar to the default security model provided by Hawk.

Code

The sample implementation for Trusted Security is provided in the `/examples/security` directory.

Compile

While compiling the security sample, your CLASSPATH must include `console.jar` from TIBCO Hawk `lib` folder.

Run

To enable the security for the Hawk Agent and Display, use `-security_policy`.

To use a specific security policy, specify the name of the security policy class on each machine where you want to use the policy. Do not enter the file extension. For example, if your Java class file is named `ASecurityPolicy.class` you would specify `ASecurityPolicy`.

Ensure that this class file is bundled in a jar and placed in *HAWK_HOME*`/lib/ext`.

Chapter 5

Using the TIBCO Hawk Messaging Microagent

The Messaging microagent provides methods to send and receive messages using either TIBCO Rendezvous or TIBCO EMS. This chapter gives an overview of this microagent and describes how to configure and use the microagent.

Topics

Overview

The Messaging microagent provides methods to send and receive messages using either TIBCO Rendezvous or TIBCO EMS. For a detailed description of these methods refer *TIBCO Hawk Method Reference Guide*.

Using XML configuration files, you can specify the subject and message structure to be sent or received for each method. If transport parameters are not specified in the configuration files, the transport specified for TIBCO Hawk Agent will be used. If using RVCM, the transport parameters have to be specified in the `method` element for each method. If using EMS as the default transport, only messages send or received with JMS `topic` are supported.

A set of sample configuration files are copied to the installation area in the `samples/msghma` directory. These files contain sample methods, as well as several default method definitions that are helpful for performing routine tasks. The configuration file, msghma.xml, used by the default Messaging microagent is located in the `TIBCO_CONFIG_FOLDER/tibco/cfgmgmt/hawk/bin` directory. You can configure additional Messaging microagents by using the TIBCO Hawk plug-in microagent mechanism. To configure additional Messaging microagents:

1. Copy the .hma file for the microagent to the plugin directory. The plugin directory is specified by the -hma_plugin_dir option in the `hawkagent.cfg` file. If using the Configuration Utility, the plugin directory is specified by the **Plugin** field in the **Agent** tab.
2. Make sure the xml file specified in the hma file is present in the expected location.
3. Re-start the TIBCO Hawk Agent.

Do not edit or delete the `msghma.xml` file used by the default Messaging microagent.

Configuration files of the TIBCO Hawk Rendezvous Messaging Adapter can be used as-is. However, any non-applicable attributes will be ignored and if more than one microagent is defined, only the first microagent configuration will be loaded.

Configuration File Elements and Attributes

The `msghma.dtd` file defines the grammar for all the constructs used in an microagent XML configuration file. With this file included, the XML configuration file can be syntax checked using any validating XML parser.

The following tables describe the attributes that can be set in an XML configuration file:

- TIBHAWK_AMI Element Attributes
- microagent Element Attributes
- method Element Attributes
- inputParameter Element Attributes
- valueChoices Element Attribute
- legalValueChoices Element Attribute
- constantParameter Element Attributes
- outputParameter Element Attributes

The top level element, TIBHAWK_AMI describes transport parameters and tracing attributes that can applied to all microagents. Some of the attributes can be redefined for an individual method in the `method` element.

You can specify different transport parameters for each method as attributes of the `method` element. The attributes of the `method` element take precedence over those specified by the `microagent` or `TIBHAWK_AMI` elements.

Table 17 TIBHAWK_AMI Element Attributes

Attribute	Type	Description
dtd_type	enumeration	REQUIRED. (MSGHMA).
dtd_version	enumeration	REQUIRED. (1.0).
xml_file_version	string	IMPLIED. Can be used to identify the version of this XML file. It must be in the form of *<major>.<minor>.<update>*, for example, `1.1.0`.

Table 17 TIBHAWK_AMI Element Attributes

Attribute	Type	Description
ami_rvd_service ami_rvd_network ami_rvd_daemon	string	IMPLIED. These attributes together configure the TIBCO Rendezvous parameters for creating an TIBCO Rendezvous transport for the communication with the TIBCO Hawk agent. These attributes are maintained for backward compatibility only and is not used.
rvService rvNetwork rvDaemon	string	IMPLIED. These attributes together configure the TIBCO Rendezvous parameters for creating a TIBCO Rendezvous transport.
ems_url ems_uid ems_pw	string	These attributes together configure the TIBCO EMS parameters for creating a TIBCO EMS transport.
ssl_trace ssl_debug_trace ssl_vendor ssl_trusted ssl_expected_hostname ssl_identity ssl_identity_encoding ssl_password ssl_verify_hostname ssl_verify_host ssl_cipher	string	These attributes are used when using SSL to connect to the EMS server. When specifying values for attributes `ssl_verify_hostname` and `ssl_verify_host`, valid values are `enabled` and `disabled`. When specifying values for attributes for `ssl_trace` and `ssl_debug_trace`, valid values are `true` and `false`.

Table 17 TIBHAWK_AMI Element Attributes

Attribute	Type	Description
cmName cmLedgerName	string	IMPLIED. These attributes together form an RVCM (TIBCO Rendezvous Certified Message) transport. All methods in this microagent that use RVCM will use this RVCM transport. cmName is the RVCM reusable name which represents a persistent correspondent. If cmLedgerName is specified, it must be a valid file name. The cmLedgerName attribute is ignored if cmName is not specified.
rvAdvisoryTraceLevel	enumeration	IMPLIED. One of: ERROR, WARN or INFO. Specifies the lowest level of TIBCO Rendezvous advisory messages to be tracked by the microagent. For example, if WARN is specified, then all WARN or ERROR advisory messages are tracked by this microagent. The default value WARN. If an advisory message not tracked by the microagent is received, it will be sent to the microagent standard output if of class WARN or ERROR and discarded if of class INFO.
rvAdvisoryForward	string	IMPLIED. Either true or false. Specifies whether a tracked advisory message will be sent to the TIBCO HAWK Agent as an unsolicited message. The default is false, which means tracked advisory messages are logged to the adapter's log file.
ftGroupName	string	IMPLIED. Specifies the name of the TIBCO Rendezvous fault tolerance group. This attribute is maintained for backward compatibility only and is not used.

Table 17 TIBHAWK_AMI Element Attributes

Attribute	Type	Description
ftWeight ftActiveGoal ftHeartbeatInterval ftPrepInterval ftActiveInterval	string	IMPLIED. These attributes together define TIBCO Rendezvous fault tolerance parameters. The default values are: • ftWeight 100. • ftActiveGoal 1 • ftHeartbeatInterval 30 seconds • ftPrepInterval 60 seconds These attributes are used only if the ftGroupName is specified. These attributes are maintained for backward compatibility only and are not used.
traceFile traceFileMaxSize traceFileMaxNumber traceLevel	string	IMPLIED. These attributes together specify the tracing parameters. If not defined, tracing is sent to stdout. traceFile. Absolute pathname of the trace file. traceFileMaxSize. Maximum size (in KB) the trace file is allowed to grow. traceFileMaxNumber. Maximum number of roll over trace files to be maintained. traceLevel. Starting trace level.

At least one method must be defined for the microagent.

Table 18 microagent Element Attributes

Attribute	Type	Description
name	string	REQUIRED. Name for the microagent.
help	string	IMPLIED. Help text describing the microagent. Each `help` attribute is paired with a `name` attribute. If not defined, the `name` attribute value is used as the help text.

Table 18 microagent Element Attributes

Attribute	Type	Description
displayName	string	IMPLIED. Name that is displayed in the TIBCO Hawk Display.
rvService, rvNetwork, and rvDaemon or ems_url ems_uid ems_pw ssl_trace ssl_debug_trace ssl_vendor ssl_trusted ssl_expected_hostname ssl_identity ssl_private_key ssl_password ssl_verify_hostname ssl_verify_host ssl_cipher	string	IMPLIED. These attributes together configure the transport parameters for the microagent. If any of the attributes are specified differently from those specified for the TIBHAWK_AMI element, a new rvd transport is created and all the methods belong to this microagent will use the new transport. If the attributes are not specified, the values specified for the corresponding attributes associated with the TIBHAWK_AMI element are used. When specifying values for attributes `ssl_verify_hostname` and `ssl_verify_host`, valid values are `enabled` and `disabled`. When specifying values for attributes for `ssl_trace` and `ssl_debug_trace`, valid values are `true` and `false`.

Table 18 microagent Element Attributes

Attribute	Type	Description
cmName cmLedgerName	string	IMPLIED. These attributes together form an RVCM (TIBCO Rendezvous Certified Message) transport. All methods in this microagent that use RVCM will use this RVCM transport. cmName is the RVCM reusable name which represents a persistent correspondent. If cmLedgerName is specified, it must be a valid file name. The cmLedgerName attribute is ignored if not specified.
maxThreads	string	IMPLIED. Defines the maximum number of threads a microagent can have to perform method invocations in parallel. The default value is 1. This attribute is maintained for backward compatibility only and is not used.
traceFile traceFileMaxSize traceFileMaxNumber traceLevel	string	IMPLIED. These attributes together specify the tracing parameters for this microagent. If not defined, tracing is sent to stdout. The attributes override the corresponding attributes associated with the TIBHAWK_AMI element. • traceFile. Absolute pathname of the trace file. • traceFileMaxSize. Maximum size (in KB) the trace file is allowed to grow. • traceFileMaxNumber. Maximum number of roll over trace files to be maintained. • traceLevel. Starting trace level. These attributes are maintained for backward compatibility only and are not used.

If a method has parameters, the method must have at least one input or constant

parameter. If a method has a return value, it must have at least one output parameter.

Table 19 method Element Attributes

Attribute	Type	Description
name	string	REQUIRED. The method name.
help	string	IMPLIED. Help text describing the method. Each `help` attribute is paired with a `name` attribute. If not defined, the `name` attribute value is used as the help text.
index	string	IMPLIED. If a method returns more than one row of information, the index attribute must be specified with the name of the output parameter which can uniquely identify each row. If multiple output parameters are required to uniquely identify a row (that is, a composite index), the index attribute must be specified with parameter names separated by commas.
subject	string	IMPLIED. Specifies the subject to subscribe or to publish. For a subscription subject, the subject name segments may contain "*", and the last segment may be ">". The attribute is required if the first input parameter is not named **`Subject`** or if the method publishes RVCM messages.
timeout	string	IMPLIED. The `timeout` attribute is meaningful (and required) only for RPC methods. If the timeout interval expires and no reply is received, the first return `timeout` parameter is set to true. Note that the thread executing the RPC is blocked while waiting for the reply. If a microagent expects multiple simultaneous RPC calls, the `maxThreads` attribute for the microagent must be adjusted higher accordingly.

Table 19 method Element Attributes

Attribute	Type	Description
heartbeatInterval	string	IMPLIED The `heartbeatInterval` attribute (in seconds) is meaningful only for `publisher` methods. If this `heartbeatInterval` attribute exists, in additional to the normal behavior, at every heartbeat interval, a message is published. Note that this kind of method can not have inputParameters; only constantParameter's can be used.
handlerType	enumeration	REQUIRED. One of: P, SU, RPC, DS, T or S Specifies how a method should be handled: • P. Publishers sending messages. • SU. Subscribers receiving messages. • RPC. RPC client sending messages, then waiting for the reply. • DS. Used for the factory provided methods `tibrvlisten`, `tibrvecho` and `dynamicSubscribe`. • T. Used for the factory provided method `timeoutTest` only. • S. Used for factory provided system methods, which include `reviewLedger` and `shutdown`. For subscriber and RPC methods (with `handlerType SU` and `RPC` respectively) the specified fields must have a one to one correspondence with the method's return (output) parameters. For publisher methods (with `handlerType P` and `RPC` respectively), the message publish subject and all fields must be specified in the message.
useCM	string	IMPLIED. If set to true, the method is an RVCM publisher or subscriber. If not specified, RVCM is not used.

Table 19 method Element Attributes

Attribute	Type	Description
cmListenerList	string	IMPLIED. Only meaningful if the `useCM` attribute is set to `true` and the method `handlerType` value is `P` (is a publisher method). The cmListenerList attribute specifies a list of `cmName` names in the form: *<name1>, <name2>, <name3>, ...*

For methods with `handlerType` `SU`, `P`, or `RPC`, if the first `inputParameter` is named **`Subject`**, it is used as the subject for subscription or publish. (Note: In this case, the `subject` attribute for the method should not be defined.) This allows subjects to be specified at runtime.

For each parameter, you can define either one or more acceptable choices in a `valueChoices` element, or one or more legal choices in a `legalValueChoices` element. If one of these elements is included in the parameter definition, users can select method argument values from a dropdown list in TIBCO Hawk Display. If neither is included, the corresponding method argument is represented by an editable field.

Table 20 inputParameter Element Attributes

Attribute	Type	Description
name	string	REQUIRED. Name for the input parameter.
help	string	IMPLIED. Help text describing the input parameter. Each `help` attribute is paired with a `name` attribute. If not defined, the `name` attribute value is used as the help text.
type	enumeration	REQUIRED. The supported datatypes are: BOOL, F32, F64, I8, I16, I32, I64, U8, U16, U32, STRING, XML
fieldName	string	IMPLIED. Must be in the form of F1[.F2[...[.FN]]] where F1 - FN are the message field names in each nested level. If the `fieldName` attribute is not specified, it is assumed to be the same as the `name` attribute. See Specifying Field Names in Parameters, page 111 for details.

Table 20 inputParameter Element Attributes

Attribute	Type	Description
pattern	string	IMPLIED. Specifies a pattern to convert string data to a desired form. The pattern syntax is based on the `java.text.MessageFormat` class specification. For example, a pattern `{0, number} KB` could be used to convert a string `123 KB` to a number `123` (not a string). If the pattern in the example is `{0} KB`, a string of 123 is extracted. Note that only the first argument placeholder (that is, `{0..}`) is used to extract the value for the parameter and others are ignored.

An input parameter may have an optional element, `valueChoices` or `legalValueChoices` but not both.

The `valueChoices` element defines some acceptable values for an `inputParameter` element. These values are included in the dropdown list for method arguments in TIBCO Hawk Display. Users can also type a value not in the list. This element is optional, and can only be used if the `legalValueChoices` element is not specified

Table 21 valueChoices Element Attribute

Attribute	Type	Description
value	string	IMPLIED. Defines suggested values. The values are separated by comma characters. For example: 0, 30, 45, 60, 90

The `legalValueChoices` element defines the only possible values that can be specified in an `inputParameter` method. This element is optional, and can only be used if `valueChoices` is not specified. Use this element to limit users to specific values, which are included in the dropdown list for method arguments in TIBCO Hawk Display. Users can only specify values included in the list.

Table 22 legalValueChoices Element Attribute

Attribute	Type	Description
value	string	IMPLIED. Defines legal values only. The values are separated by comma characters. For example: 0, 30, 45, 60, 90

Constant parameters are not exposed to the TIBCO Hawk Agent or TIBCO Hawk Display. Constant parameter values are passed to the msghma method internally. This type of parameters are used when some fixed constant values need to be passed to msghma methods.

Constant parameters are used to fill in constant value fields in the message.

Table 23 constantParameter Element Attributes

Attribute	Type	Description
name	string	REQUIRED. Name for the constant parameter.
help	string	IMPLIED. Help text describing the input parameter. Each `help` attribute is paired with a `name` attribute. If not defined, the `name` attribute value is used as the help text.
type	enumeration	REQUIRED. The supported datatypes are: BOOL, F32, F64, I8, I16, I32, I64, U8, U16, U32, STRING, XML
fieldName	string	IMPLIED. Must be in the form of F1[.F2[...[.FN]]] where F1 - FN are the message field names in each nested level. If the `fieldName` attribute is not specified, it is assumed to be the same as the `name` attribute. See Specifying Field Names in Parameters, page 111 for details.

