TIBCO Hawk ActiveMatrix® Plug-in

User's Guide

Software Release 1.2
August 2012

Two-Second Advantage®

Important Information

Contents

Preface

The TIBCO Hawk ActiveMatrix® Plug-in software enables TIBCO Hawk to monitor and manage TIBCO ActiveMatrix software.

Topics

Related Documentation

This section lists documentation resources you may find useful.

TIBCO Hawk ActiveMatrix Plug-in Documentation

The following documents form the TIBCO Hawk ActiveMatrix Plug-in documentation set:

- *TIBCO Hawk ActiveMatrix Plug-in Installation and Configuration* Read this book first. It contains step-by-step instructions for installing TIBCO Hawk ActiveMatrix Plug-in software on various operating system platforms. It also describes how to configure the software for specific applications, once it is installed.
- *TIBCO Hawk ActiveMatrix Plug-in User's Guide* Read this manual for detailed information about the features of this plug-in.
- *TIBCO Hawk ActiveMatrix Plug-in Release Notes* Read the release notes for a list of features. This document also contains lists of known issues for this release.

Other TIBCO Product Documentation

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

- TIBCO Hawk® software
- TIBCO ActiveMatrix® Service Grid software
- TIBCO ActiveMatrix BusinessWorks™ Service Engine software

Third-Party Documentation

- Apache ANT documentation - Useful for working with rulebases.

Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
TIBCO_HOME	Many TIBCO products can be installed within the same directory. This directory is referenced in documentation as TIBCO_HOME. The value of TIBCO_HOME depends on the operating system. For example, on Windows systems, the default value is `C:\tibco`.
CONFIG_HOME	A TIBCO configuration folder stores configuration data generated by TIBCO products. Configuration data can include sample scripts, session data, configured binaries, logs, and so on. This folder is referenced in documentation as CONFIG_HOME or for TIBCO Hawk as HAWK_CONFIG.
HAWK_HOME	TIBCO Hawk installs into a directory within <*TIBCO_HOME*> that may be different to the TIBCO_HOME where ActiveMatrix is installed. 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\4.9`.
HKAM_ROOT	TIBCO Hawk ActiveMatrix Plug-in installs into a directory within <*HAWK_HOME*>. This directory is referenced in documentation as *HKAM_ROOT*. The default value of *HKAM_ROOT* depends on the operating system. For example on Windows systems, the default value is `C:\tibco\hkam\1.2`.
`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.
`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]`

Table 1 General Typographical Conventions (Cont'd)

Convention	Use
italic font	Italic font is used in the following ways: • To indicate a document title. For example: See *TIBCO ActiveMatrix 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 destination 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

After you join TIBCOmmunity, you can access the documentation for all supported product versions here:

http://docs.tibco.com/TibcoDoc

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 Introduction

This chapter introduces TIBCO Hawk ActiveMatrix Plug-in.

Topics

Overview

TIBCO Hawk ActiveMatrix Plug-in provides features to monitor and manage TIBCO ActiveMatrix host and node processes, as well as TIBCO ActiveMatrix services and components.

These features can be realized by several Hawk microagents:

- The ActiveMatrix Host Microagent
- The ActiveMatrix Services Microagent
- Common Logging Event Publisher Microagent

The Host Microagent enables simple monitoring and management of the TIBCO Host process, by providing basic status information about the host and nodes managed by the host.

The Service Microagent allows for monitoring of status and performance statistics of service components and bindings running on a node. The performance statistics provided are of short duration (in the last five minutes) and include metrics such as hits, faults, and average response time.

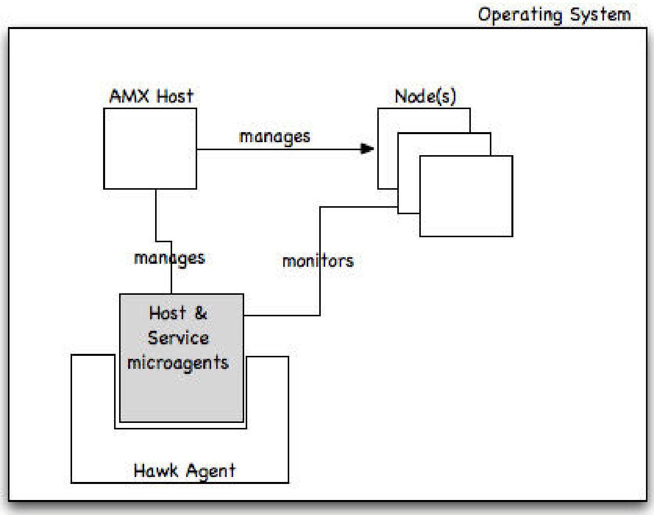
The Common Logging Event Publisher Microagent enables Hawk microagents to connect to the ActiveMatrix Common Logging Service, to provide events for logging purposes.

Figure 1 illustrates how the Host and Service Microagents interact with the ActiveMatrix host and nodes.

The Host and Service Microagents are TIBCO Hawk Plug-in microagents and they are started as part of the Hawk Agent process.

These microagents require the Hawk HMA to be running to function correctly.

Figure 1 Overview of ActiveMatrix Host and Service Microagents



Features of TIBCO Hawk ActiveMatrix Plug-in

TIBCO Hawk ActiveMatrix Plug-in consists of the following features.

ActiveMatrix Host Microagent and Service Microagent

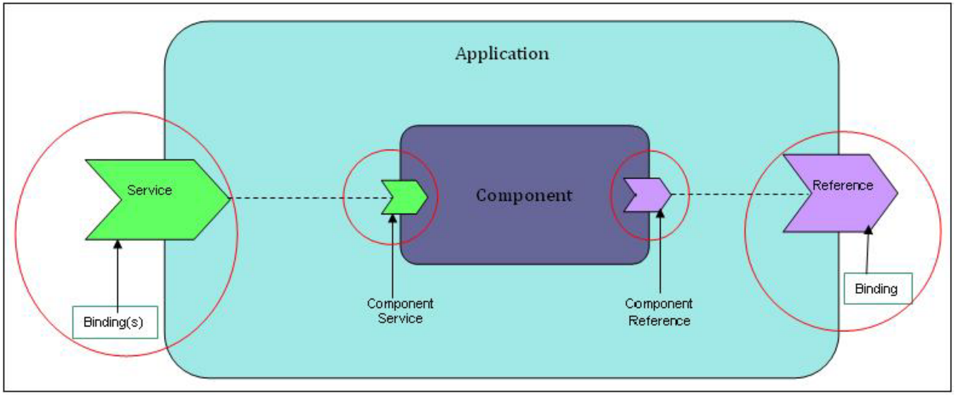
The ActiveMatrix Host Microagent enables the monitoring and management of TIBCO ActiveMatrix host and nodes running on each local machine. It provides methods to retrieve node status and host status, as well as control methods to start or stop nodes.

The ActiveMatrix Service Microagent provides the following monitoring capabilities:

- Monitor status of Component and Binding instances deployed in a node.
- Monitor execution statistics of service binding(s), reference binding, component services and component references of a deployed ActiveMatrix 3 Application.

Figure 2 describes the various monitoring points for which execution statistics are available.

Figure 2 Monitoring Points for Available Execution Statistics



This diagram is representative of a typical ActiveMatrix 3.x Application (an Open SOA SCA Assembly). The indicated monitoring points (the arrows in Figure 2) are the parts of the deployed application for which the ActiveMatrix Service Microagent will provide statistics data.

