TIBCO Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks™ 6

User Guide

Version 6.7.2
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Contents

Overview

TIBCO® Operational Intelligence Hawk® RedTail is a tool for monitoring applications. To facilitate monitoring, the TIBCO Hawk agent in the TIBCO® OI Hawk® RedTail infrastructure interfaces with the TIBCO ActiveMatrix BusinessWorks™ applications through the TIBCO Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks™ 6.

The following image provides an overview of the interaction between the ActiveMatrix BusinessWorks™ and TIBCO OI Hawk RedTail entities.

ActiveMatrix BusinessWorks and TIBCO OI Hawk RedTail Interaction
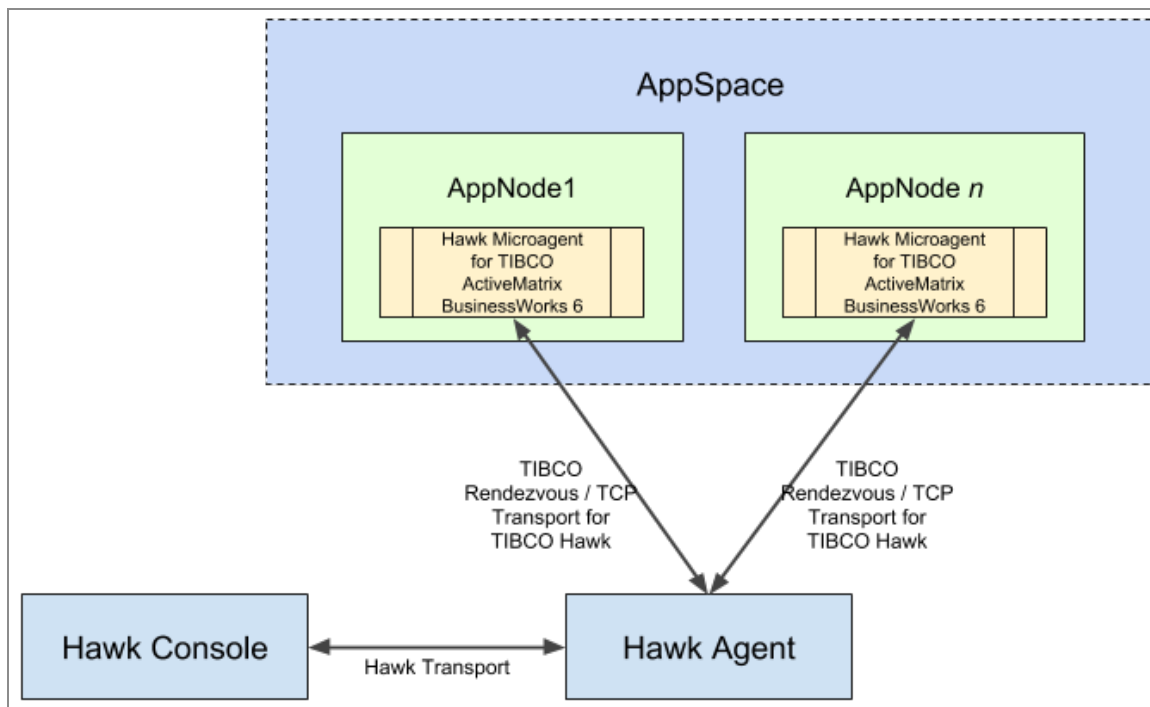
Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks 6 provides microagent methods to monitor ActiveMatrix BusinessWorks applications. For more information about these microagents, see Methods of Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6.

> ℹ️ **Note:** TIBCO® Operational Intelligence Hawk® RedTail has been used to represent TIBCO® Operational Intelligence Hawk® RedTail, TIBCO® Operational Intelligence Hawk® RedTail - Container Edition, TIBCO® Operational Intelligence Hawk®, and TIBCO Hawk®. All processes and procedures applicable to TIBCO® Operational Intelligence Hawk® RedTail are also applicable to TIBCO® Operational Intelligence Hawk® RedTail - Container Edition, TIBCO® Operational Intelligence Hawk®, and TIBCO Hawk®, unless explicitly stated otherwise.