For subscriber methods (with method `handlerType` `SU` or `DS`), there are three special outputParameter names:

- **`Subscription Subject`**. Returns the subject used in the subscription. It can contain wild card characters.
- **`Message Subject`**. Returns the actual subject used by the publisher to publish the received message.
- **`Reply Subject`**. Returns the reply subject of the received message. The reply subject is blank if the sender does not specify a reply subject

For RPC methods (with method `handlerType RPC`), there is a special `outputParameter` with the name **`Timeout`** and type `BOOL`. It is required and must be the first `outputParameter`. It is used to indicate whether a timeout has occurred while waiting for the reply.

Table 24 outputParameter Element Attributes

Attribute	Type	Description
name	string	REQUIRED. Name for the output parameter.
help	string	IMPLIED. Help text describing the input parameter. Each `help` attribute is paired with a `name` attribute. If not defined, the `name` attribute value is used as the help text.
type	enumeration	REQUIRED. The datatypes follow the TIBCO Rendezvous 6.x datatypes convention: BOOL, F32, F64, I8, I16, I32, I64, U8, U16, U32, STRING
fieldName	string	IMPLIED. Must be in the form of F1[.F2[...[.FN]]] where F1 - FN are the message field names in each nested level. If the `fieldName` attribute is not specified, it is assumed to be the same as the `name` attribute. See Specifying Field Names in Parameters, page 111 for details.
pattern	string	IMPLIED. Specifies a pattern to convert string data to a desired form. The pattern syntax is based on the `java.text.MessageFormat` class specification. For example, a pattern `{0, number} KB` could be used to convert a string `123 KB` to a number `123` (not a string). If the pattern in the example is `{0} KB`, a string of 123 is extracted. Note that only the first argument placeholder (that is, `{0..}`) is used to extract the value for the parameter and others are ignored.

Specifying Field Names in Parameters

The `fieldName` attribute in an `inputParameter`, `outputParameter`, or `constantParameter` element can specify a single field name, nested fields, repeating fields or arrays.

The following example shows how to specify a single field name:

```
<constantParameter
   name = "A first level field"
   fieldName = "STR_FIELD"
   type = "STRING"
   value = "test"
>
</constantParameter>
```

A nested field must be in the form of F1[.F2[...[.FN]]] where F1 - FN are the message field names in each nested level. For example, a message has a field `NESTED_FIELD`, which is another message and that message has a field `L2`. For a parameter corresponding to the value of the field `L3` in `NESTED_FIELD.L2`, its `fieldName` attribute should be:

```
<constantParameter
   name = "A nested field"
   fieldName = "NESTED_FIELD.L2.L3"
   type = "I8"
   value = "1"
   >
</constantParameter>
```

If a field is a repeating field, the instance number (starting from 1) must also be specified using the notation of {*instance number*} appended after the field name. For example, `NESTED_FIELD.L2.L3R{1}` means the field L3R belongs to the first instance of the repeating field `L3R` of `NESTED_FIELD.L2`. In the second example, `NESTED_FIELD.L2.L3R{2}` means the field L3R belongs to the second instance of the repeating field `L3R` of `NESTED_FIELD.L2`.

```
<constantParameter
   name = "First repeating field L3R in L2"
   fieldName = "NESTED_FIELD.L2.L3R{1}"
   type = "I16"
   value = "2"
>
</constantParameter>
<inputParameter
   name = "Second repeating field L3R in L2"
   fieldName = "NESTED_FIELD.L2.L3R{2}"
   type = "I64"
>
</inputParameter>
```

If a field is an array, a parameter can be used to represent only one element in an array. The element index number (starting from 0) must be specified using the notation of [*index number*] appended after the field name. For example, `NESTED_FIELD.L2.L3A[0]` means the first array element in field `L3A` where `L3A` is a field of `L2` and `L2` is field of `NESTED_FIELD`. In the second example, `NESTED_FIELD.L2.L3A[1]` means the second array element in field `L3A` where `L3A` is a field of `L2` and `L2` is field of `NESTED_FIELD`.

```
<constantParameter
   name = "First array element of L3A in L2"
   fieldName = "NESTED_FIELD.L2.L3A[0]"
   type = "U32"
   value = "4"
>
</constantParameter>
<inputParameter
   name = "Second array element of L3A in L2"
   fieldName = "NESTED_FIELD.L2.L3A[1]"
   type = "U8"
>
</inputParameter>
```

Note that the type of "array of TibrvMsg" is not supported and a `fieldName` such as `F1.F2[2].F3` is not valid. When repeating fields or array fields appear in the input or constant parameters (for sending), the sequence numbers or the index numbers must be in order, that is., no skipping is allowed.

Appendix A Program Internationalization

This appendix describes how to change encoding in TIBCO Hawk.

TIBCO Hawk WebConsole does not support internationalization.

Topics

Using Japanese Characters

The information in this section applies to configurations using Japanese characters on Microsoft Windows platforms.

Japanese Characters in Agents and Repositories

When TIBCO Hawk Display runs on an English machine, it cannot discover or display agents and repositories that have data containing Japanese characters. Therefore, if you have a mixed environment of Japanese and non-Japanese machines, you must run TIBCO Hawk Display on a Japanese machine. This allows TIBCO Hawk Display to see all the machines and the repositories.

It is recommended that the UTF-8 encoding be used throughout in this type of mixed environment.

Japanese Characters in External Variables File

If your external variables file contains Japanese characters, you must use the included `native2ascii` utility to convert the file *before starting the agent*.

The `native2ascii` utility is in the JDK bin directory. The utility is not available in the JRE.

To convert the external variables file:

1. Open a command prompt window.
2. Run the `native2ascii` utility, providing the input file and output file as arguments. For example, to convert an external variables file named `abc.var` to `xyz.var`, type:

   ```
   native2ascii abc.var xyz.var
   ```

3. Before starting the agent, specify `xyz.var` as a value to the `-variables` option in the Agent's configuration file.

Rulebase names may contain only numeric digits, underscore (_), hyphen (-), or a letter as defined by the UNICODE 2.0 standard. The latest version of the UNICODE specification can be found at www.unicode.org/ucd.

Changing the Encoding

The default encoding used by TIBCO Hawk is UTF-8. This encoding works for all locales and should not need to be changed.

The character encoding used by TIBCO Hawk on Microsoft Windows is configured by the *Codepage* and *Character Encoding* configuration parameters in the Configuration Utility.

- The Codepage configuration option indicates the desired character encoding to be used by the HMA. This value is specified using Microsoft Windows code page values.
- The Character Encoding configuration option indicates the desired character encoding to be used by the Agent, Display, and Event Service. This value is specified using the Java Character Encoding identifier.
- These two configuration options must be compatible. Refer to the *TIBCO Hawk Installation, Configuration, and Administration* manual for complete details on the Codepage and Character Encoding configuration parameters.

Appendix B Troubleshooting and Frequently Asked Questions

This appendix presents some common problems and error conditions encountered during TIBCO Hawk installation and describes how to resolve them.

Topics

Troubleshooting

This section lists possible installation errors on Microsoft Windows along with solutions.

Packet Fragmentation Errors with Multicast

You may encounter packet fragmentation errors when using multicast on Microsoft Windows XP. This is due to a known issue in Microsoft Windows.

You may need to apply a Microsoft hot fix. Information about obtaining the fix is in Microsoft Knowledge Base Article Q319627.

Error Message

A message similar to the following appears in the Microsoft Windows Event Log:

```
2002 Sep 13 09:01:31:035 GMT -8 HawkHMA Info [Application]
HWKHMA-007012 PdhGetFormattedCounterValue for object PhysicalDisk
and instance _Total and counter Split IO/Sec failed with error
0x800007D8.
```

Code Text

```
0x8000078D8  A counter with a negative value was detected.
0x8000078D6  A counter with a negative denominator was detected.
```

The Microsoft Windows Performance API is driven by a set of Microsoft Windows and third-party extension DLLs, which implement the various performance objects and associated counters. These extension DLLs may occasionally return counter values that cause mathematical errors in performance statistics calculations. These messages are reported by the Microsoft Windows Performance API.

These messages are reported by HMA for information purposes and do not have any adverse effect on functionality. They are not caused by HMA. They are caused by bugs or design flaws in the associated extension DLL.

TIBCO Hawk Services Fail to Start After Installation

After you have completed TIBCO Hawk installation on Microsoft Windows, if none of the TIBCO Hawk services will start, use the Event Viewer to check for error messages related to the TIBCO Hawk services in the Application Log.

Frequently Asked Questions

The following sections section provides answers to some commonly asked questions about TIBCO Hawk:

Alerts

How can I isolate the alerts for one agent into their own log file?

You can track information specific to one agent, microagent or application by writing this information to a log file in an action that is part of a rule. To do this, set up a rule that retrieves specific information (such as free disk space), give it a test that always evaluates to true, and write the important information to a log file. For example, you might create a rule with the data source Performance: LogicalDisk: percent free Space (Microsoft Windows) or file system: getByPartition: percent free (Unix) to be collected every five minutes. The rule might have a test such as percent free != -1 which would always be true. The test might have an action such as echo logfile.dat (which would be prefixed in Microsoft Windows with cmd /c). This would append information on free disk space to a specific log file.

Platform: Not Specified

Version: All

Why did the log parser fail?

If TIBCO Hawk alert or notification messages contain line feed characters, a log file parser will not be able to properly evaluate the TIBCO Hawk Event Service file, `Event.dat`. The line feed characters are usually derived from parameter variable substitution from the following microagents:

- `Logfile:onNewLine`
- `${nextLine}`

- `Custom::executeForString|Number, ${returnString|Number}`

Avoid using line feed characters in alert or notification messages. If line feed characters cannot be avoided, use the Console API to evaluate alerts and notifications containing line-feeds. You can also use the Hawk 4.1 Event Service microagents in lieu of directly reading `Event.dat`.

Configuring Agents

How can I start my agent with transport as TIBCO Data Grid using tcp Url parameters?

- First agent is started as discovery node
- Second agent uses the discovery url of the first agent

In such case, start the discovery node first and then the other agents using its discovery URL for the cluster to function properly.

For Example:

Agent1 (discovery node) is started with the following parameters:

```
1. discovery Url - tcp://10.97.97.123:50001
2. listen Url - tcp://10.97.97.123:50001
```

Agent2 is started with the following parameters:

```
1. discovery Url - tcp://10.97.97.123:50001
2. listen Url - tcp://10.97.97.123:50002
```

In this case, start Agent1 first, then start Agent2 and other nodes using the discovery URL of the discovery node (Agent1).

Do I need to run both the HMA and the agent?

Yes, the HMA provides system-specific microagents that could be used in monitoring system resources such as cpu utilization, disk space usage, or process instance count. The agent depends on HMA and other microagents to provide its own set of non-platform-specific microagents which allows the execution of custom scripts or programs and log file monitoring.

Platform: Not Specified

Version: All

How do I notify someone if the agent dies?

Use event service and provide it with a script to send an e-mail (or page) to an administrator. When an agent's heartbeat is not received by the event service, it will execute the script specified at start-up, providing it with two arguments (first argument being the hostname of the dead agent and the second argument being the dead agent's IP address).You may create the script to accept one or both arguments.

Platform: Not Specified

Version: All

How can I create my own microagents?

By Instrumenting your application with TIBCO Hawk Application Management Interface (AMI) API in your application.

Please refer to the TIBCO Hawk *Programmer's Guide* for further details. The sample AMI API code provided in *HAWK_HOME*`/examples/ami_api` may help you in understanding the concepts and getting started.

Platform: Not Specified

Version: All

Error messages

When I try to open a Solaris rulebase on a Microsoft Windows machine, I get the message "Invalid Microagent ... Unable to construct Test Editor"

Some rulebases are platform-independent whereas some rulebases are platform-independent.

When editing a rulebase, all of the microagents used within that rulebase must be loaded locally in the agent (or the repository's host agent) used as the editing platform. Otherwise, the agent will not have access to the necessary descriptors.

Platform: Not Specified

Version: All

When you open a rulebase loaded by an agent, you can look at all of its rules. However, you cannot choose a data source that is unavailable to that agent, and you cannot edit tests that rely on unavailable data sources.

Why?

If you want to examine or change rules whose data sources are not available from the machine on which you are using the TIBCO Hawk Display, interact with an agent located on a machine on which the data sources are available. For example, if you have Microsoft Windows and Solaris machines in your network and you want to examine a Solaris rulebase from a Microsoft Windows machine, select an agent running on a Solaris machine, choose 'Get RuleBases', and examine or change the rules there.

Platform: Not Specified

Version: All

Why is the Application Event Log full of performance DLL errors?

Under certain conditions the TIBCO Hawk Performance Microagent can cause the Application Event Log to fill rapidly with messages similar to:

```
"The open procedure for service "htpps4.1" in DLL
e:\netscape\server\bin\https\nsctr.dll failed. Performance data for
this service will not be available. Status code returns DWORD0
1008".
```

This error occurs whenever a Microsoft Windows service's performance DLL (service `htpps4.1` in this case) fails to load. Each failed load also causes the application (Hawk HMA) to leak memory. The problem lies in the Microsoft Windows performance counter libraries. To fix this problem, rename the DLL listed in the error message.

Platform: Microsoft Windows 2000

Version: All

The Microsoft Windows Performance API reports errors regarding counter values that cause mathematical errors in performance statistics calculations.

The Microsoft Windows Performance API is driven by a set of Microsoft Windows and third-party extension DLLs, which implement the various performance objects and associated counters. These extension DLLs may occasionally return counter values that cause mathematical errors in performance statistics calculations. These errors are reported by the Microsoft Windows Performance API. For example:

Error Code	Error Text
`0x8000078D8`	`A counter with a negative value was detected.`
`0x8000078D6`	`A counter with a negative denominator was detected.`

These errors are reported by HMA for information purposes. The errors are not caused by HMA. They are caused by bugs or design flaws in the associated extension DLL.

Platform: Microsoft Windows

Version: All

Why do I get an error when I call a method of my instrumented application?

Check that the message descriptor in your describeMethods return messages that match up exactly with the messages returned by your methods. If the identifiers do not match up, an error will result. Please refer to the TIBCO Hawk *Programmer's Guide* for further details.

Platform: Not Specified

Version: All

What does a NoDataSource error mean?

This type of error means that a rule attempted to obtain information from a data source that did not exist at the time of the rule evaluation and the specified information could not be obtained.

- If the data source is a HMA microagent method, check to see that the HMA process is running. When the operating system starts, make sure your HMA process starts before your TIBCO Hawk agent process.

  If the HMA process is running, there may be some reason why the communication between the agent and the HMA is upset.

- If the data source is a log file, check to see that the log file has not been renamed or moved.

- If the data source is an instrumented application, check to see if the application is running.

Rules that operate on applications instrumented with AMI can only work when the application is running.

Platform: Not Specified

Version: All

Command Lines and Process Names

I can't use a quoted string as a command argument in UNIX.

On UNIX, quoted strings with embedded blanks cannot be passed as command arguments to UNIX shell scripts by means of the `Custom::execute`, `Custom::executeForNumber` and `Custom::executeForString` methods. The Java Virtual Machine (JVM) parses these strings as blank delimited tokens and passes them as separate arguments.

To work around this, utilize a shell script as the executable. Pass all arguments that do not contain spaces first. Then use the "shift" shell command and a wildcard argument variable, "$*", to pass the space containing argument at the end.