For details on the metrics provided at each monitoring point, refer to the Service Execution Stats section in Chapter 4, ActiveMatrix Service Microagent.

Monitoring Architecture

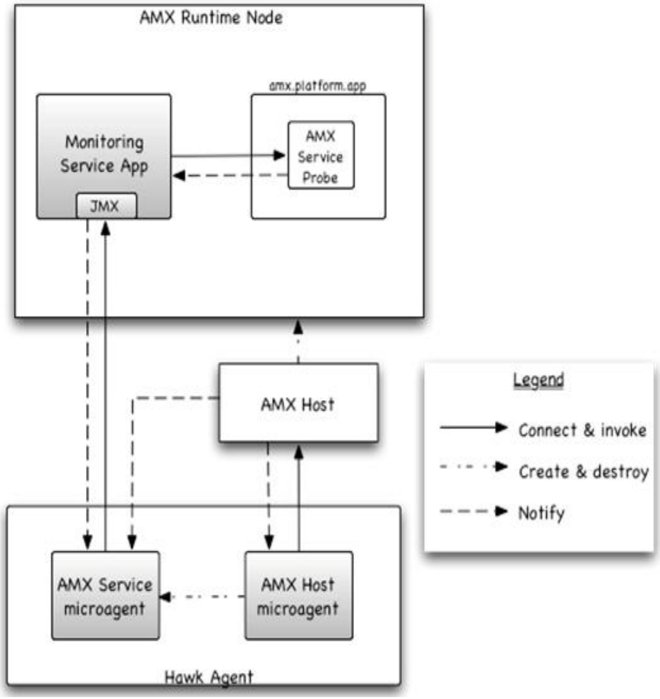
The Host microagent is also responsible for the lifecycle of the ActiveMatrix Service microagent. The ActiveMatrix Service microagent is designed to monitor services deployed in the ActiveMatrix node and it is integrated with ActiveMatrix Host microagent.

The ActiveMatrix Host microagent creates instances of the Service Microagent for each node (on node start) associated with ActiveMatrix host, and destroys these instances on Node stop.

In order to collect service operation statistics on each node, the Service microagent requires the deployment of an ActiveMatrix 3 Monitoring Application to each node that this microagent is required to monitor.

The architecture of the Host and Service microagent and the interaction with the partnering Monitoring Application is shown in Figure 3.

Figure 3 Monitoring Architecture of ActiveMatrix Host and Service Microagents



The Service microagent connects to a node process using Java Attach API. Statistics data can then be retrieved using either synchronous or asynchronous method invocations.

In either approach, the Service microagent connects to the Monitoring Application's JMX MBean to retrieve the service operation statistics data.

ActiveMatrix 3.2 Monitoring Service Application

The ActiveMatrix 3.2 Monitoring Service application is an ActiveMatrix Application with Java implementation that provides the Service Microagent with access to, or notification of service execution statistics.

The Monitoring Service application provides some configuration capabilities, which can be set in either the TIBCO ActiveMatrix Administrator, or the ActiveMatrix Service Microagent. This monitoring configuration is described in the section Monitoring Configuration, and in details in the method changeMonitoringConfig in Chapter 4, ActiveMatrix Service Microagent.

Monitoring Configuration

The monitoring configuration offered by the Monitoring Service application enables the configuration of a rolling window for statistics collection (see Figure 4).

The maximum length of a rolling window is 5 minutes, but this is configurable.

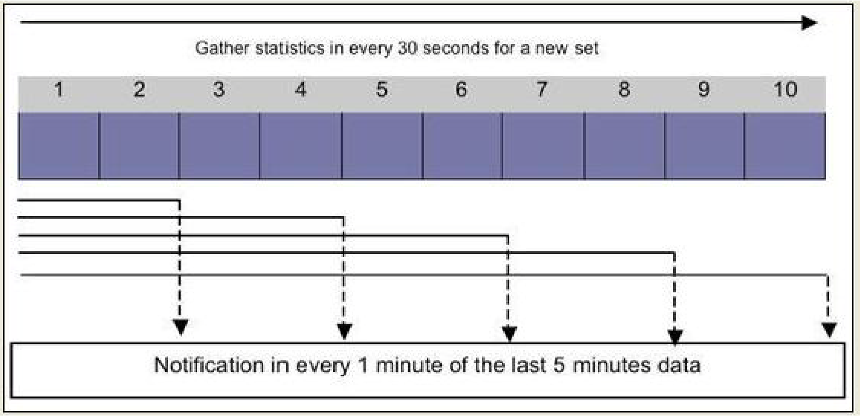
Configuration properties are:

- **Rolling Window Length** - length of rolling window (in seconds, up to 5 minutes)
- **Statistics gathering interval** - length of a bucket (in seconds)
- **Notification interval** - rate at which statistics data is published (via notification)
- **Is Partial Window** - whether to include the current statistics data (incomplete bucket) in notifications.

For example, the configuration settings to produce the diagram (Figure 4) would be:

- Rolling Window Length = 300
- Statistics gathering interval = 30
- Notification interval = 60
- Is Partial Window = false

Figure 4 5 Minute Rolling Window (10 Buckets)


Gather statistics in every 30 seconds for a new set
1
2
3
4
5
6
7
8
9
10
Notification in every 1 minute of the last 5 minutes data

Common Logging Event Publisher Microagent

This microagent publishes events from TIBCO Hawk using the TIBCO Common Logging in the Base Event Format (BEF)/Common Base Event (CBE).

This version replaces the earlier microagent first released with Hawk 4.9.0.

Chapter 2 ActiveMatrix Host Microagent

This chapter provides detailed information about the ActiveMatrix Host Microagent.

Topics

com.tibco.hawk.amx.AMXHostMicroAgent

Microagent

Purpose Allows monitoring and managing of TIBCO ActiveMatrix Host Instance running in the local machine.

Methods

Method	Description	Page
isHostRunning	Pings the ActiveMatrix Host and returns "true" or "false".	12
getHostInfo	Returns the details of ActiveMatrix Host instance running in the local machine.	13
getNodeInfo	Returns the details of a particular node or all nodes associated with the ActiveMatrix Host instance.	16
onHostEvent	Provides notification on the runtime state of a TIBCO Host is changed.	20
onNodeEvent	Provides notification on the runtime state of node which is changed for a particular node or all nodes associated with TIBCO Host. If the Node Name argument is empty, then the method provides notification for all nodes associated with the Host.	23
startNode	Start the ActiveMatrix Node.	25
stopNode	Stop the ActiveMatrix Node.	26

AMXHost Microagent Configuration File

```
File name : AMXHostPluginConfig.xml
Content
<?xml version="1.0" encoding="UTF-8"?>
<AMXHostConfiguration
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

```
xsi:noNamespaceSchemaLocation="AMXHostPluginConfig.xsd">

<HPAClientConfigPropFile>%TIBCO_HAWK_HOME_ESC%/plugin/amx/hpaclien
tconfig.properties</HPAClientConfigPropFile>
<MethodTimeout>10</MethodTimeout>
<HostProcessPrefix>tibcohost*</HostProcessPrefix>
<NodeProcessPrefix>tibamx_*</NodeProcessPrefix>
</AMXHostConfiguration>

XSD Configuration file : AMXHostPluginConfig.xsd
Content :
<?xml version = "1.0" encoding = "UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
elementFormDefault="qualified">
<xsd:element name="AMXHostConfiguration"
type="AMXHostConfigurationType" />
<xsd:complexType name="AMXHostConfigurationType">
<xsd:sequence>

