TIBCO EBX® Activity Monitoring Add-on Documentation

Version 1.3.5
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TIBCO®

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CHAPTER 1

Overview

The TIBCO EBX® Activity Monitoring Add-on monitors business operation execution in TIBCO EBX®. It records the execution duration, status and business data handled by operations over time by:

- Tracking the execution of an operation during its lifetime from start to finish.
- Grouping logs to produce an activity monitoring report focused on a business object. For instance, you can see all changes that have occurred on a record or a table regardless of the origin of the operations, such as CRUD, workflow, services, etc.

The EBX® Activity Monitoring Add-on relies on an API to handle the communication protocol with the operation being monitored. The add-on does not initialize the communication protocol; this responsibility belongs to the operation.

In the current version, you cannot monitor EBX® built-in services; only business operations can be monitored.

Special notation key:	
✔	Important recommendation for the use of the feature
✘	This feature is not yet available in the current release

CHAPTER 2

Overview of updates

This chapter contains the following topics:

2.1 GA 1.2.2

- User log in and log off activity can be monitored via the EBX® event broker and stored by the add-on.
- An additional color is available to differentiate between an operation that is stopped normally and one that is stopped because of exceeding its maximum allowed duration.

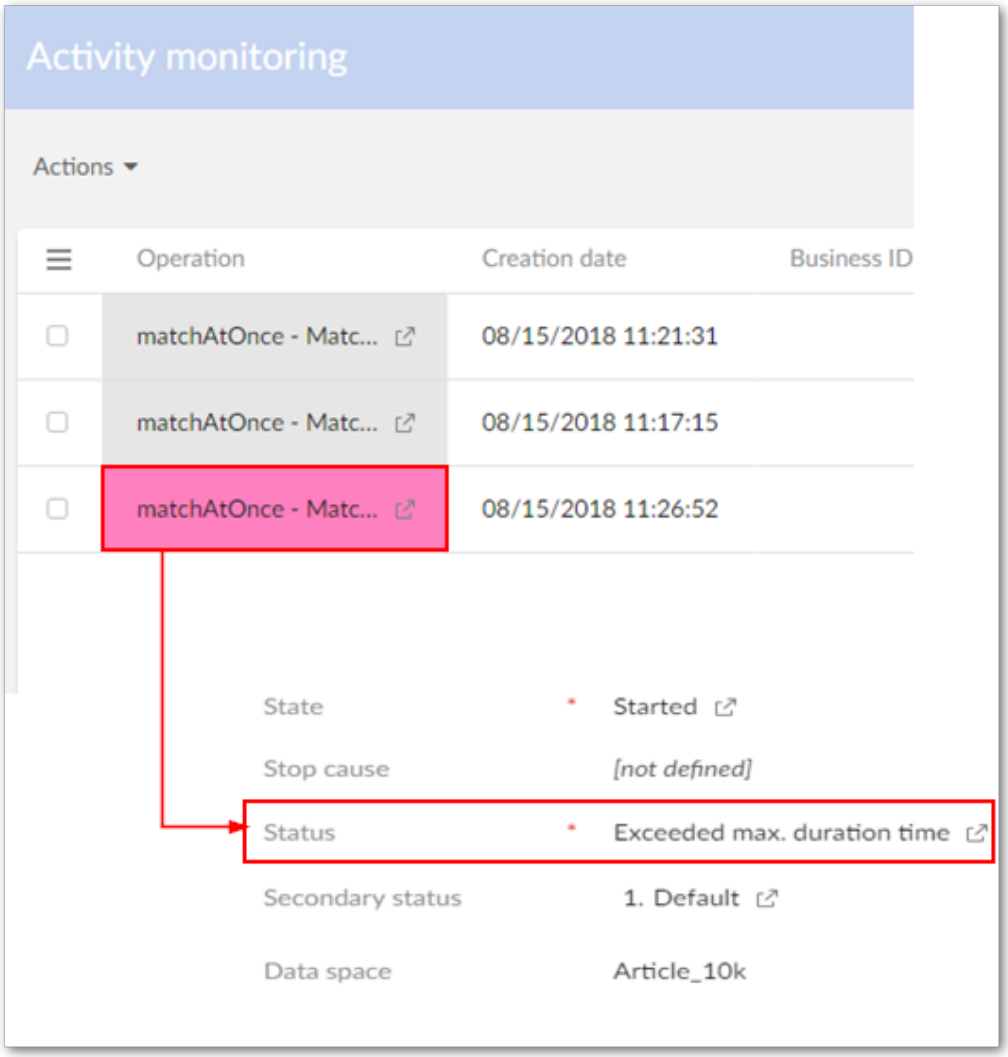
CHAPTER 3

Communication protocol

The communication protocol between the operations and the monitor is based on a Java API. You can use a directory to register the operations you would like to monitor.