I'm trying to execute a command line using custom: execute, and it won't work -- but when I shorten the command line it works. What should I do?

This is a known problem because some operating system shells limit the size of command lines that can be passed to them. To get around this problem, write a script with the long command line, and call that script from the custom:execute method.

Platform: Not Specified

Version: All

Why can't I match long process names?

When using the `process:getProcess` method (UNIX) or `performance: ProcessCount method` (Microsoft Windows), you may find that process names longer than a certain length cannot be matched exactly. This limit on process names comes from the operating system functions used to collect this information.

There are several workarounds to the limitation of process names:

- Only specify process names that are less than 14 characters.
- Use regular expressions to match process names. For example, to find process `abcdefghijklmn` you might search for the regular expression `abcdef.*` .
- Invoke the `Process::getProcess` method with no arguments to view the supported process name length.
- Use the `Process::getIntancesByCommand` method to match on the process's Command string.
- Use the Process microagent.

The full command is not returned by my operating system. What do I do?

In the `Process::getProcess` and `Process::getInstanceCountbyCommand` methods, the full command may not be returned. The command is truncated to between 55 and 80 characters, depending upon the operating system, and contains the same information as the `ps -ef` utility. To get the full command, use a script that utilizes the UCB `ps` utility (for example, `/usr/ucb/ps -auxww | grep -c mycommand`) in conjunction with `Custom::executeForNumber()`.

Methods

When I start a GUI process with the method custom:execute in Microsoft Windows environment, the process will only run in the background. How can I cause such a process to run in the foreground?

To start a process you want to run in the foreground, create a utility that the TIBCO Hawk agent can invoke with custom:execute and pass it the process you want to execute in the foreground. This utility will be responsible for setting all the permissions required to start and display the GUI application.

Custom: execute run in the foreground on a system wide basis by changing how the TIBCO Hawk agent service is configured. Follow these steps:

1. Select Start--Settings--Control Panel, then double-click Services.
2. Choose the TIBCO Hawk service and click Startup.
3. In the Service window that appears, click the System Account radio button in the Log On As panel.
4. Check the Allow Service to Interact with Desktop check box.

All processes spawned by the TIBCO Hawk agent will now be in the foreground.

Platform: Not Specified

Version: All

I call a script using the method custom: executeForNumber (executeForString), but the microagent terminates the script before it is finished because it takes too long. What should I do?

Here are a few possibilities. Note that your script has to return within 10 seconds.

- If the script collects information over an interval of time, you can split the functionality of the script into multiple scripts and call them using a set of actions with increasing escalation periods.

- The script can spawn an application instrumented with AMI that collects the information and returns it to the rulebase asynchronously. You can then create a rule that responds to the asynchronous information.
- The script can spawn a process that writes information to a log file, and you can create a rule that responds to additions to the log file.

Platform: Not Specified

Version: All

Why do I get a negative ID Process or ID Thread number?

When subscribing to Process/Thread methods on the performance microagent, the ID Process or ID Thread column may display a negative number other than -1. This is not an error; the negative number signifies that this particular instance of Process/Thread no longer exists and this row will be taken out in the next subscription interval. In this case, -1 as a Process ID is reserved for Process instance _Total, and -1 as a Thread ID is resolved for Thread instance _Total/_Total.

Rulebases

How many rules can you have in a rulebase? How many rulebases can you load onto an agent? How many alerts can you generate?

There is no theoretical limit to the number of rules you can have in a rulebase or the number of rulebases a TIBCO Hawk agent can process. However, you may experience a practical limit in terms of memory use, speed, and operating system limitations such as the maximum number of open files per process.

Platform: Not Specified

Version: All

If I use one rulebase across many computers, can I disable some rules on some computers?

You might think that turning on and off rules would be a good way to adapt a rulebase for use on many slightly different computers. However, it presents a problem. If you could disable rules on individual agents, any rulebases distributed across the network would remove those differences, because the rulebases would still have the same names.

One of the most important parts of planning your monitoring effort is deciding how rules will be organized into rulebases and how rulebases will be distributed over your network. Rulebases can range from very general (e.g. all_computers) to very specific (e.g. important_app). You will probably find that you end up with a set of rulebases you can mix and match to meet the specific needs on each computer.

So if you need to tailor rulebases to specific computers, we suggest that you first look at what functions those computers are performing and how those functions can be organized into rulebase distributions. If you find that you have completely individual needs for each computer, the best approach is to design a rulebase with a unique name that corresponds to that computer.

Platform: Not Specified

Version: All

What rulebases are available with the TIBCO Hawk monitoring software?

The TIBCO Hawk software provides OS-specific rulebases for the platforms supported by it, as well as agent and RV rulebases. You can find all these rulebases stored under *HAWK_HOME*/examples/rulebases where *HAWK_HOME* is the directory where the TIBCO Hawk software is installed.

Platform: Not Specified

Version: All

Why does the Posted Condition display as PostedConditionExist?

In the Rulebase Test Editor, if `PostedCondition` is specified as `${Posted.x} > 0` and saved, it will be displayed by the Test editor as `PostedConditionExist` when you reopen the rulebase. Both of these represent the same expression. Similarly, `${Posted.x} == 0` will be displayed as `!PostedConditionExist`.

When I use the external variable such as ${External.testvar}in rulebase action type execute or method:Custom:Execute on Microsoft Windows platform, while variable file is specified as for example: testvar=c:\temp\abc.bat, it does not work. What's wrong?

In the Microsoft Windows environment, when you specify the variable file which contains a directory path, instead of specifying

```
testvar=c:\temp\abc.bat
```

you should use forward slash or another backward slash to escape the '\', such as:

```
testvar=c:/temp/abc.bat
```

or

```
testvar=c:\\temp\\abc.bat
```

And this would solve the problem.

Platform: Windows

WebConsole

Why do I get the following exception when I start TIBCO Hawk WebConsole with the persistence mode set to false in web.xml file?

```
org.h2.jdbc.JdbcSQLException: Connection is broken
```

To resolve this issue, comment the <Resource> tag that points to H2 database from `context.xml` file in *HAWK_HOME*`/webconsole/tomcat/webapps/hawkwebconsole/META-INF` folder to work in no database mode.

Appendix C Interpreting TIBCO Hawk Log Files

This appendix describes the types of log files that can be created on machines running TIBCO Hawk components. Representative log file entries are shown, along with an explanation of the rolling log file mechanism.

This appendix interprets log files based on the old logging mechanism, which can be enabled using the property `hawk.logging.4xcompatmode=true` in tra files of respective components, that is, Hawk Agent, Hawk Display, Hawk Event Service.

TIBCO HMA logging is not log4j enabled as explained here.

Topics

Overview

TIBCO Hawk log files record specific TIBCO Hawk events as they occur to provide a permanent record of changes and to help you troubleshoot problems. This feature is built in and cannot be disabled. However, you can specify where and how log files are written.

Depending on installed components, the following types of log files are created on each machine running a TIBCO Hawk product component:

- `Hawk.log`, which records information about the TIBCO Hawk agent
- `Display.log`, which records information about the TIBCO Hawk Display application
- `Event.log`, which records information about the TIBCO Hawk Event Service.
- `Hawk_<microagent>.log` and `Hawk_HMA.log` , which records information about microagent activities

On Microsoft Windows systems you can have the log entries written to the Microsoft Windows application event log rather than a separate log file. In that case, select the Application Log in Microsoft Windows Event Viewer to view log entries.

By default, log files are saved in your *CONFIG_FOLDER*`/logs` directory, maximum file size is 1024 kilobytes, and the maximum number of files is five. You can modify these settings by specifying `LogService` agent startup parameters. For more information, see *TIBCO Hawk Installation and Configuration*.

Interpreting the TIBCO Hawk Agent Log

The TIBCO Hawk Agent log, `Hawk.log`, includes information on:

- Starting or stopping microagents and AMI applications
- Managing rulebases (loading, unloading, saving, deleting, using rulebases)
- Starting and stopping subscriptions to microagent methods using TIBCO Hawk Display

Following are some representative lines in an agent log file:

```
15 Jan 2013 11:14:53,195 INFO main
[com.tibco.hawk.as.kit.ASResourceFactory] - ActiveSpaces property:
transport_timeout value: 30000

15 Jan 2013 11:14:53,195 INFO main
[com.tibco.hawk.as.kit.ASResourceFactory] - ActiveSpaces property:
as_virtual_node_count value: 100

15 Jan 2013 11:14:53,195 INFO main
[com.tibco.hawk.as.kit.ASResourceFactory] - ActiveSpaces property:
as_receive_buffer_size value: 1000

15 Jan 2013 11:14:53,195 INFO main
[com.tibco.hawk.as.kit.ASResourceFactory] - ActiveSpaces property:
as_worker_thread_count value: 32

15 Jan 2013 11:14:53,258 INFO main
[com.tibco.hawk.as.kit.ASResourceFactory] - Connecting to
Metaspace:[default] with listen url [default] and discovery
url[tcp://10.97.123.88:40000]

15 Jan 2013 11:14:58,560 INFO main
[com.tibco.hawk.as.kit.ASResourceFactory] - ActiveSpaces Data Grid
Version: [2.0.2.013] - Connected to Metaspace:[default]
member-name=[] member-id=[a617b58-c350-50f4ecd5-17f] with listen
url [tcp://10.97.123.88:50000] and discovery
url[tcp://10.97.123.88:40000]

15 Jan 2013 11:15:08,665 INFO main
[COM.TIBCO.hawk.agent.maloader.MALoader] - Microagent
COM.TIBCO.hawk.agent.msghma.MsgHma is escaped for AS Transport.

15 Jan 2013 11:15:08,665 INFO main
[COM.TIBCO.hawk.agent.maloader.MALoader] - Loading microagent from
class COM.TIBCO.hawk.microagent.self.SelfMicroAgent
```

Interpreting the TIBCO Hawk Display Log

The TIBCO Hawk Display log, `Display.log`, includes information on:

- Agent activation and deactivation
- Agent alert state changes
- Actions taken by TIBCO Hawk Display, such as purging duplicate and cleared alerts

Do not rely on this log as an auditing tool for TIBCO Hawk agents. Although the Display log tracks some agent state changes, it is maintained only when the TIBCO Hawk Display application is running. Changes in agent state not detected by TIBCO Hawk Display are excluded from the log file. For a complete record of agent states, view the TIBCO Hawk Event Service data files. For more information, see Interpreting the TIBCO Hawk Event Service Log, page 133.

```
15 Jan 2013 11:14:53,850 INFO main
[COM.TIBCO.hawk.display.HawkDisplay] - Initialized log service at

15 Jan 2013 11:14:53,850 INFO main
[COM.TIBCO.hawk.display.HawkDisplay] - Java Virtual Machine(JVM)
version - 1.8.0_40, vendor - Oracle Corporation

15 Jan 2013 11:14:53,866 INFO main
[COM.TIBCO.hawk.display.HawkResources] - User Home Directory is
C:\Users\ngoyal

15 Jan 2013 11:14:53,866 INFO main
[COM.TIBCO.hawk.display.HawkResources] - Resources Directory is
C:/ProgramData/hawkv16/tibco/cfgmgmt/hawk\resource\

15 Jan 2013 11:14:53,897 ERROR main
[COM.TIBCO.hawk.display.HawkResources] - Unsupported resources
version: 5.2.0 ...

15 Jan 2013 11:14:53,897 INFO main
[COM.TIBCO.hawk.display.ImageIconLoader] - Image Directory is
jar:file:/C:/hawkv16/hawk/5.2/lib/display.jar!/COM/TIBCO/hawk/disp
lay/images/

15 Jan 2013 11:14:55,051 INFO main
[COM.TIBCO.hawk.display.preference.HawkPreferenceBasePanel] -
Missing resources file
C:\Users\ngoyal\.hawk\HawkPreference.properties...

15 Jan 2013 11:14:58,575 INFO main
[com.tibco.hawk.as.kit.ASResourceFactory] - ActiveSpaces property:
transport_timeout value: 30000
```

Interpreting the TIBCO Hawk Event Service Log

The TIBCO Hawk Event Service log, `Event.log`, includes information on starting and stopping the TIBCO Hawk Event Service. This type of file tracks the status of the Event Service itself, not the monitored events recorded in `Event.dat`.

Following are some representative lines in a typical event service log file.

```
INFO    01/15/2013 11:14:53 TIBCO Hawk HMA microagent
COM.TIBCO.hawk.hma.EventLog initialization completed successfully.

DEBUG   01/15/2013 11:14:58 [T00000001] CALLBACK      ENTERING
CALLBACK<_ami_TimerCallback>. TRACE<LINE:1227
FILE:ami_callbacks.c>.

DEBUG   01/15/2013 11:14:58 [T00000001] SUBSCRIPTION  SCANNED
TOTAL<0> EXPIRED<0> INVOKED<0> EXPIRATION FAILURES<0> INVOCATION
FAILURES<0>. TRACE<LINE:1325 FILE:ami_callbacks.c>.

DEBUG   01/15/2013 11:14:58 [T00000001] CALLBACK      EXITING
CALLBACK<_ami_TimerCallback>. TRACE<LINE:1331
FILE:ami_callbacks.c>.

DEBUG   01/15/2013 11:15:03 [T00000001] CALLBACK      ENTERING
CALLBACK<_ami_TimerCallback>. TRACE<LINE:1227
FILE:ami_callbacks.c>.

DEBUG   01/15/2013 11:15:03 [T00000001] TIBCO DataGrid : Hawk
member joined - a617b58-9c40-50f4ecc8-154. TRACE<LINE:226
FILE:ami_as.c>.

DEBUG   01/15/2013 11:15:03 [T00000001] SUBSCRIPTION  SCANNED
TOTAL<0> EXPIRED<0> INVOKED<0> EXPIRATION FAILURES<0> INVOCATION
FAILURES<0>. TRACE<LINE:1325 FILE:ami_callbacks.c>.

DEBUG   01/15/2013 11:15:03 [T00000001] CALLBACK      EXITING
CALLBACK<_ami_TimerCallback>. TRACE<LINE:1331
FILE:ami_callbacks.c>.

DEBUG   01/15/2013 11:15:08 [T00000001] CALLBACK      ENTERING
CALLBACK<_ami_TimerCallback>. TRACE<LINE:1227
FILE:ami_callbacks.c>.
```

Interpreting TIBCO Hawk HMA Log Files

The TIBCO Hawk HMA process creates log files for each microagent, such as `Hawk_Process.log`. The HMA process also creates a `Hawk_HMA.log` file for microagent-generic errors.

You control the size and level of detail in HMA log files using the `setTraceLevel()` and `setTraceParameters()` methods. These standard methods are included for default platform-specific microagents, and can be added when instrumenting an application using the AMI protocol.