<xsd:element ref="MicroAgentName" />
<xsd:element ref="MicroAgentDisplayName" />
<xsd:element ref="MicroAgentDesc" />

<xsd:element ref="MethodTimeout" />
<xsd:element ref="HPAClientConfigPropFile" />
<xsd:element ref="HostProcessPrefix" />
<xsd:element ref="NodeProcessPrefix" />
</xsd:sequence>
</xsd:complexType>

<xsd:element name="MicroAgentName" type="xsd:string" default="" />
<xsd:element name="MicroAgentDisplayName" type="xsd:string"
default="" />
<xsd:element name="MicroAgentDesc" type="xsd:string" default="" />

<xsd:element name="HPAClientConfigPropFile" type="xsd:string"
default="hpaclientconfig.properties" />

<xsd:element name="MethodTimeout" type="xsd:string" default="10"
/>
```

```
<xsd:element name="HostProcessPrefix" type="xsd:string"
default="tibcohost*" />
<xsd:element name="NodeProcessPrefix" type="xsd:string"
default="tibamx_*" />


</xsd:schema>
```

AMX Host Microagent Configuration

For configuration of AMX Host Microagent, refer to the `readme.txt` available in `plugin/amx`.

isHostRunning

Method

Purpose This method pings the TIBCO ActiveMatrix Host and returns the value as `true` or `false`.

Type Synchronous, `IMPACT_INFO`.

Arguments None.

Returns

Name	Type	Description
Running: true/false	Boolean	Pings the TIBCO ActiveMatrix Host and returns **true** if host is running, or else **false**.

getHostInfo

Method

Purpose This method returns the details of TIBCO ActiveMatrix Host instance running in the local machine.

Type Synchronous, `IMPACT_INFO`.

Arguments None.

Returns

Name	Type	Description
Process ID	String	The Process ID of the TIBCO Host Instance (OS Process ID). Note: ProcessID return "-1", if Host is not running.
Name	String	The name of the ActiveMatrix host (SystemHost).
Type	String	Type of the TIBCO ActiveMatrix host: (TIBCO Host).

Name	Type	Description
Runtime State	String	The state of ActiveMatrix host. • UNKNOWN • NOT_RUNNING • INITIALIZING • INITIALIZING_FAILED • INITIALIZED • STARTING - Starting of the host. The starting state should move to the running state BEFORE the nodes are started. In other words, Host state is independent of Node State. Nodes cannot start unless the Host starts successfully. • STARTING_FAILED - The process of starting failed, the reason on the status will be set. • STOPPING • STOPPED • RUNNING - The host is running successfully. • UNBOUND - The host is not bound to the enterprise. • LOOSING_CONTACT • LOST_CONTACT - Lost contact with a host. Reasons being the host was killed unexpectedly, heartbeats are lost in a flood of traffic, or the network is no logger operational.
Version	String	Version of the TIBCO ActiveMatrix Host.

Name	Type	Description
Time Stamp	String	The time stamp (date and time) of the state changed (For example, from the NOT_RUNNING state to the RUNNING State, the time stamp of the host started and running successfully). Time Stamp returns long value, which is available in Hawk in a readable format of date and time.
Binding Status	String	The binding status of TIBCO Host (for example, bound).
Host Platform Version	String	Platform version of the Host.
Internet Host Name	String	Name of the Internet Host.
OS Name	String	The Operating System name of the machine running the host.
OS Version	String	The Operating System version of the machine running the host.
System Arch	String	System Architecture of the machine running the host.
Stop Reason	String	The reason of the state host is in. It may be null during the normal operation.

getNodeInfo

Method

Purpose This method returns the Node information by the Node Name. If the Node Name argument is blank, then all ActiveMatrix nodes are returned. On providing the Node Name argument, it serves as a regular expression used to filter the nodes returned.

Type Synchronous, `IMPACT_INFO`.

Arguments

Name	Type	Description
Node Name	String	The node name.

Returns

Name	Type	Description
Process ID	String	The Process ID of the ActiveMatrix Node (OS Process ID.) Note: Process ID return "-1", if Node is not running.
Name	String	The name of the Node.
Host	String	The name of the host associated with the node.

Name	Type	Description
Runtime State	String	The actual state of the node as reported by the host. • NOT_RUNNING • INITIALIZING • INITIALIZED • INITIALIZATION_FAILED • STARTING - Starting of the node. The starting state should move to the running state BEFORE the nodes are started. • RUNNING - The node is running successfully. • START_FAILED • STOPPING • STOPPED • LOST_CONTACT - Lost contact with the node. Reasons being the node was killed unexpectedly, or the network is no logger operational. • UNKNOWN

Name	Type	Description
Stop Mode	String	In which mode the node is stopped. Node can be stopped in **`abort`**, **`immediate`** or **`normal`** mode through the ActiveMatrix Admin UI or end the process from the OS or using the API to the Stop Node. • **abort** - The node is killed immediately. This mode is however not supported on all the HPAs. If you attempt to abort a node on a HPA that does not support node abort, the status block for that node shows an "`operation-not-supported`" error. • **immediate** - It implies that the node's infrastructure and applications may not have been able to shut down in a clean manner. This will potentially leave the node in an inconsistent state that will have to be recovered prior to the subsequent successful startup. • **normal** - Implies that all infrastructure and applications running on the node would have completed all or any task(s) normally associated with their shutdown
Stop Reason	String	Stop reason text message. If the end process is from the OS, then reason returned is "OSGI Framework is stopping".
Stop Reason Code	String	Stop reason error code. **Note**: Most of the time it is **Reason null** and **reason code -1**.

Name	Type	Description
Time Stamp	String	The time stamp (date and time) of the state changed (For example, from the NOT_RUNNING state to the RUNNING State, the time stamp of the node started and running successfully). Time Stamp returns long value, which is available in Hawk in a readable format of date and time. **Note**: If an ActiveMatrix node was stopped while starting the Hawk agent, then getNodeInfo() would return 0 in the timestamp column for that particular node.

During the microagent startup, if the node state appears as `Starting in` ActiveMatrix Administrator UI, the `getNodeInfo()` method does not return the correct node state unless the node is restarted.

When the node is restarted (that is, when the microagent receives a `Start` notification from ActiveMatrix Administrator), the microagent returns the correct state of the node.

On Windows, when a node is stopped using "Terminate Node Process" option in the TIBCO ActiveMatrix Administrator, then the last state reported is LOST_CONTACT instead of NOT_RUNNING.

onHostEvent

Method

Purpose This method provides notification of the changed run-time state of a TIBCO Host. This method supports only the subscribe mode.

Type Asynchronous, `IMPACT_INFO`.

Arguments None.

Returns

Name	Type	Description
Process ID	String	The Process ID of the TIBCO Host (OS Process Id)
Name	String	The name of the ActiveMatrix host (AMXAdminHost).
Type	String	The type of the ActiveMatrix host (AMXAdminHost).

Name	Type	Description