Configuring ActiveMatrix BusinessWorks for TIBCO® Operational Intelligence Hawk® RedTail

To use TIBCO® OI Hawk® RedTail with ActiveMatrix BusinessWorks, configure the AppSpace to enable the Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6.

Before you begin
- (Optional) To use TIBCO Rendezvous® as the transport, download and install TIBCO Rendezvous®. For details, see TIBCO Rendezvous® documentation.

- Download and install ActiveMatrix BusinessWorks in the same *TIBCO_HOME* where you have installed TIBCO Rendezvous®. For details, see TIBCO ActiveMatrix BusinessWorks™ documentation.

  > **Note:** Ensure that TIBCO Rendezvous® and ActiveMatrix BusinessWorks are in the same *TIBCO_HOME* and *RV_HOME*

- Existing ActiveMatrix BusinessWorks application archive (EAR) file. For details about creating an application, see TIBCO ActiveMatrix BusinessWorks™ documentation.

- Download and install TIBCO OI Hawk RedTail. For details, see TIBCO® Operational Intelligence Hawk® RedTail documentation.

- Download and install Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6 in the same *TIBCO_HOME* where you have installed ActiveMatrix BusinessWorks. For details, see "Installation" in *TIBCO Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks™ 6 Installation Guide*.

> **Note:** For information about the supported versions of the prerequisite software, see the *Readme* file for Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6.

Procedure

1. Navigate to the configuration folder in the ActiveMatrix BusinessWorks installation at *BW_HOME*/config.

2. Copy the AppSpace configuration template (`appspace_config.ini_template`) file to a temporary location and rename the file to `config.ini`.

3. Open the `config.ini` file for editing and configure the following properties based on the transport used.

Configuration	Properties	
Enable Hawk microagents for ActiveMatrix BusinessWorks	`bw.hawk.hma.enabled=true`	

(Optional) Enable TIBCO Rendezvous® transport	`bw.hawk.hma.transport=tibrv`
	
	`bw.hawk.hma.rv.service=`*<port>*
	
	`bw.hawk.hma.rv.network=`
	
	`bw.hawk.hma.rv.daemon=tcp:`*<port>*	

(Optional) Enable TCP Transport for TIBCO Hawk	`bw.hawk.hma.transport=tibtcp` `bw.hawk.hma.tcp.self.url=`*<host_IP>:<port>* **Note:** Multiple AppNodes running on the same machine must bind to separate ports. **Example:** AppNode1 binds to port 2571, then AppNode2 can use port 2572 (or a port other than 2571). `bw.hawk.hma.tcp.agent.ami.url=`*<hawk_agent_IP>:<AMI_session_port>*	
(Optional) Enable TLS or SSL for TCP Transport	`bw.hawk.hma.tcp.key.store`	Key store file name

Configuration	Properties	
	`bw.hawk.hma.tcp.trust.store`	Trust store file name
	`bw.hawk.hma.tcp.key.store.password`	Password for the key store file
	`bw.hawk.hma.tcp.key.password`	Encrypted key password
	`bw.hawk.hma.tcp.trust.store.password`	Password for the trust store file
	Note: You can use the `tibhawkpassword` utility at `<HAWK_HOME>/bin` to encrypt the password. For all TLS or SSL parameters listed above, use the password without double quotes. For more information about the `tibhawkpassword` utility, see *TIBCO® Operational Intelligence Hawk® RedTail Installation, Configuration, and Administration*.	
	`bw.hawk.hma.tcp.ssl.protocol`	Protocol for a secure connection. Default value: `TLSv1.2`
	`bw.hawk.hma.tcp.enabled.algorithms`	Algorithm to be used for the security protocol. Default value: `TLS_RSA_WITH_AES_128_CBC_SHA`
(Optional) Prefix for the	`bw.hawk.hma.microagent.prefix`	Specifies the prefix for the

Configuration	Properties
microagent name	microagent name. The default value is used if no value is specified. Default value: `AppNode name`

4. Save the file.

5. Stop the AppNodes if running.

6. Use the `bwadmin config` command to push the configuration to the AppSpace:

```
bwadmin config -d <domain_name> -a <AppSpace_name> -cf
<temporaryLocation>/config.ini
```

7. If you are running ActiveMatrix BusinessWorks in Enterprise mode, start the `bwagent` if it is not running.

   For more information about starting `bwagent`, see TIBCO ActiveMatrix BusinessWorks™ documentation.