Following are some representative lines in an HMA log file for the `Services` microagent:

```
INFO    01/15/2013 11:14:39

OPTIONS: Transport: AS

Discovery URL : tcp://10.97.123.88:40000

Listen URL : tcp://10.97.123.88:40000

Invocation Timeout : 30000

Virtual Node Count : 100

Worker Thread Count : 32

Received Buffer Size : 1000

CodePage : 65001

TraceLevel : -1

Logdir : C:/ProgramData/hawkv16/tibco/cfgmgmt/hawk/log --
LogMaxSize : 1024 -- Max Log Files : 5 -- Log Format : default

INFO    01/15/2013 11:14:53 TIBCO Hawk HMA initialization completed
successfully.
```

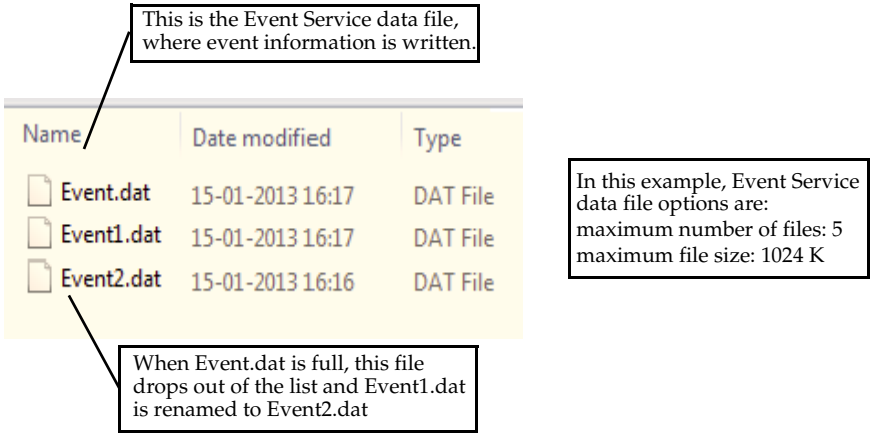
The first line identifies the AMI application, and the second identifies command line options in effect. Remaining lines are warnings and errors generated by the AMI application.

Viewing Rolling Log Files

TIBCO Hawk uses a rolling log file mechanism to manage log file space. When one file has reached a maximum size, it is closed and renamed, and a new log file with the same name is started. When the number of files of a particular type exceeds a maximum, log entries roll over to reuse the oldest log file. Using the `LogService` agent startup parameters, you can specify the maximum size of a log file before the next file is started, and how many log files of each type to keep.

For example, Figure 11 shows the current TIBCO Hawk Event Service data file `Event.dat`, accompanied by five filled data files. In this example, the maximum size of a data file is set to 1024 K (it is shown rounded) and the maximum number of data files is set to five. When the current data file `Event.dat` is filled, the most recent data file (`Event1.dat`) is renamed to `Event2.dat`, and so on, rotating `Event5.dat` out of the list. Then the current data file, `Event.dat`, is renamed to `Event1.dat` and new messages are written to the new `Event.dat`.

Figure 1 Rolling File Mechanism



Appendix D Error Codes

This appendix lists error codes for all TIBCO Hawk components.

Topics

Introduction

Error handling techniques provide an efficient way to track down the cause of a problem. The techniques allows you to track the state of a business object as it moves from its source to its destination. Error messages are standardized to a particular format. Each message is divided into a number of fields, which are explained in the next table:

Table 25 Error Handling Fields

Field Name	Explanation
MessageCode	Unique code for the message. For example: `HWKAMI-000001`
Description	Informative text message explaining the trace message.
Category	Name of the component which generated the message.
Role	Role of the trace message: Error — Unrecoverable errors. If an error of this type is not addressed, the component may continue with the next operation or may stop altogether. Warning — An abnormal condition was found, but it does not prevent processing to be performed. Special attention from an administrator is recommended. Information — A significant processing step was reached and it has been logged for tracking or auditing purposes. Debug — Debug mode should not be used unless directed by TIBCO Support.
Resolution	Suggested solution to resolve the problem.

Error Code List

HWKAMI-000001 Unable to create AMI error due to memory allocation failure.

Role Error.

Category TIBCO Hawk AMI API

Resolution Insufficient memory available for process.

HWKAMI-000002 Insufficient memory to process request.

Role Error

Category TIBCO Hawk AMI API

Resolution Insufficient memory available for process.

HWKAMI-000003 Specified AMI error handle is invalid.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI error handle passed to function is null.

HWKAMI-000004 Specified AMI error handle is invalid or corrupted.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI error handle passed to function is invalid, corrupted or was previously destroyed.

HWKAMI-000005 Required argument not specified (null).

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. Null value specified for a required function argument.

HWKAMI-000006 Invalid argument specified.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. Invalid value specified for a function argument.

HWKAMI-000007 Specified AMI session handle <handle value (hex)> is invalid.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI session handle passed to function is null.

HWKAMI-000008 Specified AMI session handle <handle value (hex)> is invalid or corrupted.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI session handle passed to function is invalid, corrupted or was previously destroyed.

HWKAMI-000009 Specified AMI method handle <handle value (hex)> is invalid.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI method handle passed to function is null.

HWKAMI-000010 Specified AMI method handle <handle value (hex)> is invalid or corrupted.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI method handle passed to function is invalid, corrupted or was previously destroyed.

HWKAMI-000011 Specified AMI subscription handle <handle value (hex)> is invalid.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI subscription handle passed to function is null.

HWKAMI-000012 Specified AMI subscription handle <handle value (hex)> is invalid or corrupted.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI subscription handle passed to function is invalid, corrupted or was previously destroyed.

HWKAMI-000013 Specified AMI parameter list handle <handle value (hex)> is invalid.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI parameter list handle passed to function is null.

HWKAMI-000014 Specified AMI parameter list handle <handle value (hex)> is invalid or corrupted.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI parameter list handle passed to function is invalid, corrupted or was previously destroyed.

HWKAMI-000015 Specified AMI parameter list handle <handle value (hex)> is invalid.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI parameter list handle passed to function is null.

HWKAMI-000016 Specified AMI parameter list handle <handle value (hex)> is invalid or corrupted.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI parameter list handle passed to function is invalid, corrupted or was previously destroyed.

HWKAMI-000017 Specified AMI parameter handle <handle value (hex)> is invalid.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI parameter handle passed to function is null.

HWKAMI-000018 Specified AMI parameter handle <handle value (hex)> is invalid or corrupted.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. AMI parameter handle passed to function is invalid, corrupted or was previously destroyed.

HWKAMI-000019 TIBCO Rendezvous error <error number> <error text>.

Role Error

Category TIBCO Hawk AMI API

Resolution The specified TIBCO Rendezvous error occurred. Refer to TIBCO Rendezvous documentation.

HWKAMI-000020 Received invocation request for unknown AMI method <method name>.

Role Error

Category TIBCO Hawk AMI API

Resolution An agent (e.g. TIBCO Hawk Agent or Console API application) has invoked a non-existent method on this AMI session. Contact TIBCO Support for assistance.

HWKAMI-000021 Method <method name> does not have a parameter named <parameter name>.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. Parameter function called for non-existent parameter. Check the method creation code to insure that the specified parameter was actually added to the method.

HWKAMI-000022 Failed to add object to linked list.

Role Error

Category TIBCO Hawk AMI API

Resolution Link list add failed due to insufficient memory available for process.

HWKAMI-000023 TIBCO Rendezvous error <error number> occurred attempting to get value for argument <argument name> of method <method name>. <error text>.

Role Error

Category TIBCO Hawk AMI API

Resolution The specified TIBCO Rendezvous error occurred when attempting to get argument value. Refer to TIBCO Rendezvous documentation.

HWKAMI-000024 <method name> invocation received for unknown subscription with context <context number> and reply subject <subject name>.

Role Error

Category TIBCO Hawk AMI API

Resolution Internal error. Contact TIBCO Support for assistance.

HWKAMI-000025 Attempt made to announce an AMI session which is already announced.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. An AMI session cannot be announced while it is currently announced.

HWKAMI-000026 Attempt made to stop an AMI session which has not been announced.

Role Error

Category TIBCO Hawk AMI API

Resolution Programming error. An AMI session cannot be stopped if it is not currently announced.

HWKAMI-030101 Unable to request ami heartbeat: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030102 Unable request ami refresh: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030103 Unable to get CONTEXT field in AMI reply message for <microagent_id>, <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030104 COM.TIBCO.hawk.agent.mafactories.AmiMsgFormatError <error>

Role Error

Category Application TIBCO Hawk Agent

Resolution An AMI message is incorrectly formatted. Consult the documentation for the AMI instrumented application.

HWKAMI-030105 Unknown message type received for <microagent_id>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030106 Received asynchronous data message for non-existent subscription in: <microagent id>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAMI-030107 Unable to process AMI reply message in: <microagent_id>, <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030109 Async method control msg reply contained non-empty RETURN field, Async method may have sent data to incorrect reply-subject

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAMI-030110 <microagent_id>:COM.TIBCO.hawk.agent.mafactories.AmiMsgFormatError <error>

Role Error

Category Application TIBCO Hawk Agent

Resolution An AMI message is incorrectly formatted. Contact the vendor of the AMI instrumented application.

HWKAMI-030111 <microagent_id>:COM.TIBCO.hawk.talon.MicroAgent

Resolution Exception <error>

Role Error

Category Application TIBCO Hawk Agent

Resolution An error has been received from an AMI instrumented application. Consult the documentation for the AMI instrumented application.

HWKAMI-030112 Unable to stop subscription: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030113 stopSubscription called for non-existent subscription: <subscription> in <microagent id>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAMI-030121 Method <name> returned tabular data but INDEX was not specified. Ignoring all but first RETURNS field

Role Error

Category Application TIBCO Hawk Agent

Resolution An AMI instrumented application is returning tabular data for a method that was not described to return tabular data. Contact the vendor of the AMI instrumented application.

HWKAMI-030501 Multiple startup announcement messages received for <microagent id>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAMI-030502 Unable to process AMI announcement message: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030503 Unable to process AMI announcement message: <ami_msg_format_error>

Role Error

Category Application TIBCO Hawk Agent

Resolution An AMI message is incorrectly formatted. Contact the vendor of the AMI instrumented application.

HWKAMI-030504 Announced AMI application <application name> did not respond to first heartbeat request. Presumed dead.

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAMI-030505 Discovering methods. AMI App: <name>, exception: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030506 Timed out waiting for reply to _describeMethods. AMI App: <name>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030507 Unable to process AMI _describeMethods reply: <ami_msg_format_error>

Role Error

Category Application TIBCO Hawk Agent

Resolution An AMI message is incorrectly formatted. Contact the vendor of the AMI instrumented application.

HWKAMI-030508 Unable to process AMI _describeMethods reply: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030509 Creating AMI microagent <name>, <COM.TIBCO.hawk.talon.MicroAgentException>;

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030510 Creating AMI microagent <name>, <com.tibco.rv.TibrvException>;

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030511 Adding discovered AMI microagent <name>, <exception>;

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030512 Unable to process AMI stop message: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030513 Unable to process AMI stop message: <ami_msg_format_error>

Role Error

Category Application TIBCO Hawk Agent

Resolution An AMI message is incorrectly formatted. Contact the vendor of the AMI instrumented application.

HWKAMI-030514 Unable to remove AMI microagent <name>, <COM.TIBCO.hawk.talon.MicroAgentException>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030515 Unable to send announcement request: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030516 Internal error, AMI Microagent not successfully removed <name>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030517 Unable to remove <name>, <COM.TIBCO.hawk.talon.MicroAgentException>;

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKAMI-030519 Unable to process AMI unsolicited msg: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.

HWKAMI-030520 Unable to process AMI unsolicited msg: <ami_msg_format_error>

Role Error

Category	Application TIBCO Hawk Agent
Resolution	An AMI message is incorrectly formatted. Contact the vendor of the AMI instrumented application.
HWKAMI-030521	AmiTibrvService dispatch thread was interrupted: <java.io.InterruptedException>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAMI-030522	AmiTibrvService dispatch thread caught exception: <com.tibco.rv.TibrvException>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	A TIBCO Rendezvous error has occurred. Consult the TIBCO Rendezvous documentation.
HWKAMI-030523	AmiTibrvService dispatch thread caught exception: <java.lang.Throwable>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support.
HWKHMA-001000	Unknown message template ID specified.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Internal error. Attempt to lookup an unknown error message. Contact TIBCO Support for assistance.
HWKHMA-001001	Trace function <function name> failed with error <error number> <error text>
Role	Error

Category TIBCO Hawk HMA

Resolution TIBCO Hawk HMA tracing function failed for the specified reason. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-001002 PROGRAM: NAME <program name> VERSION <version> DATE <build date>

Role Information

Category TIBCO Hawk HMA

Resolution Used to log product name, version and build date.

HWKHMA-001003 TIBCO Rendezvous error <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution The specified TIBCO Rendezvous error occurred. Refer to TIBCO Rendezvous documentation.

HWKHMA-001004 Insufficient memory to process request.

Role Error

Category TIBCO Hawk HMA

Resolution Insufficient memory available for process.

HWKHMA-001005 Null or invalid argument specified.

Role Error

Category TIBCO Hawk HMA

Resolution An invalid value was specified for a command line option. Refer to TIBCO Hawk documentation for command line description.

HWKHMA-001007 TIBCO Hawk HMA initialization completed successfully.

Role Information

Category TIBCO Hawk HMA

HWKHMA-001008 Execution of TIBCO Hawk HMA terminated successfully.

Role Information

Category TIBCO Hawk HMA

HWKHMA-001009 Execution of TIBCO Hawk HMA failed. Error <error number> occurred on thread <thread ID (hex)> at line <line number> in file <file name>. <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Wrapper used to report errors with thread ID, file name, and line number. Actual error could be any of the errors documented for the TIBCO Hawk HMA.

HWKHMA-001010 Directory specified, <directory name>, is invalid. <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution An invalid directory name was specified. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-001011 File specified, <file name>, is invalid. <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution An invalid file name was specified. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-001012 Function <function name> failed for file <file name>. OS error <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution An error occurred for the specified file function. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-001014 An option specified is invalid.

Role Error

Category TIBCO Hawk HMA

Resolution An invalid command line option was specified. Refer to TIBCO Hawk documentation for command line description.

HWKHMA-001015 Invalid value specified for option <option name>.

Role Error

Category TIBCO Hawk HMA

Resolution An invalid value was specified for a command line option. Refer to TIBCO Hawk documentation for command line description.

HWKHMA-001016 Value missing for option <option name>.

Role Error

Category TIBCO Hawk HMA

Resolution No value was specified for a command line option. Refer to TIBCO Hawk documentation for command line description.

HWKHMA-001017 Error processing specified TIBCO Hawk HMA command line. Error <error code>: <error test>.

Role Error

Category TIBCO Hawk HMA

Resolution The specified error was encountered processing the specified command line. Refer to TIBCO Hawk documentation for command line description.

HWKHMA-001020

OPTIONS RVD_SESSION<rendezvous parameters> TRACELEVEL<trace level> LOGDIR<log directory> LOGMAXSIZE<maximum log size> LOGMAXNUM<maximum log number>

Role: Information

Category: TIBCO Hawk HMA

Resolution: Used to log specified command line options to the TIBCO Hawk log files.

HWKHMA-001021

TIBCO Hawk HMA microagent <microagent name> initialization completed successfully.

Role: Information.

Category: TIBCO Hawk HMA

HWKHMA-001023

Error <error number> occurred on thread <thread ID (hex)> at line <line number> in file <file name>. <error text>.

Role: Error

Category: TIBCO Hawk HMA

Resolution: Wrapper used to report errors with thread ID, file name, and line number. Actual error could be any of the errors documented for the TIBCO Hawk HMA.

HWKHMA-001025

Function <function name> failed. OS error <error number> <error text>.

Role: Error

Category: TIBCO Hawk HMA

Resolution: An error occurred for the specified function. If resolution is not obvious from the error description, contact TIBCO Support for assistance.

HWKHMA-001026

Stopping TIBCO Hawk HMA in response to a <signal name> signal.

Role: Information

Category: TIBCO Hawk HMA

HWKHMA-001027

Unable to install signal handler for signal <signal name>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-001028 Internal error. Unable to obtain TIBCO Hawk HMA configuration. <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Unable to obtain configuration for TIBCO Hawk HMA. If resolution is not obvious from the error description, contact TIBCO Support for assistance.