Runtime State	String	The state of the ActiveMatrix host. • UNKNOWN • NOT_RUNNING • INITIALIZING • INITIALIZING_FAILED • INITIALIZED • STARTING: The starting of the host. The starting state should move to the running state BEFORE starting the nodes. In other words, Host state is independent of Node State. Nodes can start unless the Host starts successfully. • STARTING_FAILED: The starting process failed and the reason on the status will be set. • STOPPING • STOPPED • RUNNING: The host is running normally. • UNBOUND: The host is not bound to an enterprise. • LOSING_CONTACT • LOST_CONTACT: Lost contact with a host. Reason being the host was killed unexpectedly, heartbeats are lost in a flood of traffic, or the network is no logger operational.
Version	String	Version of the ActiveMatrix Host.

Name	Type	Description
Time Stamp	String	The time stamp (date and time) of the state changed (For example, from the NOT_RUNNING state to the RUNNING State, the time stamp of the Host started and running successfully). Time Stamp returns long value, which is available in Hawk in a readable format of date and time.
Binding Status	String	Status of Host binding.
Host Platform Version	String	Version of Host Platform.
Internet Host Name	String	Internet Host name.
OS Name	String	Operating System name of the host.
OS Version	String	Operating System version of the host.
System Arc	String	System Architecture of the Host.
Stop Reason	String	The reason of the state the host is in. It may be null during the normal operation.

onNodeEvent

Method

Purpose This method provides notification of the run-time state of the node when changed of a particular node or all nodes associated with the TIBCO Host. If the Node Name argument is blank then it provides notification for all nodes associated with the TIBCO Host.

This method supports only subscribe mode.

Type Asynchronous, `IMPACT_INFO`.

Arguments

Name	Type	Description
Node Name	String	The node name.

Returns

Name	Type	
Name	String	The name of the node.
Runtime State	String	The state of the node.
Host Name	String	The name of the host associated with the node.
Stop Mode	String	In which mode the node is stopped. Node can be stopped in **abort**, **immediate** or **normal** mode through the ActiveMatrix Admin UI or end the process from the OS or using the API to the Stop Node.
Stop Reason	String	Stop reason text message.
Stop Reason Code	String	Stop reason error code.

Name	Type	
Time Stamp	String	The time stamp (date and time) of the state changed (For example, from the NOT_RUNNING state to the RUNNING State, the time stamp of the node started and running successfully). Time Stamp returns long value, which is available in TIBCO Hawk in a readable format of date and time.

startNode

Method

Purpose This method starts the TIBCO ActiveMatrix node, if not running.

Type Synchronous, `IMPACT_ACTION`.

Arguments

Name	Type	Description
Node Name	String	The node name.

Exceptions

Condition	Result
If node does not exist.	Throws a `MicroAgentException` with Message “`TIBCO-AMX-HPA-012106: node TestNode does not exist`".
If node is already started/running.	Throws a `MicroAgentException` with Message “Provided node name '<nodename> **already started** for host '<hostname>.

Returns None.

stopNode

Method

Purpose This method stops the TIBCO ActiveMatrix node.

Type Synchronous, `IMPACT_ACTION`.

Arguments

Name	Type	Description
Node Name	String	The node name.
Reason	String	The stop reason text message.
Reason Code	String	The stop reason error code.

Exceptions

Condition	Result
If node does not exist.	Throws a `MicroAgentException` with Message “Provided node name '<nodename> **not found** for host '<hostname>".
If node is already started/running.	Throws a `MicroAgentException` with Message “Provided node name '<nodename> **already stopped** for host '<hostname>.

Returns None.

Chapter 3 Common Logging Event Publisher Microagent

This chapter provides detailed information about the Common Logging Event Publisher Microagent.

Topics

com.tibco.hawk.commonlogging.event.CLEventPublisher

Microagent

Purpose Publishes events from TIBCO Hawk using the TIBCO Common Logging in the Base Event Format (BEF) or Common Base Event (CBE).

Create the Event Definition configuration file with the following definitions:

- What events have to be published (Event Output).
- Event Data Source (from where to get and collect the events).
- Where to publish events (Common Logging Configuration)
- How to publish (Event Subscribe).

Sample event definition is available in the folder `<HAWK_ROOT>/plugin/commonlogging`.

Methods

Method	Description	Page
startPublisher	Start event publisher to publish events from Hawk.	29
stopPublisher	Stop event publisher to publish events from Hawk.	30
startAllPublishers	Start all event publishers that are not started.	31
stopAllPublishers	Stop all event publishers that are started.	32
getEventPublisherInfo	Returns the registered event publisher's information.	33
getEventDataSourceDetails	Returns Event Data Source details.	34
reloadEventDefinitions	Reloads event definitions.	35

CLEvent Publisher Microagent Configuration

For configuration of CLEventPublsiher Microagent, refer to the `readme.txt` available in `plugin/commonlogging`.

startPublisher

Method

Purpose This method starts the event publisher to start publishing events from the TIBCO Hawk based on the Event Publisher Description defined in the Event Definitions file.

Type Synchronous, `IMPACT_ACTION`.

Arguments

Name	Type	Description
Event Publisher Name	String	The Event Publisher Name.

Returns None.

stopPublisher

Method

Purpose This method stops the Event Publisher.

Type Synchronous, `IMPACT_ACTION`.

Arguments

Name	Type	Description
Event PublisherName	String	The Event Publisher Name.

Returns None.

startAllPublishers

Method

Purpose	This method starts all valid and not started Event Publishers.
Type	Synchronous, `IMPACT_ACTION`.
Arguments	None.
Returns	None.

stopAllPublishers

Method

Purpose	This method stops all started Event Publishers.
Type	Synchronous, `IMPACT_ACTION`.
Arguments	None.
Returns	None.

getEventPublisherInfo

Method

Purpose This method returns the Event Publisher information by Event Publisher name. If the event publisher name argument is blank then all event publishers are returned. On specifying the event publisher name argument, it serves as a regular expression used to filter the event publisher returned.

Type Synchronous, `IMPACT_INFO`.

Arguments

Name	Type	Description
Event Publisher Name	String	The Event Publisher Name.

Returns

Name	Type	Description
Name	String	Name of the Event Publisher.
Status	String	The current status of the event publisher (started/stop).
Auto Start	String	The flag to indicate event publisher is auto start configured.
Interval Time	String	The interval time to publish events.
Subscribe On Event Source Name	String	The name of the Event Source on the Event Publisher Subscribe.
CL Logger Name	String	The TIBCO Common Logging logger name.
CL Extended Model Name	String	The TIBCO Common Logging Extended Model name.
CL Extended Model Package Name	String	The TIBCO Common Logging Extended Model package name.

getEventDataSourceDetails

Method

Purpose This method returns the event data source details.

Type Synchronous, `IMPACT_INFO`.

Arguments None.

Returns

Name	Type	Description
EventSourceId	String	ID of the Event Source.
Microagent	String	The name of the TIBCO Hawk microagent.
Method	String	The name of the microagent method.
Status	String	The status of the event source. • Valid - Whether the microagent available method name is valid. • Invalid - Whether the microagent is available and/or not available and/or method is not valid.
Description/Help	String	Description/Help of the microagent method or reason for its invalid status.

reloadEventDefinitions

Method