8. Start the Hawk Agent if it is not running. For more information about starting the Hawk Agent, see TIBCO® Operational Intelligence Hawk® RedTail documentation.

9. Restart the AppNode instances.

10. Upload and deploy the application archive (EAR) file to the AppSpace. Start the application.

Result

Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6 and its methods are listed on the **Microagents** tab for the `bwagent`. For more information about viewing microagents on the UI, see TIBCO® Operational Intelligence Hawk® RedTail documentation.

Methods of Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6

The following methods for Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6 are available to monitor ActiveMatrix BusinessWorks applications:

AppNode, Application, Component Methods

- AppNodeRuntimeStateInfo
- GetBWAppNodeProcessInfo
- GetBWEngineInfo
- GetBWProcessInstanceCount
- GetBWProcessInstanceInfo
- GetRecoverableProcesses
- ListBWApplications
- GetApplicationDetails
- StartBWApplication
- StopBWApplication
- RemoveRecoverableProcesses
- RestartRecoverableProcesses
- SuspendBWComponent
- ResumeBWComponent

Statistics Collection

- EnableBWProcessStatisticsCollection
- DisableBWProcessStatisticsCollection

- GetBWActivityStatistics

- GetBWProcessStatistics

- ListBWProcessesEnabledForStatistics

- ResetBWProcessStatistics

- ResetBWActivityStatistics

- ResetAllBWProcessStatistics

- GetComponentStatus

- GetVersion

JVM Methods

- GetVirtualMachineInfo

- GetThreadInfo

- GetMemoryPoolInfo

Event Subscription Methods

- addTracing

- getTracing

- removeTracing

- onProcessEvent

- onActivityEvent

- onTransitionEvent

AppNodeRuntimeStateInfo

Retrieves information about the runtime state of the ActiveMatrix BusinessWorks AppNode.

Arguments

None

Returns

Item	Description
AppNode Name	Name of the AppNode
AppNode State	State of the AppNode
Config State	Config state of the AppNode
AppSpace Name	Name of the AppSpace
System Process Id	System process ID of the AppNode
Up Since	Time since the AppNode process is running

GetBWAppNodeProcessInfo

Retrieves information about system processes of the ActiveMatrix BusinessWorks AppNode.

Arguments

None

Returns

Item	Description
AppNode Name	Name of the AppNode
System Process ID	System process ID of the AppNode
Active Thread Count	Number of active threads on the AppNode
Total Memory	Total memory allocated to the AppNode process (in bytes)

Item	Description
Used Memory	Memory used by the AppNode process (in bytes)
Free Memory	Total available memory for the AppNode process (in bytes)
Used Memory Percentage	Percentage of memory used by the AppNode process
Used CPU Percentage	Percentage of CPU used by the AppNode process
Up Since	Time since the AppNode process is running

GetBWEngineInfo

Retrieves information about the ActiveMatrix BusinessWorks engine currently installed on the AppNode.

Arguments

None

Returns

Item	Description
Name	Name of the engine
Thread Count	Number of engine threads
Step Count	Engine step count
Debugger Interface	Debugger interface if debugging is enabled
Debugger Port	Debugger port if debugging is enabled

Item	Description
Persistence Mode	Engine persistence mode
Group Name	Name of the engine group when the engine is configured for the Datastore persistence mode.
Group Provider Technology	Technology used by the engine to communicate when the engine is configured for the Datastore persistence mode.
State	Current engine state
Errors	List of errors if engine failed to start

GetBWProcessInstanceCount

Returns the total number of running process instances for an application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	No
Application Version	Version of the application. If not configured, all versions of the application are considered.	No
Process Name	Name of the process. If not configured, the process instances of all running processes in the application are returned.	No

Returns

Argument Name	Description
Total Running Processes	Total number of currently executing process instances