HWKHMA-001029 This asynchronous method does not support synchronous invocation.

Role Error

Category TIBCO Hawk HMA

Resolution Attempt was made to synchronously invoke an asynchronous method. Specific method does not support synchronous invocation.

HWKHMA-001030 Unknown microagent name, <microagent name>, specified in option <option name>.

Role Error

Category TIBCO Hawk HMA

Resolution Invalid microagent name was specified in command line option. Refer to TIBCO Hawk documentation for command line description.

HWKHMA-001031 TIBCO Hawk HMA microagent <microagent name> has been disabled via disable command line option.

Role Information

Category TIBCO Hawk HMA

HWKHMA-001032 Internal HMA event <event name> received.

Role Information

Category TIBCO Hawk HMA

HWKHMA-001033 HMA restart event received for microagent <microagent name>.

Role Information

Category TIBCO Hawk HMA

HWKHMA-001034 HMA restart event processed for microagent <microagent name>.

Role Information

Category TIBCO Hawk HMA

HWKHMA-001035 Unknown internal HMA event, <event name>, received.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-001036 Attempt to increase default thread stack size failed. Function <function name> returned error <Error code>

Role Error

Category TIBCO Hawk HMA

Resolution Internal error. Contact TIBCO Support for assistance.

HWKHMA-001037 TIBCO Hawk HMA signal handling for signal <signal name> has been disabled via command line option.

Role warning

Category TIBCO Hawk HMA

Resolution This message logs the fact that the HMA has been configured via command line option -disable to ignore the specified signal. This disables the default HMA signal handling for that signal.

HWKHMA-001038 Unable to set signal disposition for signal <signal name>.

Role: Error

Category: TIBCO Hawk HMA

Resolution: The HMA was unable to set the default signal handling for the specified signal. The default signal handling will not be in effect. Contact TIBCO Support for assistance.

HWKHMA-001039 This instance of microagent <microagent name> has a stop request pending. Restart ignored.

Role: Error

Category: TIBCO Hawk HMA

Resolution: If a restart method invocation is made against a microagent already in the process of restarting then this error is generated. You cannot restart a microagent which is being stopped by a previous restart invocation.

HWKHMA-002000 Internal error. Unable to obtain service name.

Role: Error

Category: TIBCO Hawk HMA

Resolution: Contact TIBCO Support for assistance.

HWKHMA-002001 Internal error. Unable to obtain service startup parameters.

Role: Error

Category: TIBCO Hawk HMA

Resolution: Contact TIBCO Support for assistance.

HWKHMA-002002 Internal error. Unable to parse service startup parameters.

Role: Error

Category: TIBCO Hawk HMA

Resolution	Contact TIBCO Support for assistance.
HWKHMA-002003	Internal error. Unable to obtain service start type.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-002004	Internal error. Invalid service start type specified.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-002005	Internal error. Unable to obtain service control command code.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-002006	Internal error. Unable to construct discovery reply.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-002007	Internal error. OpenSCManager failed. WIN32 error <error code> (<error code hex>): <error text>
Role	Error
Category	TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002008 Internal error. Unable to allocate memory for services array.

Role Error

Category TIBCO Hawk HMA

Resolution Insufficient memory available to process. Contact TIBCO Support for assistance.

HWKHMA-002009 Internal error. Unable to construct Windows NT service configuration message.

Role Error

Category TIBCO Hawk HMA

Resolution Insufficient memory available to process. Contact TIBCO Support for assistance.

HWKHMA-002010 Internal error. Unable to construct Windows NT service status message.

Role Error

Category TIBCO Hawk HMA

Resolution Insufficient memory available to process. Contact TIBCO Support for assistance.

HWKHMA-002011 Internal error. Unable to allocate memory for services enumeration.

Role Error

Category TIBCO Hawk HMA

Resolution Insufficient memory available to process. Contact TIBCO Support for assistance.

HWKHMA-002012 Internal error. GetServiceDisplayName failed for service "<service name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002013 Internal error. QueryServiceConfig failed for service "<service name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002014 Internal error. EnumServicesStatus failed. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002015 StartService failed for service "<service name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002016 OpenService failed for service "<service name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002017 ControlService failed for service "<service name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002018 QueryServiceStatus failed for service "<service name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002019 ChangeServiceConfig failed for service "<service name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-002022 Conversion from UNICODE to UTF8 failed.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-003000 Internal error. Unable to obtain process virtual base address.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-003001 Unable to retrieve process command line for this Microsoft Operating System version. Please contact TIBCO Hawk technical support.

Role: Error

Category: TIBCO Hawk HMA

Resolution: Contact TIBCO Support for assistance.

HWKHMA-003002 Internal error. EnumProcesses failed. WIN32 error <error code> (<error code hex>): <error text>

Role: Error

Category: TIBCO Hawk HMA

Resolution: This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-003003 Unable to retrieve process count.

Role: Error

Category: TIBCO Hawk HMA

Resolution: Contact TIBCO Support for assistance.

HWKHMA-003004 Function getprocs returned a process with a PID of 0. Process was skipped.

Role: Information

Category: TIBCO Hawk HMA

HWKHMA-003005 HMA could not load NTDLL.DLL.Check path environment variable.

Category: TIBCO Hawk HMA

Role: Error

Resolution: HMA process could not load ntdll.dll. Make sure that PATH environment variable contains path which points to ntdll.dll.

HWKHMA-003006 Could not locate entry point for function NtQueryInformationProcess in dll NTDLL.DLL. 'Parent Process ID' column for all processes are set to -1.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance

HWKHMA-004000 Failure to obtain kernel stats for network interface <interface name>.

Role Error

Category TIBCO Hawk HMA

Resolution Make sure TIBCO Hawk HMA is running with root permission. If not resolved then contact TIBCO Support for assistance.

HWKHMA-004001 Failed to read kernel stats for network interface <interface name> errno <errno>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004002 Failure to obtain kernel stats for network-related statistics <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004003 get_lanstats returned error <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004004 get_lanstats on <id> returned <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004005 Unable to obtain statistics for interface name <interface name>.

Role Warning.

Category TIBCO Hawk HMA

Resolution Statistics unavailable. No resolution necessary.

HWKHMA-004006 <function name> socket(AF_INET,SOCK_DGRAM,0) returned [<socket>] errno[<error number] [<error text>]

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004007 <function name> ioctl(<socket>, <ioctl function id>,) returned [<ioctl rc>] errno[<error number] [<error text>]

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004011 <function name> ioctl(<socket> NIC[%d] returned [<ioctl rc>] errno[<error number] [<error text>]

Role Warning.

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004013 lseek(<file handle>, <seek operation>, <seek position>) returned [<return code>] errno[<error number] [<error text>]

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004015 read(<file handle>, <buffer address>, <buffer size>) returned [<return code>] errno[<error number] [<error text>]

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004018 <function name> Can not open /dev/kmem file errno[<error number] [<error text>]

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance. If "access denied" is indicated then make sure TIBCO Hawk HMA is running with root permission.

HWKHMA-004019 <function name> knlist lookup on symbol [<symbol name] failed - res[<return code>] errno[<error number] [<error text>].

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-004023 <function name> malloc failed with errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Insufficient memory available for process.

HWKHMA-004024 Unexpected implementation of kernel stats for network interface <interface name>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-004026 get_lanstats returned no info on interface <interface name>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-004027 get_lanstats returned no info on interface <interface name>, nmid <nmid>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-004028 Can not open /dev/kmem file errno[<error number] [<error text>]

Role Error

Category TIBCO Hawk HMA

Resolution Make sure TIBCO Hawk HMA is running with root permission. If not resolved then contact TIBCO Support for assistance.

HWKHMA-004029 Function <function name> failed for file <file name>. OS Error <OS error code> <OS error text>.

Category TIBCO Hawk HMA

Role Error

Resolution Make sure that file indicated by error message exist at given location.

HWKHMA-004030 Invalid record format encountered in file <file name>.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004031 Failed to open /dev/dlpi. errno = <error number> errormessage = <error text>

Category TIBCO Hawk HMA

Role Error

Resolution Make sure that file indicated by error message exist at given location.

HWKHMA-004032 No Physical Point of Attachment. Network statistics not available.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004033 <interface name> interface is attached on PPA number <PPA number>.

Category TIBCO Hawk HMA

Role Information

HWKHMA-004034 putmsg stream function failed for primitive <primitive name> errno = <error number> and errormessage = <error text>.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004035 getmsg stream function failed with errno = <error number> and errormessage = <error text>.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004036 Name Of Driver: <driver name>, PPA Number assigned to LAN interface: <interface number>, NMID No: <nmid number>, Card Instance Number: <card instance number>, Media Access Control: <media access control>.

Category TIBCO Hawk HMA

Role Information

HWKHMA-004037 Total Number of valid PPAs currently installed in system is <total ppa number>.

Category TIBCO Hawk HMA

Role Information

HWKHMA-004038 Failed to retrieve proper control code for primitive <primitive name>.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004039 Error attaching PPA number: <ppa number>.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004040 Failed to get required control message. Expected Primitive: <primitive number>, Primitive in error: <primitive error>, DLPI error code: <dlpi error code>, UNIX error code: <unix error code>

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004041 Received Wrong Primitive. Expected Primitive: <primitive number>, Received Primitive: <primitive number>.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004042 Received only data portion of the message. Failed to receive control portion of the message

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004043 No message found in stream. May be system call was interrupted.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-004044 Failed to get Network Statistics for PPA: <ppa number>.

Category TIBCO Hawk HMA

Role Error

Resolution Contact TIBCO Support for assistance.

HWKHMA-005000 kstat_open() returned null, errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005001 kstat_read() returned error, errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005002 kstat_lookup() on %s returned null, errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005003 kvm_open() returned error, errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005004 kvm_nlist() returned error, errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005005 kvm_read() returned error, errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005006 Can't open <file name> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005007 Can't knlist <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005008 Failure to fseek <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005009 Failure to read <error text>.

Role: Error

Category: TIBCO Hawk HMA

Resolution: This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005010 pstat_getdynamic() returned <return code>, errno <error number> <error text>.

Role: Error

Category: TIBCO Hawk HMA

Resolution: This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005011 malloc failed with errno <error number> <error text>.

Role: Error

Category: TIBCO Hawk HMA

Resolution: Insufficient memory available for process.

HWKHMA-005013 pstat_getvminfo returned <return code>, errno <error number> <error text>.

Role: Error

Category: TIBCO Hawk HMA

Resolution: This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005014 pstat_getstatic() returned <return code>, errno <error number> <error text>.

Role: Error

Category: TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-005017 ERROR returning from system swapctl function SC_LIST errno <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-006000 Failed to get host address for specified network parameter.

Role Error

Category TIBCO Hawk HMA

Resolution Invalid network parameter specified in Rendezvous microagent network parameter. Refer to *TIBCO Hawk Microagent Reference* manual.

HWKHMA-006001 hma_getHostAddr() returned <error code> for network <network parameter> and daemon <daemon parameter>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006002 Rendezvous transport key not found for Rendezvous advisory message: <message text>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006003 <function name>: received advisory message with subject: <subject name> message: <message text>.

Role Error

Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-006004	<function name>: Failed to allocate context.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-006005	<function name>: Failed to allocate host status context.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-006006	<function name>: Failed to get host name.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-006007	<function name>: Failed to get host entry for <host name>.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-006008	<function name>: Failed to register context.
Role	Error
Category	TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006009 <function name>: Unable to unregister context.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006010 Error getting value for argument <argument name>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006011 Failed to send unsolicited message: <message text>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006012 Failed to send pending RVD.DISCONNECTED advisory message.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006013 Failed to send async data on advisory message <subject name>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006014 <function name>: Unable to parse RV version: <version>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006015 <function name>: Unable to get field <field name> due to RV error: <RV error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006016 The argument "HMA_N_INTERVAL" is less than 90 seconds. It has been changed to the default value of 90 seconds.

Role Warning

Category TIBCO Hawk HMA

Resolution Interval argument must be 90 seconds or greater.

HWKHMA-006017 <function name>: Failed to create RV timer due to RV error: <RV error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006018 <function name>: Failed to create RV listener because of RV error: <RV error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006019 <function name>: setUpRvAdvisoryMonitoring failed. <error text>

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006020 createRvdTransport failed. <error text>

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006021 tibrvEvent_CreateListener failed. RV error: <RV error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006022 util_ListCreate failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006023 util_ListFindObj failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006024 util_ListAdd failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006025 Unable to create new RV transport because the internal buffer limit has been exceeded.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006026 Required tibrvTransport argument is null.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006027 Unable to create RV parameter key.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006028 tibrvTransport_Create failed for '<session>' '<network>' '<daemon>'. RV error: <RV error text>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-006029 Sending unsolicted message: <message text>.

Role Information

Category TIBCO Hawk HMA

HWKHMA-006030 No RV daemon status was received in the last reporting interval.

Category TIBCO Hawk HMA

Role Error

Resolution Make sure that RVD is running on the system.

HWKHMA-006031 Unable to determine RV daemon statistics because some daemon status information were missing in the last reporting interval.

Category TIBCO Hawk HMA

Role Error

Resolution Make sure that RVD is running on the system.

HWKHMA-007000 PdhOpenQuery failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-007003 Object <object name> has no counters. Ignoring object.

Role Warning

Category TIBCO Hawk HMA

Resolution Object encountered with no defined counters so no data can be returned. Object is being ignored. No action required.

HWKHMA-007005 No open query for this subscription.

Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-007006	PdhCollectQueryData for method <method name> instance <instance name> failed with error <error code>.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-007007	Object <object name> has been removed.
Role	Warning
Category	TIBCO Hawk HMA
Resolution	Performance object was removed by system and is no longer available. No action required.
HWKHMA-007008	PdhEnumObjectItems for object <object name> failed with error <error code>.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-007009	PdhEnumObjects failed with error <error code>.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Contact TIBCO Support for assistance.
HWKHMA-007010	PdhAddCounter for counter <counter name> failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-007011 PdhCollectQueryData for object <object name> and instance <instance name> failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-007012 PdhGetFormattedCounterValue for object <object name> and instance <instance name> and counter <counter name> failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-007013 PdhRemoveCounter for object <object name> and instance <instance name> and counter <counter id> failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-007014 PdhCloseQuery for object <object name> and instance <instance name> failed with error <error code>.

Role Error

Category TIBCO Hawk HMA

Resolution Contact TIBCO Support for assistance.

HWKHMA-007015 Failed to get instance and counter information for method <methodname>. Ignoring method : <method name>

Category TIBCO Hawk HMA

Role	Information
Resolution	Specified Object (Method) does not contain any Counter and Instance Information. Skipping this Object(Method) from announcing it as a method during discovery process.
HWKHMA-007016	Found duplicate counter name: <counter name> for method: <method name>. Ignoring method: <method name>.
Category	TIBCO Hawk HMA
Role	Information
Resolution	Specified Object contains duplicate counter name. Skipping this Object from announcing as method during discovery process.
HWKHMA-007017	PdhLookupPerfNameByIndex failed with Pdh status code: <status code> <method name>
Category	TIBCO Hawk HMA
Role	Error
Resolution	Contact TIBCO Support for assistance.
HWKHMA-008000	Key must be specified.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Registry microagent key argument is a required argument.
HWKHMA-008001	Entry must be specified.
Role	Error
Category	TIBCO Hawk HMA
Resolution	Registry microagent entry argument is a required argument.
HWKHMA-008002	Value must be specified.