Purpose This method stops all started event publishers, reloads event definitions from the configuration file and starts all valid event publishers with an auto start. You can make changes in the configuration file and reflect changes without restarting the TIBCO Hawk Agent.

Type Synchronous, `IMPACT_ACTION`.

Arguments None.

Returns None.

Event Definitions XSD details (plugin/commonlogging/ eventdefs.xsd)

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
targetNamespace="http://xsd.tns.tibco.com/hawk/cleventpublisher/ev
entdef" elementFormDefault="qualified"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:eventdef="http://xsd.tns.tibco.com/hawk/cleventpublisher/eve
ntdef">

<xsd:annotation>
<xsd:documentation>Provide details of Event
Publisher</xsd:documentation>
</xsd:annotation>
<xsd:complexType name="EventSourceType">
<xsd:attribute name="id" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="methodName" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="microAgentName" type="xsd:string"
use="required"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="EventDataSourceType">
<xsd:sequence>
<xsd:element name="EventSource" type="eventdef:EventSourceType"
minOccurs="1" maxOccurs="unbounded"></xsd:element>
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="EventDefinitionsType">
```

```
<xsd:sequence>
<xsd:element name="EventPublishers"
type="eventdef:EventPublishersType" minOccurs="1" maxOccurs="1">
</xsd:element>
<xsd:element name="EventDataSource"
type="eventdef:EventDataSourceType" minOccurs="1"
maxOccurs="1"></xsd:element>
            <xsd:element name="CommonLoggingConfigs"
type="eventdef:CommonLoggingConfigsType" minOccurs="1"
maxOccurs="1">
</xsd:element>
        </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="EventPublisherType">
<xsd:sequence>
<xsd:element name="CommonLoggingConfigRef"
type="eventdef:CommonLoggingConfigRefType" minOccurs="1"
maxOccurs="1">
</xsd:element>
<xsd:element name="EventDataSourceRef"
type="eventdef:EventDataSourceRefType" minOccurs="1"
maxOccurs="1">
</xsd:element>
<xsd:element name="EventOutput"
type="eventdef:EventOutputType" minOccurs="1" maxOccurs="1">
</xsd:element>
<xsd:element name="EventSubscribe"
type="eventdef:EventSubscribeType" minOccurs="1" maxOccurs="1">
</xsd:element>
</xsd:sequence>
<xsd:attribute name="name" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="validateAtStartup" type="xsd:boolean"
use="optional" default="false"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="CommonLoggingConfigType">
<xsd:annotation>
<xsd:documentation>Common Logging details.</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
```

```
<xsd:element name="ExtendedModel"
type="eventdef:ExtendedModelType" minOccurs="1"
maxOccurs="1"></xsd:element>
</xsd:sequence>
<xsd:attribute name="id" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="loggerName" type="xsd:string"
use="required"></xsd:attribute>
</xsd:complexType>

<xsd:element name="EventDefinitions"
type="eventdef:EventDefinitionsType"></xsd:element>

<xsd:complexType name="EventDataSourceRefType">
<xsd:sequence>
<xsd:element name="EventSourceRef"
type="eventdef:EventSourceRefType" minOccurs="1"
maxOccurs="unbounded"></xsd:element>
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="EventSourceRefType">
<xsd:sequence>
<xsd:element name="InputParameters"
type="eventdef:InputParametersType" minOccurs="0"
maxOccurs="1"></xsd:element>
<xsd:element name="EventCorrelation"
type="eventdef:EventCorrelationType" minOccurs="0"
maxOccurs="1"></xsd:element>
</xsd:sequence>
<xsd:attribute name="ref" type="xsd:string"
use="required"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="InputParametersType">
<xsd:sequence>
<xsd:element name="InputParameter"
type="eventdef:InputParameterType" minOccurs="1"
maxOccurs="unbounded"></xsd:element>
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="InputParameterType">
<xsd:simpleContent>
```

```
<xsd:extension base="xsd:string">
<xsd:attribute name="name" type="xsd:string"
use="required"></xsd:attribute>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="EventOutputType">
<xsd:sequence>
<xsd:element name="EventElements"
type="eventdef:EventElementsType" minOccurs="1"
maxOccurs="1"></xsd:element>
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="EventElementsType">
<xsd:choice>
<xsd:element name="EventElement"
type="eventdef:EventElementType" minOccurs="0"
maxOccurs="unbounded">
</xsd:element>
<xsd:element name="eventSourceRefs" type="xsd:string"
minOccurs="1" maxOccurs="1"></xsd:element>
</xsd:choice>
</xsd:complexType>

<xsd:complexType name="EventElementType">
<xsd:attribute name="source" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="output" type="xsd:string"
use="optional"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="EventSubscribeType">
<xsd:sequence>
<xsd:element name="IntervalTime" type="xsd:int"
minOccurs="0" maxOccurs="1" nillable="false">
</xsd:element>
</xsd:sequence>
<xsd:attribute name="sourceEventId" type="xsd:string"
use="required"></xsd:attribute>
```

```
<xsd:attribute name="autoStart" type="xsd:boolean" use="optional"
default="false"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="FilterType">
<xsd:attribute name="identifier" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="operator" use="required">
<xsd:simpleType>
<xsd:restriction base="xsd:string">
<xsd:enumeration value="="></xsd:enumeration>
<xsd:enumeration value="&gt;"></xsd:enumeration>
<xsd:enumeration value="&lt;"></xsd:enumeration>
<xsd:enumeration value="=&gt;"></xsd:enumeration>
<xsd:enumeration value="&lt;="></xsd:enumeration>
<xsd:enumeration value="!="></xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
</xsd:attribute>
</xsd:complexType>

<xsd:complexType name="LoggerType">
<xsd:attribute name="name" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="configFile" type="xsd:string"
use="optional"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="ExtendedModelType">
<xsd:sequence>
<xsd:element name="Classpath" type="eventdef:ClasspathType"
minOccurs="0" maxOccurs="1"></xsd:element>
</xsd:sequence>
<xsd:attribute name="name" type="xsd:string"
use="required"></xsd:attribute>
<xsd:attribute name="packageName" type="xsd:string"
use="required">
</xsd:attribute>
</xsd:complexType>

<xsd:complexType name="EventPublishersType">
<xsd:sequence>
```

```
<xsd:element name="EventPublisher"
type="eventdef:EventPublisherType" minOccurs="1"
maxOccurs="unbounded"></xsd:element>
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="CommonLoggingConfigsType">
<xsd:sequence>
<xsd:element name="CommonLoggingConfig"
type="eventdef:CommonLoggingConfigType" minOccurs="1"
maxOccurs="unbounded">
</xsd:element>
</xsd:sequence>
<xsd:attribute name="logConfigFile" type="xsd:string"
use="required"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="CommonLoggingConfigRefType">
<xsd:attribute name="ref" type="xsd:string"
use="required"></xsd:attribute>
</xsd:complexType>

<xsd:complexType name="EventCorrelationType">
        <xsd:annotation>
        <xsd:documentation>To correlate with other Event Data
Source
</xsd:documentation>
        </xsd:annotation>
        <xsd:simpleContent>
<xsd:extension base="xsd:string">
<xsd:attribute name="returnElement" type="xsd:string"
use="required">
<xsd:annotation>
<xsd:documentation>Return Element of Hawk MicroAgent Method
</xsd:documentation>
</xsd:annotation></xsd:attribute>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>

<xsd:complexType name="ClasspathType">
<xsd:sequence>
```

```
<xsd:element name="path" type="xsd:string" minOccurs="1"
maxOccurs="unbounded"></xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:schema>
```