GetBWProcessInstanceInfo

Returns details about the running process instances for an application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	No
Application Version	Version of the application. If not configured, all versions of the application are considered.	No
Process ID	Process Instance ID. If configured, the details about the matching process instance are returned. If not configured, the details about all active process instances in a given application are returned.	No
Process Name	Name of the process. If configured, the details about all process instances for a given process are returned. If not configured, the details about process instances of all running processes in a given application are returned.	No

Returns

Item	Description
Process ID	ID for the process instance
Process Name	Name of the process definition used by the process instance
Parent Process Name	Name of the parent process definition
Main Process Name	Name of the main process definition
Application Name	Name of the application
Application Version	Version of the application
Status	Status of the process instance
StartTime	Time when the process instance started
Duration	Elapsed clock time (in milliseconds) since the process instance started

GetRecoverableProcesses

Retrieves information of ActiveMatrix BusinessWorks processes which are potentially recoverable for the specific ActiveMatrix BusinessWorks application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes

Returns

Item	Description
Process ID	ID of the process instance
Application Name	Name of the application
Application Version	Version of the application
Module Name	Name of the module
Module Version	Version of the module
Process Name	Name of the process
Status	Status of the process instance
Duplicate Key	A key value that is used to compare with other process instances to determine whether another process instance with the same `duplicateKey` value already exists.

ListBWApplications

Returns a list of ActiveMatrix BusinessWorks applications deployed on the AppNode.

Arguments

None

Returns

Item	Description
Name	Name of the application
Version	Version of the application
Application Module	Name and version of application module included in the application
Shared Module	Name and version of shared modules included in the application
State	State of the application

GetApplicationDetails

Returns details of ActiveMatrix BusinessWorks applications deployed on the AppNode.

Arguments

None

Returns

Item	Description
Name	Name of the application
Version	Version of the application
Application Module	Name and version of the application module included in the application
Shared Module	Name and version of the shared modules included in the application
State	State of the application

Item	Description
Domain	Domain name of the application
AppSpace	Name of the AppSpace on which the application is deployed
AppNode	Name of the AppNode on which the application is running

StartBWApplication

Starts the specified ActiveMatrix BusinessWorks application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes

Returns

None

StopBWApplication

Stops the specified ActiveMatrix BusinessWorks application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes

Returns

None

RemoveRecoverableProcesses

Removes the specified recoverable ActiveMatrix BusinessWorks process instance from the list of potential recoverable processes. After executing this method, the checkpoint data of the specified process instance is removed and the process instance is no longer recoverable.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	No
Application Version	Version of the application. If not configured, all versions of the application are considered.	No
Process ID	Process Instance ID. If a valid value is specified, the process with matching process instance ID is removed.	No

Returns

None

RestartRecoverableProcesses

Restarts the recoverable process for specified ActiveMatrix BusinessWorks application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application. If not configured, all versions of the application are considered.	Yes
Process ID	Process Instance ID. If a valid value is specified, the process with matching process instance ID is restarted.	No

Returns

None

SuspendBWComponent

Suspends the specific component inside an ActiveMatrix BusinessWorks application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes
Component Name	Name of the component	Yes

Returns

None

ResumeBWComponent

Resumes the specific component inside an ActiveMatrix BusinessWorks application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes
Component Name	Name of the component	Yes

Returns

None

EnableBWProcessStatisticsCollection

Enables statistics collection for the processes in a given application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	No

Argument Name	Description	Required?
Application Version	Version of the application	No
Process Name	Name of the process. If not configured, the instrumentation is enabled for all processes in the application.	No

Returns

None

DisableBWProcessStatisticsCollection

Disables statistics collection for the processes in a given application.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	No
Application Version	Version of the application	No
Process Name	Name of the process. If not configured, the instrumentation is disabled for all processes in the application.	No

Returns

None

GetBWActivityStatistics

Retrieves statistics about the activities of processes that have been executed for a given application since the instrumentation was enabled.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	No
Application Version	Version of the application	No
Process Name	Name of the process. If not configured, the statistics for all activities in all processes in the application are retrieved.	No

Returns

Item	Description
Process Name	Name of the process definition
Activity Name	Name of the activity
Application Name	Name of the application
Application Version	Version of the application
Execution Count	Number of times the activity has been executed
Elapsed Time	Total clock time (in milliseconds) used by all executions of this activity. This