Role Error

Category TIBCO Hawk HMA

Resolution Registry microagent value argument is a required argument.

HWKHMA-008003 Invalid system key name.

Role Error

Category TIBCO Hawk HMA

Resolution Registry microagent key argument specified is invalid or non-existent.

HWKHMA-008004 Invalid key path.

Role Error

Category TIBCO Hawk HMA

Resolution Registry microagent key path argument specified is invalid or non-existent.

HWKHMA-008005 RegOpenKeyEx failed for key <key name>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008007 RegFlushKey failed for key <key name>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008008 RegCloseKey failed for key <key name>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008009 RegQueryValueEx failed for key <key name> entry <entry name>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008013 RegEnumValue failed for key <key name>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008014 SubKey must be specified.

Role Error

Category TIBCO Hawk HMA

Resolution Registry microagent subkey argument is a required argument.

HWKHMA-008015 Specified key <key name> already exists.

Role Error

Category TIBCO Hawk HMA

Resolution Attempt to create an existing key was made.

HWKHMA-008016 RegEnumKeyEx failed for key <key name>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008017 RegCreateKeyEx failed for key <key name>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008018 RegSetValueEx failed for key <key name> entry <entry name> value <value>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008019 RegSetValueEx failed for key <key name> entry <entry name> value <value>. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-008020 Value for key <key name> entry <entry name> is not of type <type name>.

Role Error

Category TIBCO Hawk HMA

Resolution	Registry microagent value specified is not the specified type. Check actual registry entry for correct data type.
HWKHMA-008021	Root key specified is invalid.
Role	Error
Category	TIBCO Hawk HMA
Resolution	An invalid system root key was specified. See *TIBCO Hawk Microagent Reference* for correct system key values.
HWKHMA-008022	RegFlushKey failed for key <key name>. WIN32 error <error code> (<error code hex>): <error text>
Role	Error
Category	TIBCO Hawk HMA
Resolution	This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.
HWKHMA-008023	RegCloseKey failed for key <key name>. WIN32 error <error code> (<error code hex>): <error text>
Role	Error
Category	TIBCO Hawk HMA
Resolution	This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.
HWKHMA-008024	ExpandEnvironmentStrings failed for key <key name> entry <entry name>
Category	TIBCO Hawk HMA
Role	Error
Resolution	Contact TIBCO Support for assistance.
HWKHMA-009002	Unable to retrieve source parameter.
Role	Error

Category TIBCO Hawk HMA

Resolution EventLog microagent source argument is a required argument.

HWKHMA-009003 CreateEvent failed. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009004 OpenEventLog failed for <event log name> event log. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009005 beginthread failed for <event log name> event log monitoring thread. System reports error <error number> <error text>.

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009006 RegOpenKeyEx failed for key "<key name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009007 RegQueryValueEx failed for value "<value name>" under key "<key name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009008 RegCloseKey failed for key "<key name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009009 ExpandEnvironmentStrings failed. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009010 LoadLibraryEx failed for library "<library name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009011 FormatMessage failed for event <event ID> of event source "<source name>". WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009012 Message file name of event source "<source name>" exceeds maximum size of <maximum size> characters.

Role: Error

Category: TIBCO Hawk HMA

Resolution: Contact TIBCO Support for assistance.

HWKHMA-009013 RegisterEventSource failed for event source "<source name>". WIN32 error <error code> (<error code hex>): <error text>

Role: Error

Category: TIBCO Hawk HMA

Resolution: This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009014 ReportServiceEvent failed for event source "<source name>". WIN32 error <error code> (<error code hex>): <error text>

Role: Error

Category: TIBCO Hawk HMA

Resolution: This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009015 DeregisterEventSource failed for event source "<source name>". WIN32 error <error code> (<error code hex>): <error text>

Role: Error

Category: TIBCO Hawk HMA

Resolution: This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009016 <event log name> event log overrun. <event count> events lost. Warning.

Category: TIBCO Hawk HMA

Resolution	Due to extreme system load the EventLog microagent was unable to process new event log entries before they were discarded. This error is sent as an unsolicited message in order for rulebases to respond to this loss of events.
HWKHMA-009017	<event log name> event record <record number> exceeded maximum size. Record skipped.
Role	Error
Category	TIBCO Hawk HMA
Resolution	A single event log entry exceeded the maximum size and was skipped. This error is sent as an unsolicited message in order for rulebases to respond to this skipped event.
HWKHMA-009018	<event log name> event monitoring thread shutdown due to errors encountered.
Role	Error
Category	TIBCO Hawk HMA
Resolution	The dedicated processing thread encountered an unrecoverable error and has shutdown. This error is sent as an unsolicited message in order for rulebases to respond to this thread shutdown.
HWKHMA-009019	Failed to get description for event <record number> in source "<source name>". Error <error number> <error text>.
Role	Error
Category	TIBCO Hawk HMA
Resolution	This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.
HWKHMA-009021	WaitForMultipleObjects failed. WIN32 error <error code> (<error code hex>): <error text>
Role	Error
Category	TIBCO Hawk HMA
Resolution	Internal error. Contact TIBCO Support.

HWKHMA-009022 WaitForMultipleObjects returned unexpected value <return code>.

Role Error

Category TIBCO Hawk HMA

Resolution Internal error. Contact TIBCO Support.

HWKHMA-009023 WaitForSingleObject failed. WIN32 error <error code> (<error code hex>): <error text>

Role Error

Category TIBCO Hawk HMA

Resolution Internal error. Contact TIBCO Support.

HWKHMA-009024 WaitForSingleObject returned unexpected value <return code>.

Role Error

Category TIBCO Hawk HMA

Resolution Internal error. Contact TIBCO Support.

HWKHMA-009025 NotifyChangeEventLog failed for <event log name> event log.

Category TIBCO Hawk HMA

Role Error

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009026 All attempts to reopen <event log name> event log have failed.

Category TIBCO Hawk HMA

Role Error

Resolution The EventLog microagent in the HMA attempts to reopen a Microsoft Windows event log should its existing event log handle become invalid. This can happen if the event log is manually cleared from the Microsoft Windows Event Viewer for example. The microagent makes three (3) attempts to reopen the event log. If all three retries fail this error message is logged and also sent as an unsolicted message to the associated Hawk Agent. The event log monitoring thread is then terminated. This error indicates a serious problem with the Windows Event Log facility. If the Microsoft Windows Event Viewer does not provide a reason for this failure then contact TIBCO Support for assistance.

HWKHMA-009027 ReadEventLog failed for <event log name> event log.

Category TIBCO Hawk HMA

Role Error

Resolution This error will also contain the OS specific error description. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKHMA-009028 The <event log name> event log has changed (e.g. cleared) between read operations. Possible loss of events. Re-opening event log.

Category TIBCO Hawk HMA

Role Warning

Resolution This message is logged and sent as an unsolicted message to the associated Hawk Agent whenever the EventLog microagent detects that a Microsoft Windows event log has been modified by another application. The most common occurrence of this is when an event log is manually cleared via the Microsoft Windows Event Viewer. When the event log is cleared it is impossible for the microagent to get any deleted events beyond the ones it has already read so that events may have been lost. When monitoring a Microsoft Windows event log your rulebase should subscribe to the EventLog:: _onUnsolicitedMsg method so it will receive notification of this condition.

HWKHMA-009029 All attempts to resync <event log name> event log after overrun have failed.

Category TIBCO Hawk HMA

Role Error

Resolution — This message is logged and sent as an unsolicted message to the associated Hawk Agent whenever the EventLog microagent fails in all attempts to resynchronize with the Microsoft Windows Event Log after an overrun condition. Under extreme load the EventLog microagent may not be able to process new event log events before they are aged out (deleted). When an overrun is detected the EventLog microagent logs and sends an unsolicted message to the associated Hawk Agent indicating the condition and the count of lost events. It then attempts to resynchronize (catch-up) with the event log. When monitoring a Microsoft Windows event log your rulebase should subscribe to the EventLog:: _onUnsolicitedMsg method so it will receive notification of this condition.

HWKHMA-009030 — Event category specified, <event category number>, is invalid. Category value must be between 0 and 65535 inclusive.

Category — TIBCO Hawk HMA

Role — Error

Resolution — Specify an event category between zero and 65353 inclusive. A zero indicates "no category".

HWKAGT-010201 — Reading variables file <variable file name> java.io.FieNotFoundException

Role — Error

Category — Application TIBCO Hawk Agent

Resolution — Make sure that the variable's file is readable and is in the proper Java properties format.

HWKAGT-010202 — Reading variables file <variable's file name> java.io.SecurityException

Role — Error

Category — Application TIBCO Hawk Agent

Resolution — Make sure that the variable's file is readable and is in the proper Java properties format.

HWKAGT-010203 — Reading variables file <variable's file name> java.io.IOException

Role — Error

Category	Application TIBCO Hawk Agent
Resolution	Make sure that the variable's file is readable and is in the proper Java properties format.
HWKAGT-010204	Reading variables file <variable's file name> java.lang.Exception
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Make sure that the variable's file is readable and is in the proper Java properties format.
HWKAGT-010205	Can not determine current working directory from system property user.dir Please specify config path.
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Java Virtual Machine's System Property "user.dir" has to be set correctly.
HWKAGT-010207	No variables have been loaded
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Make sure that the variable's file is readable and is in the proper Java properties format.
HWKAGT-010208	config path directory <path> does not yet exist.
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Make sure that the specified configuration path exists
HWKAGT-010209	config path <path> is not a directory.

Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Make sure that the specified configuration path is a directory

HWKAGT-010210 config path directory <path> can not be read.

Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Make sure that the specified configuration path is readable and it contains TIBCO Hawk configuration files

HWKAGT-010402 java.io.IOException

Role	Error
Category	Application TIBCO Hawk Agent
Resolution	An internal error occurred while waiting to read the output from the executed command. Contact TIBCO Support

HWKAGT-010405 java.io.IOException

Role	Error
Category	Application TIBCO Hawk Agent
Resolution	An internal error occurred while executing the requested command. Contact TIBCO Support

HWKAGT-010406 A process is blocking, killing it

Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support

HWKAGT-010407 The process <cmd> timed out. It was terminated.

Role: Warning

Category: Application TIBCO Hawk Agent

Resolution: Try executing the command from a command prompt and report the results to TIBCO Support

HWKAGT-010502 Duplicate ami_rvd_transport parameters. Ignoring ami_rvd_transport <service> <network> <daemon>

Role: Warning

Category: Application TIBCO Hawk Agent

Resolution: Check the command line arguments and remove all duplicates

HWKAGT-010503 The rvd_transport and ami_rvd(s)_transport parameters match. Ignoring ami_rvd(s)_transport <service> <network> <daemon>

Role: Warning

Category: Application TIBCO Hawk Agent

Resolution: Check the command line arguments and remove all duplicates

HWKAGT-010507 Initialized Agent EMS Transport with <url=..> [username=..] [password=..]

Role: Information

Category: Application TIBCO Hawk Agent

HWKAGT-010508 Invalid number of Agent EMS Transport parameters.

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Make sure that the number of parameters following `-ems_transport` option are either one or three.

HWKAGT-010509 Retry connecting to EMS server...

Role: Information

Category: Application TIBCO Hawk Agent

HWKAGT-010510 Failed to connect to EMS server. Exception: <exception string>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Agent will try to connect to the server again. The number of attempts and the interval between attempts to connect can be changed by adding the following Java system properties

```
-Dcom.tibco.tibjms.reconnect.attempts=n[,i]
```

where `n` is number of attempts (default value is 1800) , and

`i` is interval in milliseconds between attempts (default value is 1000).

HWKAGT-010902 enableLogging() invoked without type

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Invoke the method "enableLogging() again after specifying a valid value for argument "Type"

HWKAGT-010903 enableLogging() invoked with invalid type

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Invoke the method "enableLogging() again after specifying a valid value for argument "Type"

HWKAGT-010904 disableLogging() invoked without type

Role: Error

Category	Application TIBCO Hawk Agent
Resolution	Invoke the method "disableLogging() again after specifying a valid value for argument "Type"
HWKAGT-010905	disableLogging() invoked with invalid type
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Invoke the method "disableLogging() again after specifying a valid value for argument "Type"
HWKAGT-010906	activateClass() invoked without class name
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAGT-010907	deactivateClass() invoked without class name
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAGT-011001	COM.TIBCO.hawk.microagent.Repository: Fatal error: no repository name
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAGT-011004	Initialization of -repository_dir failed: <COM.TIBCO.hawk.agent.source.SourceException>
Role	Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011006 COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase <rulebase name>. Exception: <SourceException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011007 COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase <rulebase name>. Exception: <SourceTimeoutException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011008 COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase <rulebase name>. Exception: <SourceException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011009 COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase <rulebase name>. Exception: <SourceTimeoutException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011012 COM.TIBCO.hawk.microagent.Repository: Failed to load schedules. Exception: <SourceException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution	Contact TIBCO Support
HWKAGT-011013	COM.TIBCO.hawk.microagent.Repository: Failed to load schedules. Exception: <SourceTimeoutException>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAGT-011014	COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase map <rulebase map name>. Exception: <SourceException>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAGT-011015	COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase map <rulebase map name>. Exception: <SourceTimeoutException>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAGT-011016	COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase map <rulebase map name>. Exception: <SourceException>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKAGT-011017	COM.TIBCO.hawk.microagent.Repository: Failed to load rulebase map <rulebase map name>. Exception: <SourceTimeoutException>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support

HWKAGT-011022 COM.TIBCO.hawk.microagent.Repository: Failed to start request listener. Exception: TibrvException <>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011023 COM.TIBCO.hawk.microagent.Repository: Exiting on Fatal error

Role Error

Category Application TIBCO Hawk Agent

Resolution An internal error has occurred. Contact TIBCO Support

HWKAGT-011024 COM.TIBCO.hawk.microagent.Repository: Fatal error: Duplicate repository(<name>) detected.

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011027 COM.TIBCO.hawk.microagent.Repository: Failed to send ping reply.

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011028 COM.TIBCO.hawk.microagent.Repository: Configuration type <type> not a valid type.

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011030 COM.TIBCO.hawk.microagent.Repository: Failed to send <type> inventory.

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011034 COM.TIBCO.hawk.microagent.Repository: Configuration Type <type> not valid.

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011036 COM.TIBCO.hawk.microagent.Repository: Failed to send <type> object <name>.

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011038 COM.TIBCO.hawk.microagent.Repository: Failed to retrieve rulebase <rulebase name>. Exception: <SourceException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011039 COM.TIBCO.hawk.microagent.Repository: Failed to retrieve rulebase <rulebase name>. Exception: <SourceTimeoutException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKAGT-011042 addRuleBase() invoked without RulebaseXML parameter

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: This internal error occurred while adding (or updating) a rulebase in the repository. Contact TIBCO Support

HWKAGT-011046 addRuleBase() invoked without RulebaseXML parameter

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: This internal error occurred while adding (or updating) a rulebase in the repository. Contact TIBCO Support

HWKUTL-590307 Failed to decrypt. e=<exception string>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Make sure the file `TIBCrypt.jar` is present in the EMS client directory and `jce.jar` is present in JRE lib directory.