Sample Event Definitions Configuration to CLEvents from Hawk

Following is the sample Event Definitions configuration to publish JVM Info Event of AMX 3 TIBCO Host Instance and Process Info Event of AMX 3 TIBCO Host instance and all nodes associated with this Host Instance.

`(plugin\commonlogging\ JVMAndProcessInfoEventdefs.xml)`

```
<?xml version="1.0" encoding="UTF-8"?>
<def:EventDefinitions
xmlns:def="http://xsd.tns.tibco.com/hawk/cleventpublisher/eventdef
"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://xsd.tns.tibco.com/hawk/cleventpublisher
/eventdef eventdefs.xsd ">

<!-- Event Publishers Definition for
    1. TIBCO Host JVM Process Info
    2. Process Events for TIBCO Host and AMX Nodes running in local
Machine.  -->
<!-- Event Publishers Details -->
<def:EventPublishers>

<!--Sample Event Publisher to Publish Process Info Event for TIBCO
AMX Host -->
<def:EventPublisher name="AMXHostProcessInfoEventPublisher">

<!-- Common Logging Configuration Details -->
<def:CommonLoggingConfigRef ref="ProcessCLConfig" />

<!--Event Data Source Ref -->
<def:EventDataSourceRef>
<def:EventSourceRef ref="AMXHost"/>
<def:EventSourceRef ref="Process">
<def:EventCorrelation returnElement="ID Process">${AMXHost.Process
Id}</def:EventCorrelation>
</def:EventSourceRef>
</def:EventDataSourceRef>
```

```
<!-- Event Ouput -->
<def:EventOutput>
<def:EventElements>
<def:EventElement source="${Process.ID Process}"
output="processId" />
<def:EventElement source="${Process.Process Name}"
output="processName" />
<def:EventElement source="${Process.User Name}" output="userName"
/>
<def:EventElement source="${Process.CPU Time}"
output="processCpuTime" />
<!--  On Windows platform  Virtual KBytes,Stack KBytes,Heap KBytes,
% CPU and % Memory  not available-->
<def:EventElement source="${Process.Virtual KBytes}"
output="virtualMemory" />
<def:EventElement source="${Process.Stack KBytes}"
output="stackSize" />
<def:EventElement source="${Process.Heap KBytes}"
output="heapSize" />
<def:EventElement source="${Process.% CPU}"
output="cpuUsageInPercent" />
<def:EventElement source="${Process.% Memory}"
output="memoryUsageInPercent" />
<def:EventElement source="${Process.Start time}"
output="startTime" />
<def:EventElement source="${AMXHost.Name}"
output="physicalCompId.matrix.host" />
</def:EventElements>
</def:EventOutput>

<!-- Event Subscription Details -->
<def:EventSubscribe sourceEventId="AMXHost" autoStart="false">
<def:IntervalTime>10000</def:IntervalTime>
</def:EventSubscribe>
</def:EventPublisher>

<!--TIBCO Host JVM InfoEvent Publisher -->
<def:EventPublisher name="AMXHostJVMInfoEventPublisher">
<def:CommonLoggingConfigRef ref="JVMnfoEventCLConfig" />

<def:EventDataSourceRef>
<def:EventSourceRef ref="AMXHost"/>
<def:EventSourceRef ref="JVMInfo">
```

```
<def:EventCorrelation returnElement="Process Id">${AMXHost.Process
Id}</def:EventCorrelation>
</def:EventSourceRef>
</def:EventDataSourceRef>

<def:EventOutput>
<def:EventElements>
<def:EventElement source="${AMXHost.Name}"
output="physicalCompId.matrix.host" />
<def:EventElement source="${JVMInfo.Maximum Heap Size}"
output="maxMemory" />
<def:EventElement source="${JVMInfo.Committed Memory}"
output="totalMemory" />
<def:EventElement source="${JVMInfo.Free Heap Size}"
output="freeMemory" />
<def:EventElement source="${JVMInfo.Non Heap Memory Used}"
output="nonHeapMemoryInUse" />
<def:EventElement source="${JVMInfo.Start Time}"
output="startTime" />
<def:EventElement source="${JVMInfo.Up Time}" output="uptime" />
<def:EventElement source="${JVMInfo.Live Threads}"
output="threadCount" />
<def:EventElement source="${JVMInfo.Daemon Threads}"
output="daemonThreadCount" />
<def:EventElement source="${JVMInfo.Peak Threads}"
output="peakThreadCount" />
</def:EventElements>
</def:EventOutput>

<def:EventSubscribe sourceEventId="AMXHost" autoStart="false">
<def:IntervalTime>10000</def:IntervalTime>
</def:EventSubscribe>
</def:EventPublisher>

<!--AMX Node(s) ProcessEventInfo Publisher -->
<def:EventPublisher name="AMXNodeProcessInfoEventPublisher">

<def:CommonLoggingConfigRef ref="ProcessCLConfig" />

<def:EventDataSourceRef>
<def:EventSourceRef ref="AMXNodeInfo">
<def:InputParameters>
<def:InputParameter name="Node Name"></def:InputParameter>
```

```
</def:InputParameters>
</def:EventSourceRef>
<def:EventSourceRef ref="Process">
<def:EventCorrelation returnElement="ID
Process">${AMXNodeInfo.Process Id}</def:EventCorrelation>
</def:EventSourceRef>
</def:EventDataSourceRef>

<def:EventOutput>
<def:EventElements>
<def:EventElement source="${Process.ID Process}"
output="processId" />
<def:EventElement source="${Process.Process Name}"
output="processName" />
<def:EventElement source="${Process.User Name}" output="userName"
/>
<def:EventElement source="${Process.CPU Time}"
output="processCpuTime" />
<!--  On Windows platform  Virtual KBytes,Stack KBytes,Heap KBytes,
% CPU and % Memory  not available-->
<def:EventElement source="${Process.Virtual KBytes}"
output="virtualMemory" />
<def:EventElement source="${Process.Stack KBytes}"
output="stackSize" />
<def:EventElement source="${Process.Heap KBytes}"
output="heapSize" />
<def:EventElement source="${Process.% CPU}"
output="cpuUsageInPercent" />
<def:EventElement source="${Process.% Memory}"
output="memoryUsageInPercent" />
<def:EventElement source="${Process.Start time}"
output="startTime" />
<def:EventElement source="${AMXNodeInfo.Name}"
output="physicalCompId.matrix.node" />
</def:EventElements>
</def:EventOutput>

<def:EventSubscribe sourceEventId="AMXNodeInfo" autoStart="false">
<def:IntervalTime>10000</def:IntervalTime>
</def:EventSubscribe>
</def:EventPublisher>

</def:EventPublishers>
```

```
<!-- Event Data Source Details -->
<def:EventDataSource>
<def:EventSource id="Process" methodName="getProcess"
microAgentName="COM.TIBCO.hawk.hma.Process" />
<def:EventSource id="AMXHost" methodName="getHostInfo"
microAgentName="com.tibco.hawk.amx.AMXHost" />
<def:EventSource id="AMXNodeInfo" methodName="getNodeInfo"
microAgentName="com.tibco.hawk.amx.AMXHost" />
<def:EventSource id="JVMInfo" methodName="getVirtualMachineInfo"
microAgentName="com.tibco.hawk.jvm.JavaVirtualMachine" />
</def:EventDataSource>

<!-- Common Logging Configuration -->
<def:CommonLoggingConfigs
logConfigFile="%TIBCO_HAWK_HOME_ESC%/plugin/commonlogging/sample_l
og4j.xml">

<def:CommonLoggingConfig id="ProcessCLConfig"
loggerName="hawk.clevent.logger">
<def:ExtendedModel
packageName="com.tibco.governance.cl.extension.model.process.impl.
ProcessInfoEventPackageImpl"

name="com.tibco.governance.cl.extension.model.process.impl.Process
InfoEventImpl" />
</def:CommonLoggingConfig>

<def:CommonLoggingConfig id="JVMnfoEventCLConfig"
loggerName="hawk.clevent.logger">
<def:ExtendedModel
packageName="com.tibco.governance.jvminfo.model.jvminfoevent.impl.
JvminfoeventPackageImpl"

name="com.tibco.governance.jvminfo.model.jvminfoevent.impl.JVMInfo
EventImpl">
<def:Classpath>

<def:path>%TIBCO_COMPONENT_STORE_PLUGINS%/com.tibco.governance.jvm
info.model_1.0.0.004.jar</def:path>

<def:path>%TIBCO_COMPONENT_STORE_PLUGINS%/com.tibco.governance.com
monlogging.extension.jvminfo.client_1.0.0.004.jar</def:path>
</def:Classpath>
</def:ExtendedModel>
</def:CommonLoggingConfig>
```

```
</def:CommonLoggingConfigs>

</def:EventDefinitions>
```