Item	Description
	includes waiting time for Sleep, Call Process, and Wait For... activities.
Execution Time	Total clock time (in milliseconds) used by all executions of this activity. This does not include waiting time for Sleep, Call Process, and Wait For... activities.
Error Count	Total number of executions of the activity that have returned an error
Last Return Code	Status code returned by most recent execution of this activity. This can be either OK, DEAD, or ERROR.
Min Elapsed Time	Elapsed clock time (in milliseconds) of the activity execution that has completed in the shortest amount of elapsed time
Max Elapsed Time	Elapsed clock time (in milliseconds) of the activity execution that has completed in the longest amount of elapsed time
Min Execution Time	Execution time (in milliseconds) of the activity execution that has completed in the shortest amount of execution time
Max Execution Time	Execution time (in milliseconds) of the activity execution that has completed in the longest amount of execution time
Most Recent Elapsed Time	Elapsed clock time (in milliseconds) of the most recently completed activity execution
Most Recent Execution Time	Execution time (in milliseconds) of the most recently completed activity execution
Execution Count Since Reset	Number of activity executions that have completed since the last reset of the statistics

GetBWProcessStatistics

Retrieves statistics about the processes that have been executed for a given application since the instrumentation was enabled.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	No
Application Version	Version of the application	No
Process Name	Name of the process. If not configured, the statistics for all processes in the application are retrieved.	No

Returns

Item	Description
Process Name	Name of the process definition
Main Process Name	Name of the main process
Application Name	Name of the application
Application Version	Version of the application
Module Name	Name of the module

Item	Description
Module Version	Version of the module
Created	Number of process instances created for this process definition
Suspended	Number of times process instances have been suspended
Failed	Number of times process instances have failed
Completed	Number of process instances that have been successfully completed
Total Execution	Total execution time (in milliseconds) for all successfully completed process instances
Average Execution	Average execution time (in milliseconds) for all successfully completed process instances
Total Elapsed	Total elapsed clock time (in milliseconds) for all successfully completed process instances
Average Elapsed	Average elapsed clock time (in milliseconds) for all successfully completed process instances
Min Elapsed	Elapsed clock time (in milliseconds) of the process instance that has completed in the shortest amount of elapsed time
Max Elapsed	Elapsed clock time (in milliseconds) of the process instance that has completed in the longest amount of elapsed time
Min Execution	Execution time (in milliseconds) of the process instance that has completed in the shortest amount of execution time
Max Execution	Execution time (in milliseconds) of the process instance that has completed in the longest amount of execution time
Most Recent Execution Time	Execution time (in milliseconds) of the most recently completed process instance

Item	Description
Most Recent Elapsed Time	Elapsed clock time (in milliseconds) of the most recently completed process instance
Count Since Reset	Number of process instances that have completed since the last reset of the statistics

ListBWProcessesEnabledForStatistics

Lists all processes currently enabled for statistics collections on the AppNode.

Arguments

None

Returns

Argument Name	Description
Application Name	Name of the application
Application Version	Version of the application
Process Name	Name of the process. The value [*] indicates that instrumentation is enabled for all processes in the application.

ResetBWProcessStatistics

Resets the minimum, maximum, and average time statistics gathered for the process.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes
Process Name	Name of the process. If not configured, the statistics are reset for all processes in the application.	No

Returns

None

ResetBWActivityStatistics

Resets the minimum, maximum, and average time statistics gathered for each activity in the specified process.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes
Process Name	Name of the process. If not configured, the statistics are reset for all activities for all processes in the application.	No

Returns

None

ResetAllBWProcessStatistics

Resets all statistics gathered for the specified process.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes
Process Name	Name of the process. **Note:** If not specified, all statistics are reset for all processes in the application.	No

Returns

None

GetComponentStatus

Returns details of ActiveMatrix BusinessWorks components based on the provided arguments.

Arguments

Argument Name	Description	Required?
Application Name	Name of the application	Yes
Application Version	Version of the application	Yes
Component Name	Name of the component. If not specified, the details of every component in the application is returned.	No

Returns

Item	Description
Name	Name of the component
State	State of the component
Activation status	Activation status of the component
Starter state	Starter state of the component

GetVersion

Returns the version number of Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6.