HWKLMA-070401 <Pattern file access or pattern retrieval error message>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Make sure that the "patternfile" argument specified to "onNewLineWithPatternFile" method is correct and the file contains at least one valid Perl5 pattern

HWKLMA-070402 Unable to evaluate logfile name: <filename with embedded quotes>

Role: Warning

Category: Application TIBCO Hawk Agent

Resolution	Make sure that the file name with embedded back quotes is correct
HWKLMA-070403	<file name> does not yet exist. Will try reopening it later
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Make sure that the file name does exist and has proper read permission
HWKLMA-070602	<file name> has been truncated.
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	The file being monitored has been over written by some other application
HWKLMA-070604	java.io.IOException
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	An internal error occurred while trying to read additional data from the logfile being monitored. Contact TIBCO Support
HWKLMA-070605	java.io.IOException
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	An internal error occurred while trying to close the logfile being monitored. Contact TIBCO Support
HWKLMA-070902	java.io.IOException
Role	Error
Category	Application TIBCO Hawk Agent

Resolution An internal error occurred while waiting to read the output from the executed command. Contact TIBCO Support

HWKLMA-070906 A process is blocking, killing it

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKLMA-070907 The process <cmd> timed out. It was terminated.

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKRBE-040101 getAlertIDForClear found _currentAlertID=0 : <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-040102 Attempted activation of already active node: <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-040103 Internal rbengine error, sendAlert invoked with state of NONE

Role Error

Category Application TIBCO Hawk Agent

Resolution	Internal error, contact TIBCO Support.
HWKRBE-040302	DataSourceError with <datasource name>: <error> at, <path>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKRBE-040303	DataSourceError Cleared for <datasource name> at <path>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	This message merely indicates that a previous data source error has now cleared.
HWKRBE-040401	MAX_DATA_ELEMENTS exceeded, discarding data for rule <rule>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Data is being produced at a rate faster than the rule can process it. Usually due to a temporarily overloaded machine. Contact TIBCO Support if this error persists.
HWKRBE-040402	removing orphaned child at <path>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Rulebase engine encountered inconsistent data from microagent. Contact TIBCO Support.
HWKRBE-040403	can't create child: <reason> at <path>
Role	Error
Category	Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-040404 can't create child: <reason> at <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-040405 invalid data type received at <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution The rule at path received an unsupported data type from the microagent. Contact TIBCO Support.

HWKRBE-040501 getAlertIDForClear found currentAlertID=0 : <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-040502 NoValidDataSource for <rule> at <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution A valid data source does not exist for the rule. Instantiate a valid data source or modify the rulebase to use available data sources.

HWKRBE-040901 RBEngine timer dispatch thread caught exception: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution	Internal error, contact TIBCO Support.
HWKRBE-040902	RBEngine timer dispatch thread caught exception: <java.lang.Throwable>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Internal error, contact TIBCO Support.
HWKRBE-040903	RBEngine timer dispatch thread interrupted: <java.io.InterruptedException>
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKRBE-041202	Attempted activation of already active node: <path>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Internal error, contact TIBCO Support.
HWKRBE-041206	Processed clear for non-existent alert. ID:<id> Reason:<reason>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Internal error, contact TIBCO Support.
HWKRBE-041303	initializing subscription for rule <name>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support.

HWKRBE-041304 Attempted activation of already active node: <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKRBE-041306 while canceling subscription for rule <rulename>, <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKRBE-041309 onSubscriptionPending, data source <data_source_instance> already exists.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041311 initializing subscription for rule: <rulename>, microagent: <microagent name>, <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKRBE-041312 onSubscriptionError, data source <method_name>: <data_source_instance> not registered.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041314 onData, data source <method_name>: <data_source_instance> not registered.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041315 onData, subscription and data have inconsistent microagent id, subscription: <id>, data: <id>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041317 Rule datasource error for rule <path> exception: <COM.TIBCO.hawk.talon.MicroAgentException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKRBE-041318 onRoleError, data source <method_name>: <data_source_instance> not registered.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041319 adding DataSourceNode <method name>, <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041321 onErrorCleared, data source <method_name>: <data_source_instance> not registered.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041324 adding DataSourceNode <method name>, <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041325 adding NoValidDataSourceNode <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041401 Attempted activation of already active node: <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041407 can’t evaluate test: <exception>, At: <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to evaluate test for stated reason.

HWKRBE-041408 can't evaluate test: <exception>, At: <path>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to evaluate test for stated reason.

HWKRBE-041410 Couldn't launch clear timer: <reason>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to launch timer for stated reason.

HWKRBE-041413 Unable to evaluate action: <action>, <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to evaluate action because of stated error.

HWKRBE-041414 clear action is not of type ActionNode <type>

Role Error

Category Application TIBCO Hawk Agent

Resolution Illegally formatted rulebase file.

HWKRBE-041415 Unable to evaluate action: <action>, <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to evaluate action because of stated error.

HWKRBE-041416 Unable to reset timer: <reason>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to restart timer for stated reason.

HWKRBE-041601 Scheduler registering node <node> with schedule <scheduleName> node already registered.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041602 Schedule <schedule name> is not loaded

Role Warning

Category Application TIBCO Hawk Agent

Resolution Try loading the schedule's file (schedules.hsf) using TIBCO Hawk Display's Schedules Editor

HWKRBE-041603 Invalid arguments for Scheduler.deregister(), node:<node>, scheduleName:<scheduleName>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041604 Scheduler deregistering node <node>. Schedule <scheduleName> not in active list.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041605 Scheduler deregistering node <node> with schedule <scheduleName>, node not found.

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041608 Schedule <schedule name> is no longer loaded

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKRBE-041609 In Scheduler.evaluateSchedules() - node <node> threw exception <exception> in response to inSchedule() call. Deregistering node from scheduler.");

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-041623 InterruptedException in Scheduler sleep <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support if this error persists.

HWKRBE-041705 Ignoring includes list of <rulebase name>. Include lists are not supported in auto config mode.

Role Warning

Category Application TIBCO Hawk Agent

Resolution Edit the <rulebase name> and remove all the included rulebase lists

HWKRBE-041708 Error purging <config_file>: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to purge config_file from local cache. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKRBE-041709 Error examining inventory of source <config_source>: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to examine config_source inventory. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKRBE-041711 Error purging <schedules name>: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to purge config_source inventory cache. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKRBE-041712 Error examining inventory of source <config_source>: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to examine config_source inventory. If resolution is not obvious from the error description then contact TIBCO Support for assistance.

HWKRBE-041714 Error purging <rulebase name>: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution	Unable to purge config_source inventory cache. If resolution is not obvious from the error description then contact TIBCO Support for assistance.
HWKRBE-041715	Error examining inventory of source <rulebase name>: <exception>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Unable to examine config_source inventory. If resolution is not obvious from the error description then contact TIBCO Support for assistance.
HWKRBE-041717	Corrupt rulebase <rulebase name> from <config source>, name of the rulebase does not correspond to the name of config object.
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKRBE-041719	Error loading rulebase <name> from <config_source>: <exception>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Unable to load named rulebase from named config_source. Check configuration according to exception or contact TIBCO Support.
HWKRBE-041720	Config object is of incorrect type: <config_object>, expected <type>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support.
HWKRBE-041721	Requested config object <name> not found in config source
Role	Error

Category Application TIBCO Hawk Agent

Resolution Unable to locate config object in config source. Insure that it exists.

HWKRBE-041722 Error loading <config object name> from <config source>, <SourceException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKRBE-041723 Error loading <config object name> from <config source>, <SourceTimeoutException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKRBE-041724 Error loading <config object name> from <config source>, <java.lang.Exception>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKRBE-041725 Config object <config object name> was retrieved from an emergency source: <source name>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Make sure that the specified config object exists in the config source directory

HWKRBE-041727 Config object is of incorrect type: <name>, expected Schedules.hsf

Role Error

Category Application TIBCO Hawk Agent

Resolution	Unable to locate Schedules.hsf in config source. Insure that it exists.
HWKRBE-041731	Config object is of incorrect type: <name>, expected rbmap.hrm
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Unable to locate rbmap.hrm in config source. Insure that it exists.
HWKRBE-041734	Config object is of incorrect type: <name>, expected Schedules.hsf
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Unable to locate Schedules.hsf in config source. Insure that it exists.
HWKRBE-041736	Error finding rulebase: <exception>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Unable to examine auto-config directory. Check path and permissions.
HWKRBE-041737	Corrupt rulebase <rulebase name> from <config source>, name of the rulebase does not correspond to the name of config object.
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKRBE-041739	Error loading rulebase <name> from <config_source>: <exception>
Role	Error
Category	Application TIBCO Hawk Agent

Resolution Unable to load named rulebase from named config_source. Check configuration according to exception or contact TIBCO Support.

HWKRBE-041740 Config object is of incorrect type: <name>, expected COM.TIBCO.hawk.config.rbengine.rulebase.Rulebase

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to locate rbmap.hrm in config source. Insure that it exists.

HWKRBE-041741 Rulebase <name> found in inventory but unable to retrieve

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to retrieve named rulebase from config source. Check permissions.

HWKRBE-041744 Invoking method <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKRBE-041745 loadRuleBase() may not be invoked when agent is in auto-config mode. Use loadRuleBaseFromFile() instead.

Role Error

Category Application TIBCO Hawk Agent

Resolution The loadRuleBase() method of the RBEngineMicroAgent was used under conditions when it is not permitted. Use the loadRuleBaseFromFile() method instead.

HWKRBE-041746 loadRuleBase() invoked without rulebase name

Role Error

Category	Application TIBCO Hawk Agent
Resolution	Modify method invocation to include a rulebase name.
HWKRBE-041748	Corrupt rulebase <rulebase name> from <config source>, name of the rulebase does not correspond to the name of config object.
Role	Warning
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support
HWKRBE-041752	RuleBase file not found: <name>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Insure that the named rulebase file exists.
HWKRBE-041753	loadRuleBaseFromFile() invoked without rulebase name
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Modify method invocation to include a rulebase name.
HWKRBE-041755	unloadRuleBase() invoked without rulebase name
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Modify method invocation to include a rulebase name.
HWKRBE-041757	sendMail: messageNotDelivered.
Role	Error
Category	Application TIBCO Hawk Agent

Resolution Unable to deliver email. Check email server or sendMail method invocation.

HWKRBE-041758 sendMail: messagePartiallyDelivered.

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to deliver email. Check email server or sendMail method invocation.

HWKRBE-041759 Send Mail Exception: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Unable to deliver email. Check email server or sendMail method invocation as per exception or contact TIBCO Support.

HWKRBE-041760 setSchedules() invoked without SchedulesXML parameter

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKRBE-041761 Error saving schedules in auto-config: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Check auto-config path or permissions.

HWKRBE-041763 Error deleting rulebase: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution	Check auto-config path or permissions.
HWKRBE-041764	addRuleBase() invoked without RulebaseXML parameter
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support.
HWKRBE-041765	Error saving rulebase <name> in auto-config: <exception>
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Check auto-config path or permissions.
HWKRBE-041766	updateRuleBase() invoked without rulebase
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Contact TIBCO Support.
HWKRBE-042301	Arbitrable node <node> threw exception <exception> in response to wonArbitration() call. Deregistering node from Arbiter.
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Internal error, contact TIBCO Support.
HWKRBE-042302	Arbitrable node <node> threw exception <exception> in response to wonArbitration() call. Queued for deregistration from Arbiter.
Role	Error
Category	Application TIBCO Hawk Agent
Resolution	Internal error, contact TIBCO Support.

HWKRBE-042701 Alert suspension thread interrupted, terminating thread.

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support if this error persists.

HWKRBE-043301 Fatal error in <thread_name> thread:<exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-043302 SubscriptionMultiplexer error: null event received

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-043303 Unchecked exception thrown in SubscriptionMultiplexer thread while processing SubscribeEvent for sub: <subscription>, microagent:<id>, exception: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-043304 Unchecked exception thrown in SubscriptionMultiplexer thread while calling onSubscriptionError() for handler: <subscription>, microagent:<id>, exception: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support.

HWKRBE-043305 Unchecked exception thrown in SubscriptionMultiplexer thread by method Subscription.cancel() for sub: <subscription>, microagent:<id>, exception: <exception>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Internal error, contact TIBCO Support.

HWKRBE-043307 Unchecked exception thrown in SubscriptionMultiplexer thread while processing MAAddedEvent for sub: <subscription>, microagent:<id>, exception: <exception>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Internal error, contact TIBCO Support.

HWKRBE-043308 Unchecked exception thrown in SubscriptionMultiplexer thread while calling onSubscriptionError() for handler: <subscription>, microagent:<id>, exception: <exception>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Internal error, contact TIBCO Support.

HWKRBE-043309 SubscriptionMultiplexer error: Unknown event type.

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Internal error, contact TIBCO Support.

HWKMAG-020310 stopSubscription call failed for <microagent_id>::<subscription>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKMAG-020313 Inconsistent microagent state for method subscription <subscription>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKMAG-020314 Attempt to remove MicroAgent more than once, <microagent_id>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support.

HWKCON-220601 RemoteAccessServer dispatch thread caught exception: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220602 RemoteAccessServer dispatch thread caught exception: <java.lang.Throwable>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220603 RemoteAccessServer processRequest thread caught exception: <java.lang.Throwable>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220604 RemoteAccessServer.processRequest(), request type= <type> <java.lang.Throwable>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220605 Processing groupOp error reply: <COM.TIBCO.hawk.talon.MicroAgent

Resolution Exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220606 Processing groupOp error reply: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220607 Sending reply: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220608 processing pingRequest: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220609 processing commitRequest: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220610 processing refreshRequest: <com.tibco.rv.TibrvException>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCON-220611 RemoteAccessServer dispatch thread was interrupted: <java.io.InterruptedException>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Internal error, contact TIBCO Support

HWKCON-220701 DuplicateAgent

Resolution Check dispatch thread caught exception: <exception>

Role Error

Category Application TIBCO Hawk Agent

Resolution Make sure there is only one agent running with the same startup parameters.

HWKCFG-120901 RBMap::toXML() - Unable to write to output stream.\n Exception: <java.io.IOException>

Role Error

Category Application TIBCO Hawk Agent

Resolution Contact TIBCO Support

HWKCFG-131101 Failed to convert rulebase <rulebase name> ...

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Contact TIBCO Support

HWKCFG-110101 MicroAgentDescriptorReader - Unable to read DataDescriptor.\n Exception: <java.lang.Exception>

Role: Error

Category: Application TIBCO Hawk Agent

Resolution: Contact TIBCO Support

HWKDIS-274404 <COM.TIBCO.hawk.hawkeye.Error ExceptionEvent.getMessage()>

Role: Error

Category: Application TIBCO Hawk Display

Resolution: An internal error occurred in the TIBCO Hawk Console API. Contact TIBCO Support.

HWKDIS-274405 <COM.TIBCO.hawk.console.hawkeye.WarningExceptionEvent.getConsoleWarning().getMessage()>

Role: Warning

Category: Application TIBCO Hawk Agent

Resolution: The warning exception event should provide additional details

HWKDIS-271604 Unable to locate container - <container>

Role: Error

Category: Application TIBCO Hawk Display

Resolution: An error occurred while locating container when moving a container. Verify that the name of the container to be moved is valid.

HWKDIS-270502 Reading variables file <file name> <java.io.FileNotFoundException>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while reading the specified variables file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-270503 Reading variables file <file name> <java.io.SecurityException>

Role Error

Category Application TIBCO Hawk Display

An error occurred while reading the specified variables file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-270504 Reading variables file <file name> <java.io.IOException>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while reading the specified variables file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-270505 Reading variables file <file name> <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while reading the specified variables file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-270506 Unable to load variables from file <file name>

Role Warning

Category Application TIBCO Hawk Agent

Resolution Make sure that the variable's file is readable, it contains at least one valid variable and is in the proper Java properties format

HWKDIS-270508 Unable to openDisplay Display file - <fileName>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while reading the specified display file. This message is followed by a message with detail reason for the failure.