Sample Common Logging Configuration file

```
(plugin/commonlogging/sample_log4j.xml)

<?xml version="1.0" encoding="UTF-8"?>
<main_configuration>
  <base_hierarchy>
    <log4j:configuration
xmlns:log4j="http://jakarta.apache.org/log4j/">

<appender name="CommonLoggingJMSAppender"
class="com.tibco.commonlogging.appender.BEFJMSAppender">
<param name="serverUrl" value="tcp://localhost:7222" />
<param name="queueName" value="amx.governance.stats" />
<param name="userName" value="admin" />
<param name="password" value="" />
<param name="type" value="direct" />
        </appender>

<logger name="hawk.clevent.logger" additivity="false">
<appender-ref ref="CommonLoggingJMSAppender"/>
</logger>
  <logger name="root" additivity="false">
<level value="INFO" />
<appender-ref ref="CommonLoggingJMSAppender" />
</logger>

    </log4j:configuration>
  </base_hierarchy>
</main_configuration>
```

Refer to `plugin/commonlogging` folder for configuration details.

Chapter 4 ActiveMatrix Service Microagent

This chapter provides detailed information about the ActiveMatrix Service Microagent.

Topics

com.tibco.hawk.amx.AMXService

Microagent

Purpose Allows runtime monitoring of the ActiveMatrix components and services on each local node.

Methods

Method	Description	Page
getConfig	Gets monitoring configuration details	50
changeMonitoringConfig	Change monitoring configuration	51
getComponentInfo	Details of components.	52
getBindingInfo	Details of bindings	54
onComponentEvent	Notification on runtime state change of component	56
onBindingEvent	Notification on runtime state change of binding.	58
getBindingOperationStats	List component service and reference execution stats aggregated at component service/reference level.	60
getBindingOperationStats	List service and reference binding operations execution stats.	60
getComponentOperationStats	List component service and reference operations execution stats	62
onBindingOperationStats	Subscribe to get notification in every defined interval (for example, 1 minute) for last <n> (for example, 5) minutes of rolling window of service and reference binding execution statistics aggregated at binding level.	64

Method	Description	Page
onBindingOperationStats	Subscribe to get notification in every defined interval (for example, 1 minute) for last <n> (for example 5) minutes of rolling window of service and reference binding operation execution statistics.	64
onComponentOperationStats	Subscribe to get notification in every defined interval (for example, 1 minute) for last <n> (for example, 5) minutes of rolling window of Component Service and Component Reference operation execution statistics.	66

getConfig

Method

Purpose This method provides monitoring configuration details.

Type Synchronous, `IMPACT_INFO`.

Arguments None.

Returns

Name	Type	Description
Node	String	The name of the node.
AMXHost	String	The name of the ActiveMatrix host associated with the node.
Environment	String	The name of the environment.
Monitoring Application State	String	Runtime state of Monitoring Application. NOTE: To get service execution statistics, monitoring application must be in RUNNING state.
Notification Enabled	Long	Returns true or false for statistics notification enable or disable
Notification Interval	Long	Notification Interval in milliseconds.
Rolling Window Length	Long	Rolling window length in milliseconds.
Number of Buckets	Long	Number of time intervals in rolling window.
Statistics Gathering Interval	Long	Statistics gathering interval time in milliseconds.
Is Partial Window	Boolean	Indicates whether the sliding window statistics includes the current working bucket.

changeMonitoringConfig

Method

Purpose This method provides option to change monitoring configuration. User can change rolling window length, statistics gathering interval (bucket size), notification interval and isPartialWindow. This modification overrides configuration details provided by monitoring application and reset after monitoring application restart.

Type Synchronous, `IMPACT_ACTION`.

Arguments

Name	Type	Description
Rolling Window Length (in seconds)	Long	Select rolling window length in seconds. Possible values are: 60, 120, 180, 240, 300
Statistics Gathering Interval (in seconds)	Long	Selects statistics gathering interval time in seconds. The content of list box is: 5, 10, 15, 20, 30, 40, 50, 60
Notification Interval (in seconds)	Long	Selects notification interval in seconds. The content of list box is: 10, 15, 20, 30, 40, 50, 60
Is Partial Window	Boolean	Select true/false for the sliding window statistics include the current working bucket? Possible values are: true, false

Returns None.

getComponentInfo

Method

Purpose This method returns Component information by Component and Application name. It serves as a regular expression used to filter the components returned.

Type Synchronous, `IMPACT_INFO`.

Arguments

Name	Type	Description
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Component Name	String	A substring that matches the component name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Runtime State	String	Select Runtime Possible values are: • Blank: All • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED

Returns Type: `COM.TIBCO.hawk.talon.TabularData`

Element Name	Type	Description
AMX Host	String	The name of the ActiveMatrix host associated with the node.

Element Name	Type	Description
Node	String	The name of the node.
Environment	String	The name of the environment.
Application	String	The name of the application.
Component	String	The name of the component.
Runtime State	String	Runtime state of the component. • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED • START_FAILED • WAITING_FOR_DEPENDENCIES
Version	String	Version of the component.
URI	String	URI of the component
Time Stamp	String	Time stamp of the changed runtime state of the component.

Application Key generated from Application Name, if application deployed only in one environment without any space in words of Application, then Application Key is same of Application Name. But if application contains spaces then spaces replaced with “_” underscore. If same application deployed across the environment with same name then Application name postfix with incremental of one.

getBindingInfo

Method

Purpose This method returns service and reference binding information by binding and application name. It serves as the regular expression used to filter the bindings returned.

Type Synchronous, `IMPACT_INFO`.

Arguments

Name	Type	Description
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
BindingName	String	A substring that matches the name of the binding. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Runtime State	String	Select Runtime Possible values are: • Blank: All • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED

Returns Type: `COM.TIBCO.hawk.talon.TabularData`

Element Name	Type	Description
AMX Host	String	ActiveMatrix host Name

Element Name	Type	Description
Node	String	ActiveMatrix Node Name
Environment	String	Environment Name
Application	String	Application Name
Binding	String	Binding Name
Binding Type	String	Binding Type (Service or Reference)
Contract	String	Contract name (that is, Service or Reference name)
Runtime State	String	Runtime state of binding • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED • START_FAILED • WAITING_FOR_DEPENDENCIES
Binding URI	String	Binding URI
Time Stamp	String	Time stamp of runtime state change of binding.

onComponentEvent

Method

Purpose This method provides notification when the runtime state of component is changed. Notification can be filtered by component and application name and it serves as the regular expression used to filter the components returned.