Arguments

None

Returns

Item	Description
Version	Version of Hawk Microagent for TIBCO ActiveMatrix BusinessWorks 6

GetVirtualMachineInfo

Detects all the Java Virtual Machines started by a user on the local machine and retrieves their detailed information.

Arguments

None

Returns

Item	Description
Name	The name representing the running Java Virtual Machine
Domain	Domain name of the application
AppSpace	Name of the AppSpace on which the application is deployed
AppNode	Name of the AppNode on which the application is running
Start Time	The start time of the Java Virtual Machine in milliseconds
Up Time	The uptime of the Java Virtual Machine in milliseconds
VM Name	The Java Virtual Machine implementation name
VM Vendor	The Java Virtual Machine implementation vendor
Version	The Java Virtual Machine implementation version

Item	Description
Current Heap Size	The size of used memory in bytes
Committed Memory	The size of memory in bytes that is committed for the Java Virtual Machine to use
Maximum Heap Size	The maximum size of memory in bytes that can be used for memory management
Free Heap Size	The amount of free memory in bytes
Non-Heap Memory Used	The amount of used non-heap memory in bytes
Live Threads	The current number of live threads including both daemon and non-daemon threads
Peak Threads	The peak live thread count since the Java Virtual Machine was started or peak was reset
Daemon Threads	The current number of live daemon threads
Total Threads Started	The total number of threads created and started since the start of Java Virtual Machine
Current classes loaded	The number of classes currently loaded into Java Virtual Machine
Total classes loaded	The total number of classes loaded since the start of Java Virtual Machine execution
Total classes unloaded	The total number of classes unloaded since the start of Java Virtual Machine execution

GetThreadInfo

Returns the details of a specific thread or all threads running on a particular Java Virtual Machine such as execution information, synchronization statistics of a specific thread or all

threads.

Arguments

Argument Name	Description	Required?
ThreadName	The thread name. Empty argument string provides information on all running Java Virtual Machine threads.	No

Returns

Item	Description
Thread Name	The name of the thread
Domain	Domain name of the application
AppSpace	Name of the AppSpace on which the application is deployed
AppNode	Name of the AppNode on which the application is running
Thread ID	The ID of the thread
Thread State	The state of the thread
User Time	CPU time spent by the thread in user mode in nanoseconds
isInNative	Specifies whether it is running native code through the Java Native Interface (JNI)
Suspended	Specifies whether the thread is suspended
Blocked Count	The total number of attempts that the thread is blocked to enter or re-enter a monitor
Blocked Time	The approximate accumulated elapsed time (in milliseconds) that the thread has blocked to enter or re-enter a monitor since the enabling

Item	Description
	of thread contention monitoring
Lock Name	The string representation of the monitor lock that the thread is blocked to enter or waiting to be notified
Lock Owner Name	The thread name that holds the monitor lock of an object on which the thread is blocked
Lock Owner Id	The thread ID that holds the monitor lock of an object on which the thread is blocked
Waited Count	The total count of the number of times the thread waited for notification
Waited Time	The approximate accumulated elapsed time (in milliseconds) that the thread has waited for notification since the enabling of thread contention monitoring
UncaughtException	Uncaught exception of the thread
StackTrace	Displays stack trace when an exception was thrown

GetMemoryPoolInfo

Returns the details of memory pools of the Java Virtual Machine process started by a user on a local computer.

Arguments

None

Returns

Item	Description
Memory Pool Name	The name of the memory pool
Domain	Domain name of the application
AppSpace	Name of the AppSpace on which the application is deployed
AppNode	Name of the AppNode on which the application is running
Peak Usage Committed	Peak Usage Committed
Peak Usage Init	Initial Peak Usage
Peak Usage Max	Maximum Peak Usage
Peak Usage Used	Peak Usage Used
Memory Pool type	Type of the memory pool
Current Usage Committed	Current Usage Committed
Current Usage Init	Initial Current Usage
Current Usage Max	Maximum Current Usage
Current Usage Used	Current Usage Used

addTracing

Adds tracing for the specified parameters. Use either asterisk (*) or exact names.