HWKDIS-270509 Unable to openDisplay - <exception>

Role Error

Category Application TIBCO Hawk Display

An error occurred while opening a display file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-270511 Unable to initialize TIBCO Hawk Display : <COM.TIBCO.hawk.console.hawkeye.ConsoleInitializationException>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while initializing TIBCO Hawk Display. If the resolution is not obvious from the exception description then contact TIBCO Support for assistance.

HWKDIS-270512 Unable to initialize TIBCO Hawk Display : <java.lang.Throwable>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while initializing TIBCO Hawk Display. If the resolution is not obvious from the exception description then contact TIBCO Support for assistance.

HWKDIS-270513 Unable to reinitialize TIBCO Hawk Display : <COM.TIBCO.hawk.console.hawkeye.ConsoleInitializationException>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while reinitializing TIBCO Hawk Display. If the resolution is not obvious from the exception description then contact TIBCO Support for assistance.

HWKDIS-270514 Unable to reinitialize TIBCO Hawk Display : <java.lang.Throwable>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while reinitializing TIBCO Hawk Display. If the resolution is not obvious from the exception description then contact TIBCO Support for assistance.

HWKDIS-270517 Unable to find <key> in HawkGui.properties ...

Role Error

Category Application TIBCO Hawk Display

Resolution The specified key is not found in the HawkGui.properties file. The HawkGui.properties may be corrupted or of invalid version. Verify that the version HawkGui.properties is supported.

HWKDIS-270518 Unable to find <key> in HawkGui.properties ...

Role Error

Category Application TIBCO Hawk Display

Resolution The specified key is not found in the HawkGui.properties file. The HawkGui.properties may be corrupted or of invalid version. Verify that the version HawkGui.properties is supported.

HWKDIS-270901 Unable to locate node in tree - <node>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while locating the specified node in the display tree. Contact TIBCO Support.

HWKDIS-271602 Unable to locate parent node of - <node name>

Role Error

Category Application TIBCO Hawk Display

Resolution Internal error. Contact TIBCO Support.

HWKDIS-271603 Unable to locate node in tree - <node name>

Role Error

Category Application TIBCO Hawk Display

Resolution Internal error. Contact TIBCO Support.

HWKDIS-271604 Unable to locate container - <container name>

Role Error

Category Application TIBCO Hawk Display

Resolution Internal error. Contact TIBCO Support.

HWKDIS-271605 Unable to find container Discovered

Role Error

Category Application TIBCO Hawk Display

Resolution The default container Discovered is not found in the Display. A default Discovered will be created. Retry the operation. If the error persist, contact TIBCO Support.

HWKDIS-271606 Varying versions of same rulebase <rulebase name> detected on agent <agent name>

Role Error

Category Application TIBCO Hawk Display

Resolution Multiple rulebases with the specified name is found on different agents. Some of the rulebases may be out of date. Replace out of date rulebases with the most up to date version.

HWKDIS-272701 Unable to open display file: <file name> - Error <java.io.FileNotFoundException>

Role Error

Category Application TIBCO Hawk Display

Resolution TIBCO Hawk Display is unable to open the specified display file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-272702 Unable to open display file: <file name> - Error <java.io.StreamCorruptedException>

Role Error

Category Application TIBCO Hawk Display

Resolution TIBCO Hawk Display is unable to open the specified display file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-272703 Unable to open display file: <file name> - Error <java.lang.Exceptin>

Role Error

Category Application TIBCO Hawk Display

Resolution TIBCO Hawk Display is unable to open the specified display file. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-273903 Unsupported resources version: <version>

Role Error

Category Application TIBCO Hawk Display

Resolution The properties file is of different version. Check or re-install Hawk to ensure that HawkGui.properties and Display are of the same version.

HWKDIS-273904 Missing resources file HawkGui.properties ... exiting

Role Error

Category Application TIBCO Hawk Display

Resolution The HawkGui.properties file is not found in the resource directory. Check or re-install Hawk to ensure that HawkGui.properties is at the proper location.

HWKDIS-275502 Image Directory not found...

Role Error

Category Application TIBCO Hawk Display

Resolution The image directory is not found. Check or re-install Hawk to ensure that HawkGui.properties is at the proper location.

HWKDIS-275601 Unable to send config object. - Error <COM.TIBCO.hawk.talon.MicroAgentException>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while sending rulebases or schedule to multiple agent. If the resolution is not obvious from the exception description then contact TIBCO Support for assistance.

HWKDIS-300401 ERROR: building method invocation while performing network query/action: <exception message>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while performing network query/action. The exception message should provide more details about the error.

HWKDIS-300402 ERROR: performing network query/action: <exception message>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while performing network query/action. The exception message should provide more details about the error.

HWKDIS-300403 ERROR: parsing results while performing network query/action: <exception message>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while performing network query/action. The exception message should provide more details about the error.

HWKDIS-300801 Unable to retrieve Micro Agents from - <hostname>. - Error: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while performing network query/action. The exception message should provide more details about the error.

HWKDIS-310101 Failed to invoke java command: <toolCommand>; Exception - <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while invoking the specified tool command. This message is followed by a message that displays an exception that describes the error. Verify that the Java class specified is valid and the classpath for the class is included in CLASSPATH.

HWKDIS-310402 Failed to load resources from input stream ...

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while loading resource such as an icon. Verify that the resource's path is valid.

HWKDIS-310403 Error saving preferences to resources file <file name>.

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while saving preferences to the resource file. The path of the file may be invalid or the file may have read-only access.

HWKDIS-310404 Failed to invoke java command: <toolCommand>; Exception - <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while invoking the specified tool command. This message is followed by a message that displays an exception that describes the error. Verify that the Java class specified is valid and the classpath for the class is included in CLASSPATH.

HWKDIS-310601 IllegalAccessException: <error text>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred when loading the class specified for the menu command. Hawk may not have access to the definition of the class because the class is a public class. The message is followed by a message that indicates the Java class in error.

HWKDIS-310602 IllegalArgumentException: <error text>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred when loading the class specified for the menu command. Hawk may not have access to the definition of the class because the class is a public class. The message is followed by a message that indicates the Java class in error.

HWKDIS-310603 InvocationTargetException: <error text>

Role Error

Category Application TIBCO Hawk Display

Resolution An exception is thrown by the main or the constructor of the class specified for the menu command. The message is followed by a message that indicates the Java class in error.

HWKDIS-310604 ExceptionInInitializerError: <error text>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred during static initialization of the class specified for the menu command. The message is followed by a message that indicates the Java class in error.

HWKDIS-331201 Unable to save rulebase <rulebase name> to file <file name>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while saving rulebase to a local file system. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331202 Unable to save Rulebase - <file name> \n <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while saving rulebase to a local file system. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331203 Unable to add rulebase - <rulebase name>; Exception: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while sending the rulebase to the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331204 Unable to add rulebase - <rulebase name>; Exception: <COM.TIBCO.hawk.talon.MicroAgentException>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while sending the rulebase to the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331205 Unable to update rulebase - <rulebase name>; Exception: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while sending the rulebase to the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331206 Unable to update rulebase - <rulebase name>; Exception: <COM.TIBCO.hawk.talon.MicroAgentException>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while sending the rulebase to the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331207 Unable to unload rulebase - <rulebase name>; Exception: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while unloading the rulebase from the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331208 Unable to unload rulebase - <rulebase name>; Exception: <COM.TIBCO.hawk.talon.MicroAgentException>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while unloading the rulebase from the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331209 Unable to send rulebase; Exception: <COM.TIBCO.hawk.talon.MicroAgentException>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while sending the rulebase to the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331210 Unable to retrieve rulebase <rulebase name> from <agent or repository name>; Exception: <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while retrieving the rulebase from the agent (or the repository). If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-332912 Unable to load Micro Agent Descriptors from - <host name>; Exception - <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while trying to load microagent descriptors from the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-331301 Unable to clone rulebase for - <rulebase name>; Exception - <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution Internal Error Contact TIBCO Support.

HWKDIS-332901 Unable to export Micro Agent Descriptors from - <host name>; Exception - <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution A error occurred while trying to export microagent descriptors to the agent. If the resolution is not obvious from the exception description then contact TIBCO Support.

HWKDIS-340801 Unable to retrieve Micro Agents from - <agent name>; Exception - <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while retrieving micro agents from the specified agent. The exception message should provide more details about the error.

HWKDIS-350401 Unable to execute command - <command string>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while executing the specified command in the command file for Tekmon support. Verify that the command is a valid command.

HWKDIS-381301 Unable to retrieve schedules from - <host or repository name>. - Error <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while retrieving schedules from either the agent or repository. The exception message should provide more details about the error.

HWKDIS-381401 Unable to send Schedules; Exception - <java.lang.Exception>

Role Error

Category Application TIBCO Hawk Display

Resolution An error occurred while sending schedules to either the agent or repository. The exception message should provide more details about the error.

HWKEVT-390101 Missing -datadir and JDBC command line options. TIBCO Hawk events will not be persistent

Role Warning

Category Application TIBCO Hawk Event Service

Resolution Specify missing command line options if TIBCO Hawk events needs to be written to file or database.

HWKEVT-390104 Setting data destination failed. Exiting !!

Role Error

Category Application TIBCO Hawk Event Service

Resolution Make sure that the directory specified for -datadir command line option has write permission

HWKEVT-390106 java.lang.NumberFormatException

Role Error

Category Application TIBCO Hawk Event Service

Resolution Check command line options and verify that they are all correct

HWKEVT-390107 java.lang.UnsupportedEncodingException

Role Error

Category Application TIBCO Hawk Event Service

Resolution Check command line option -characer_encoding and verify that it is valid

HWKEVT-390108 java.lang.Exception

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact TIBCO Support

HWKEVT-390110 Failed to create FT TibrvRvdTransport - <com.tibco.tibrv.TibrvException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Check the TIBCO Rendezvous session -rvd_session command line option and verify that it is valid

HWKEVT-390111 Exception joining fault tolerance group - <com.tibco.tibrv.TibrvException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Check the TIBCO Rendezvous fault tolerant -ft command line option and verify that it is valid

HWKEVT-390701 Unable to create RV session for AMI communication - <com.tibco.tibrv.TibrvException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Check the TIBCO Rendezvous session -ami_rvd_session command line option and verify that it is valid

HWKEVT-390802 JDBC Driver is unable to insert a record for "onAgentAlive" event. <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390803 JDBC Driver is unable to insert a record for "onAgentExpired" event. <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390804 JDBC Driver is unable to insert a record for "onAlert" event. <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390805 JDBC Driver is unable to insert a record for "onClear" event. <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390806 JDBC Driver is unable to insert a record for "onMicroAgentChange" event. <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390807 JDBC Driver is unable to insert a record for "onRulebaseChange" event. <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390808 JDBC Driver is unable to create table "HawkAgentInfo". <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390809 JDBC Driver is unable to create table "HawkAlertClearInfo". <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

HWKEVT-390810 JDBC Driver is unable to close connection. <java.sql.SQLException>

Role Error

Category Application TIBCO Hawk Event Service

Resolution Contact JDBC driver vendor for more info

Appendix E TIBCO Hawk Directories and Files

This appendix lists the files installed with TIBCO Hawk on Microsoft Windows and UNIX platforms.

Topics

TIBCO Hawk Directory Structure

This section explains the directory structure and general placement of files in *TIBCO_HOME*, *HAWK_HOME* and *CONFIG_FOLDER*.

The following table explains the directory structure and general placement of files in the *TIBCO_HOME* of TIBCO Hawk software installation subdirectories. The data directory is created only if the TIBCO Hawk event service is installed, and files are placed in it only when the event service is started.

Table 26 TIBCO_HOME Files and Directories

Directory	Description	Contents
*TIBCO_HOME*_installInfo	Contains information about all installed products	\assembly_registry rv_8.3.2000_prodInfo.xml hawk_5.2.0_prodInfo.xml
TIBCO_HOME\as	Contains files used by TIBCO DataGrid	
TIBCO_HOME\hawk	Contains files and folders for TIBCO Hawk	/<*version*>
TIBCO_HOME\release_notes	Stores license of TIBCO Hawk and HTML link to the online TIBCO Hawk documentation	tib_hawk_<*version*>_license.pdf TIB_hawk_<*version*>_docinfo.html
TIBCO_HOME\tea	Stores files and folders for Admin Agent	\agents
TIBCO_HOME\tibcojre or *TIBCO_HOME*\tibcojre64 (for 64-bit system)	Contains files used by JRE	
TIBCO_HOME\tools		\lib \machinemodel \scripts \universal_installer \vcredist_<*x86 or x64*> \wrapper PersistEnvVars.exe

The following table explains the directory structure and general placement of files in the *HAWK_HOME*.

Table 27 TIBCO HAWK_HOME Files and Directories

Directory	Description	Contents
HAWK_HOME\adapters\http	Contains all the files required by HTTP Adapter	\css \jsp \META-INF \TIBHawk \WEB-INF \xsd \xsl index.html readme.txt
HAWK_HOME\admin-plugins	Contains the files for the Hawk plug-ins	allalertconsole.war hawkconfig.war monitoringconsole.war
HAWK_HOME\ami_api	Contains all header files required for sample programs	\bin **Note**: There is no **bin** folder on UNIX based system after installation. \include \lib **Note:** Files differ on Windows and UNIX based system after installation. \src
HAWK_HOME\autoconfig	Used to store rulebase files that will be loaded by the TIBCO Hawk agent automatically at startup	<platform>.hrb schedules.hsf

Table 27 TIBCO HAWK_HOME Files and Directories (Cont'd)

Directory	Description	Contents
HAWK_HOME\bin	Contains TIBCO Hawk executable files and starting scripts	**Additional files for UNIX, Linux, and IBM i5/OS** ConfigureMonitoring mar spot tibhawkagent tibhawkdisplay tibhawkhma starthma **Additional files for Microsoft Windows** EventLogClass.dll HawkRandomAccessFile.dll HawkTrustedUserID.dll msvcr80.dll tibhawkconfig.exe tibhawkmsg.dll tibhawkregistry.dll tibhawkservice.dll
HAWK_HOME\config	Used to store rulebase files if using manual rulebase configuration	TibRendezvous.hrb
HAWK_HOME\examples	Contains sample applications with AMI interfaces, sample rulebases, scripts, and other files	ami_api console_api ma_plugin msghma rbmap_api rulebase_api rulebases schedule_api scripts security hawk_example.props

Table 27 TIBCO HAWK_HOME Files and Directories (Cont'd)

Directory	Description	Contents
HAWK_HOME\apidocs	Contains TIBCO Hawk API documentation in HTML format	ami_api config_api console_api
HAWK_HOME\lib	Contains TIBCO Hawk Java class jar files	
HAWK_HOME\plugin	Contains files used by plugins of TIBCO Hawk	\ems \jvm
HAWK_HOME\resource	Contains files used by TIBCO Hawk Display	HawkGui.properties
HAWK_HOME\setup		install.properties post-install.xml
HAWK_HOME\webconsole	Contains Hawk WebConsole war file and Tomcat WebServer (if installed)	

The following table explains the directory structure and general placement of files in the *CONFIG_FOLDER*.

Table 28 CONFIG_FOLDER Files and Directories

Directory	Description	Contents
CONFIG_FOLDER, that is' c:\TIBCO_CONFIG_HOME\tibco\cfgmgmt\hawk	Contains configuration files	autoconfig bin cache config data logs plugin resource security

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