Type Asynchronous, `IMPACT_INFO`.

Arguments

Name	Type	Description
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Component Name	String	A substring that matches the component name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Runtime State	String	Select Runtime Name Possible values : • Blank: All • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED

Returns Type: `COM.TIBCO.hawk.talon.CompositeData`

Element Name	Type	Description
AMX Host	String	The name of the ActiveMatrix host.

Element Name	Type	Description
Node	String	Name of the node.
Environment	String	The name of the environment.
Application	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Component	String	A substring that matches the component name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding Type	String	Binding type (Service or Reference)
Runtime State	String	Runtime state of binding • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED • START_FAILED • WAITING_FOR_DEPENDENCIES
Component URI	String	Component URI.
Time Stamp	String	Time stamp of runtime state change of the binding.

onBindingEvent

Method

Description This method provides notification when the runtime state of service or reference binding is changed. Notification can be filtered by binding and application name and it serves as the regular expression used to filter the bindings returned.

Type Asynchronous, `IMPACT_INFO`

Arguments

Name	Type	Description
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding Name	String	A substring that matches the name of the service or reference binding. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Runtime State	String	Select Runtime Name Possible values : • Blank : All • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED

Return Type: `COM.TIBCO.hawk.talon.CompositeData`

Element Name	Type	Description
AMX Host	String	The name of the ActiveMatrix host.

Element Name	Type	Description
Node	String	Name of the Node.
Environment	String	The name of the environment.
Application	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding	String	A substring that matches the name of the binding. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding Type	String	Binding type (Service or Reference)
Contract	String	Contract name (that is, Service or Reference name)
Runtime State	String	Runtime state of binding • RUNNING • NOT_RUNNING • STOPPED • LOST_CONTACT • INSTALLED • UNINSTALLED • START_FAILED • WAITING_FOR_DEPENDENCIES
Binding URI	String	Binding URI.
Time Stamp	String	Time stamp of runtime state change of the binding.

getBindingOperationStats

Method

Purpose This method provides statistics of service and reference binding operation execution by operation name, service or reference binding name, application name and binding type and it serves as the regular expression used to filter the operations statistics returned.

Type Synchronous, `IMPACT_INFO`.

Arguments

Name	Type	Description
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding Name	String	A substring that matches the name of the binding. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Operation Name	String	A substring that matches the operation name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding Type	String	Select type. Possible values are : • **<none>**: All service and reference bindings. • **SERVICE**: Only service binding. • **REFERENCE**: Only reference bindings.

Return Type: `COM.TIBCO.hawk.talon.TabularData`

Element Name	Type	Description
AMX Host	String	ActiveMatrix host name.
Node	String	Node name.
Environment	String	Environment name.
Application	String	Application name.
Binding	String	Service or Reference binding name.
Binding Type	String	Binding type (that is, Component Service or Reference name).
Contract	String	Contract name.
Operation	String	Service operation name
Binding URI	String	Service or Reference binding URI.
Endpoint Direction	String	Endpoint direction (that is, Inbound or Outbound)
Service Execution Stats		Stats. Refer Service Execution Stats.

getComponentOperationStats

Method

Description This method provides statistics of component service and reference operation execution by operation name, component service or reference name, application name and type and it serves as the regular expression used to filter the operations statistics returned.

Type Synchronous, `IMPACT_INFO`

Arguments

Name	Type	Description
Operation Name	String	A substring that matches the operation name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Contract Name	String	A substring that matches the component service or reference name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Component Name	String	A substring that matches the component name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.

Name	Type	Description
Contract Type	String	Select type. Possible values are: • **<none>**: All service and reference. • **SERVICE**: Only Component Services. • **REFERENCE**: Only Component References.

Return Type: `COM.TIBCO.hawk.talon.TabularData`

Element Name	Type	Description
AMX Host	String	ActiveMatrix host name.
Node	String	Node name.
Environment	String	Environment name.
Application	String	Application name.
Component	String	Component name.
Contract	String	Contract name.
Contract Type	String	Contract type (that is, Service or Reference)
Operation	String	Operation name
URI	String	Component URI.
Service Execution Stats		Stats. Refer Service Execution Stats.

onBindingOperationStats

Method

Description This method provides notification in each interval period defined in monitoring configuration with statistics of service and reference binding operation for last <n> by operation name, binding name, application name and binding type and it serves as the regular expression used to filter the operations statistics returned.

Type Synchronous, `IMPACT_INFO`

Arguments

Name	Type	Description
Operation Name	String	A substring that matches the operation name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding Name	String	A substring that matches the name of the service or reference binding. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Binding Type	String	Select type. Possible values are: • **<none>**: All service and reference bindings. • **SERVICE**: All Service bindings. • **REFERENCE**: All Reference bindings.

Return Type: `COM.TIBCO.hawk.talon.TabularData`

Element Name	Type	Description
AMX Host	String	ActiveMatrix host name.
Node	String	Node name.
Environment	String	Environment name.
Application	String	Application name.
Binding	String	Service or Reference binding name.
Binding Type	String	Binding type (that is, Service or Reference
Contract	String	Contract Name.
Operation	String	Service operation name
Binding URI	String	Service or Reference binding URI.
Endpoint Direction	String	Endpoint direction (that is, Inbound or Outbound)
Service Execution Stats		Stats. Refer Service Execution Stats.

onComponentOperationStats

Method

Description This method provides notification in each interval period defined in monitoring configuration with statistics of component service and reference operation for the last <n> by operation name, component service or reference name, component name, application name and type and it serves as the regular expression used to filter the operations statistics returned.

Type Synchronous, `IMPACT_INFO`

Arguments

Name	Type	Description
Operation Name	String	A substring that matches the operation name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Contract Name	String	A substring that matches the component service or reference name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Component Name	String	A substring that matches the component name. An empty string (the default) matches all names. The substring provided can also be a regular expression.
Application Name	String	A substring that matches the application name. An empty string (the default) matches all names. The substring provided can also be a regular expression.

Name	Type	Description
Contract Type	String	Select type. Possible values are: • **<none>**: All Component Services and References. • **SERVICE**: All Component Services. • **REFERENCE**: All Component References.

Return Type: `COM.TIBCO.hawk.talon.TabularData`

Element Name	Type	Description
AMX Host	String	ActiveMatrix host name.
Node	String	Node name
Environment	String	Environment name.
Application	String	Application name
Component	String	Component name
Contract	String	Contract name
Contract Type	String	Contract type (that is, Service or Reference)
Operation Name	String	Service operation name
URI	String	Component URI.
Service Execution Stats		Stats. Refer to Service Execution Stats.

Service Execution Stats

Column Name	Type	Description
Start Time	String	The start time of the collection period ISO-8601 format.
End Time	String	The end time of the collection period ISO-8601 format.
Total Time	Long	Collection period in milliseconds.
Hits	Double	Number of execution responses for last period.
Faults	Double	Number of execution faults for last period.
Pending Responses	Double	Difference between count of requests and responses at end of the window.
Avg. Response Time	Double	Average response time for collection period.
Min Response Time	Double	Minimum response time over collection period.
Max Response Time	Double	Maximum response time over collection period.
Hits Per Minute	Double	Average number of executions per minute over collection period.
Faults Per Minute	Double	Average number of faults per minute over collection period.
Fault Percent	Double	Ratio of faults to total hits between 0.0 and 100.0

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