> **Note:** Adding multiple traces, especially Activity Payloads, impacts the application performance. Enable tracing only for debugging or troubleshooting purposes.

Arguments

Argument Name	Description	Required?
ApplicationName	Name of the application	Yes
ApplicationVersion	Version of the application	Yes
ProcessName	Name of the process	Yes
ActivityName	Name of the activity	Yes
TransitionName	Name of the transition	Yes
ActivityPayload	Enable collection of 'Activity Payloads'. (True or False)	Yes

Returns

Item	Description
TraceId	Unique identifier for the trace

getTracing

Get a list of all traces with their details.

Arguments

Argument Name	Description	Required?
TraceId	Unique identifier for the trace	No

Returns

Item	Description
TraceId	Unique identifier for the trace
ActivityPayload	Trace Activity Payload (True or False)
TransitionName	Name of the transition
ProcessName	Name of the process
ActivityName	Name of the activity

removeTracing

Removes Trace for given traceId.

Arguments

Argument Name	Description	Required?
TraceId	Unique identifier for the trace	Yes

Returns

None

onProcessEvent

Gives information about each ActiveMatrix BusinessWorks process event from the EventBus. Use `addTracing` to get relevant ActiveMatrix BusinessWorks process events.

Arguments

None

Returns

Item	Description
Type	Type of the event
ApplicationName	Name of the application
ApplicationVersion	Version of the application
ComponentName	Name of the component
ModuleName	Name of the ActiveMatrix BusinessWorks module
ModuleVersion	Version of the ActiveMatrix BusinessWorks module
Timestamp	Time stamp when the data was received
ComponentProcessName	Name of process configured to a component. If the process is a non-inlined subprocess, this could be empty
CustomJobId	Custom JobID for the process instance
JobId	Job ID of the process
ParentProcessInstanceId	If the process is an inlined sub process, the instance ID of the parent process.
ParentProcessName	If the process is an inlined sub process, the name of the parent process.
ProcessInstanceEndTime	Process instance end time
ProcessInstanceFaultMsg	Process instance fault message

Item	Description
ProcessInstanceFaultStack	Process instance fault stack
ProcessInstanceFaultCauseMsg	Process instance fault cause message
ProcessInstanceFaultCauseStack	Process instance fault cause stack
ProcessInstanceId	Instance ID of the process
ProcessInstanceStartTime	Process instance start time
ProcessInstanceState	State of process instance
ProcessName	Name of the process
BWTimestamp	Time stamp when the event occurred
TraceId	Unique identifier for the trace

onActivityEvent

Gives information of each ActiveMatrix BusinessWorks activity event from the EventBus. Use `addTracing` to get relevant ActiveMatrix BusinessWorks activity events.

Arguments

None

Returns

Item	Description
Type	Type of the event
ApplicationName	Name of the application

Item	Description
ApplicationVersion	Version of the application
ComponentName	Name of the component
ModuleName	Name of the ActiveMatrix BusinessWorks module
ModuleVersion	Version of the ActiveMatrix BusinessWorks module
Timestamp	Time stamp when the data was received
ActivityEndTime	When the activity instance ended
ActivityEvalTime	The time between the beginning and end of the evaluation period for the activity. If the activity completes in one step, the `evalTime` and `elapsedTime` would be the same. However, some activities, such as Request, Reply, or Wait for... activities typically do not complete in one step.
ActivityExecutionId	Activity execution Identifier
ActivityName	Name of the activity
ActivityStartTime	When the activity instance started
ActivityState	State of the activity, Completed, Faulted, or Canceled
IterationCount	Number of iterations activity has performed
ParentActivityExecutionId	Parent activity execution identifier
ProcessInstanceId	Instance ID of the process
ProcessName	Name of the process
BWTimestamp	Time stamp when the event occurred
SerializedInputDataLength	Serialized input data length (if Activity Payload is enabled in

Item	Description
	`addTracing` method)
SerializedInputDataArray	Serialized input data array (if Activity Payload is enabled in `addTracing` method)
SerializedOutputDataLength	Serialized output data length (if Activity Payload is enabled in `addTracing` method)
SerializedOutputDataArray	Serialized output data array (if Activity Payload is enabled in `addTracing` method)
LoopStructure	Loop used for iterating ActiveMatrix BusinessWorks activity
TraceId	Unique identifier for the trace

onTransitionEvent

Gives information of each ActiveMatrix BusinessWorks activity transition event from the EventBus. Use `addTracing` to get the relevant ActiveMatrix BusinessWorks transition events.

Arguments

None

Returns

Item	Description
Type	Type of the event
ApplicationName	Name of the application
ApplicationVersion	Version of the application

Item	Description
ComponentName	Name of the component
ModuleName	Name of the ActiveMatrix BusinessWorks module
ModuleVersion	Version of the ActiveMatrix BusinessWorks module
Timestamp	Time when the data is received
ProcessInstanceId	Instance ID of the process
ProcessName	Name of the process
TransitionName	Name of the transition
TraceId	Unique identifier for the trace

Error Codes

This section describes the error messages that can be reported by the Hawk microagents.

Error Codes	Error Message	Error Resolution
TIBCO-BW-HAWK-HMA-000001	{0}	
TIBCO-BW-HAWK-HMA-100001	{0}	
TIBCO-BW-HAWK-HMA-200001	{0}	
TIBCO-BW-HAWK-HMA-200002	The BW HAWK MicroAgent [{0}] is enabled on the AppNode [{1}]	
TIBCO-BW-HAWK-HMA-200003	The BW HAWK MicroAgent [{0}] is started on the AppNode [{1}]	

Error Codes	Error Message	Error Resolution
TIBCO-BW-HAWK-HMA-200004	The BW HAWK MicroAgent [{0}] is stopped on the AppNode [{1}]	
TIBCO-BW-HAWK-HMA-300001	{0}	
TIBCO-BW-HAWK-HMA-400001	{0}	
TIBCO-BW-HAWK-HMA-500001	{0}	
TIBCO-BW-HAWK-HMA-500002	Unable to enable BW HAWK MicroAgent on the AppNode [{0}].{1} CausedBy:{2}	This could happen due to various reasons, for example, Missing TIBCO Rendezvous libraries. Check AppNode logs for more details.
TIBCO-BW-HAWK-HMA-500003	Unable to stop BW HAWK MicroAgent on the AppNode [{0}]. Check AppNode logs for more details. CausedBy:{1}	Check AppNode logs for more details.

TIBCO Documentation and Support Services

For information about this product, you can read the documentation, contact TIBCO Support, and join TIBCO Community.

How to Access TIBCO Documentation

Documentation for TIBCO products is available on the TIBCO Product Documentation website, mainly in HTML and PDF formats.

The TIBCO Product Documentation website is updated frequently and is more current than any other documentation included with the product.

Product-Specific Documentation

The following documentation for this product is available on the TIBCO Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks™ 6 Product Documentation page:

- *TIBCO Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks™ 6 Release Notes*

- *TIBCO Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks™ 6 Installation*

- *TIBCO Hawk® Microagent for TIBCO ActiveMatrix BusinessWorks™ 6 User's Guide*

To directly access documentation for this product, double-click the following file:

TIBCO_HOME/release_notes/TIB_hkbw6_6.7.2_docinfo.html

where *TIBCO_HOME* is the top-level directory in which TIBCO products are installed. On Windows, the default *TIBCO_HOME* is C:\tibco. On UNIX systems, the default *TIBCO_HOME* is /opt/tibco.

How to Contact TIBCO Support

Get an overview of TIBCO Support. You can contact TIBCO Support in the following ways:

- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the TIBCO Support website.

- For creating a Support case, you must have a valid maintenance or support contract

with TIBCO. You also need a user name and password to log in to TIBCO Support website. If you do not have a user name, you can request one by clicking **Register** on the website.

How to Join TIBCO Community

TIBCO Community is the official channel for TIBCO customers, partners, and employee subject matter experts to share and access their collective experience. TIBCO Community offers access to Q&A forums, product wikis, and best practices. It also offers access to extensions, adapters, solution accelerators, and tools that extend and enable customers to gain full value from TIBCO products. In addition, users can submit and vote on feature requests from within the TIBCO Ideas Portal. For a free registration, go to TIBCO Community.

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