When communication between an operation and the activity monitor is initialized, the operation obtains a unique identifier. This identifier allows the operation to inform the monitor about its execution status over time. Reporting frequency is specified by the operation. For instance, operation status can be updated-on a long-running operation-for every 10% completed. When an operation terminates communication, it informs the monitor.

When an operation starts it can inform the monitor of its expected duration. The monitor can then keep track of the execution time and raise an alert if the service duration exceeds the expected value.



Special notation:	
✔	Refer to the JavaDoc for the API definition and usage.

CHAPTER 4

Tracking user sessions

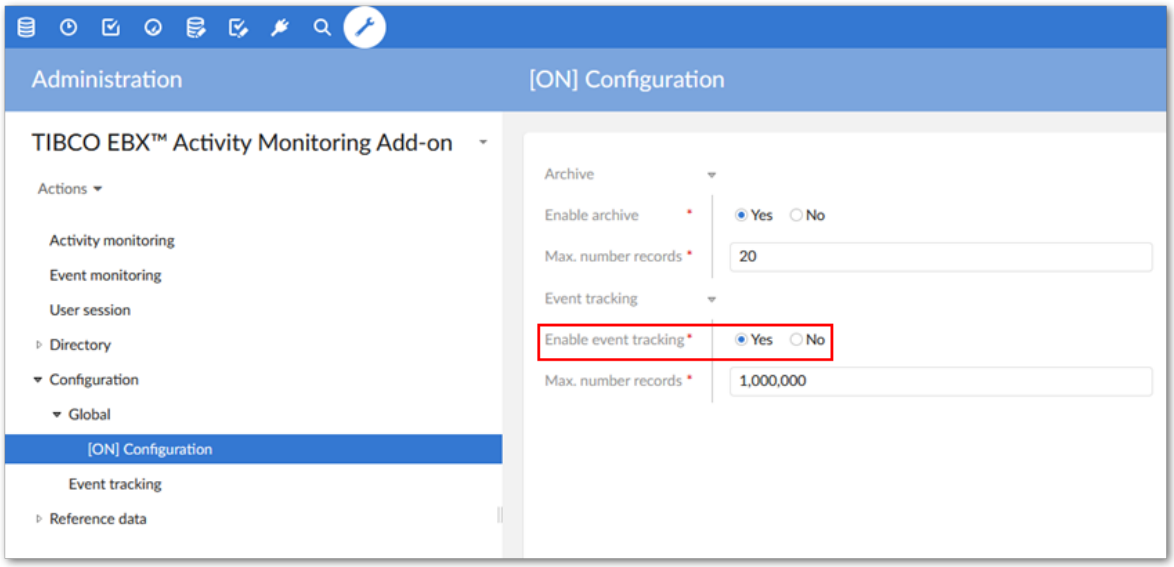
You can configure the EBX® Activity Monitoring Add-on to record user log in and log off activity. When you enable this feature, the following events trigger session tracking:

- Log in
- Log out
- Session timeout
- Session destroy

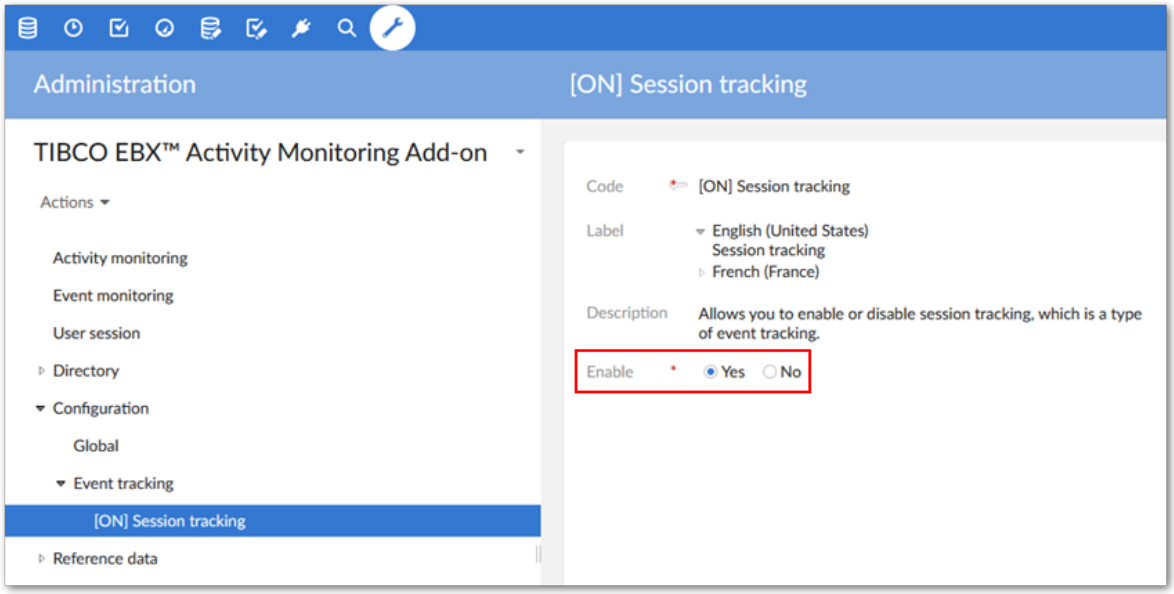
When the add-on records user activity, it stores this information in the 'Event monitoring' and 'User session' tables. The 'Event monitoring' table color codes each event type to increase visibility and tracks session duration. The 'User session' table tracks the session ID and IP address for each user profile.

The following steps describe how to enable event monitoring, turn on session tracking, and specify a maximum number of stored events:

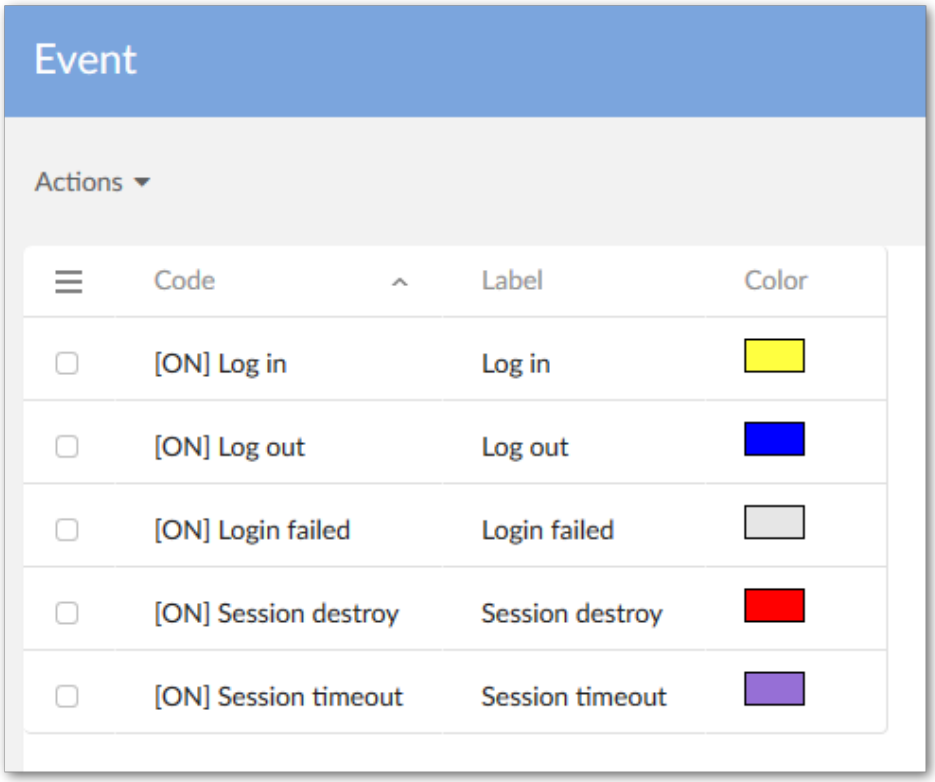
- Navigate to 'Administration' → 'Repository management' → 'TIBCO EBX® Activity Monitoring Add-on' → 'Configuration' and select the 'Global' table.
- Open the configuration record and in the 'Event tracking' group, set the 'Enable event tracking' property to 'Yes'.



- By default the add-on stores 1,000,000 records before deleting records—starting with the oldest. If you would like to change this value, you can do so using the 'Max. number records' property.
- To enable session tracking, navigate to the 'Event tracking' table, open the session tracking record and set the 'Enable' to 'Yes'.



- The 'Reference data' group's 'Event' table lists available events and assigns them each a unique color. When viewing the stored user sessions in the 'Event monitoring' table, these colors can help you quickly spot different event types.



CHAPTER 5

Configuration information

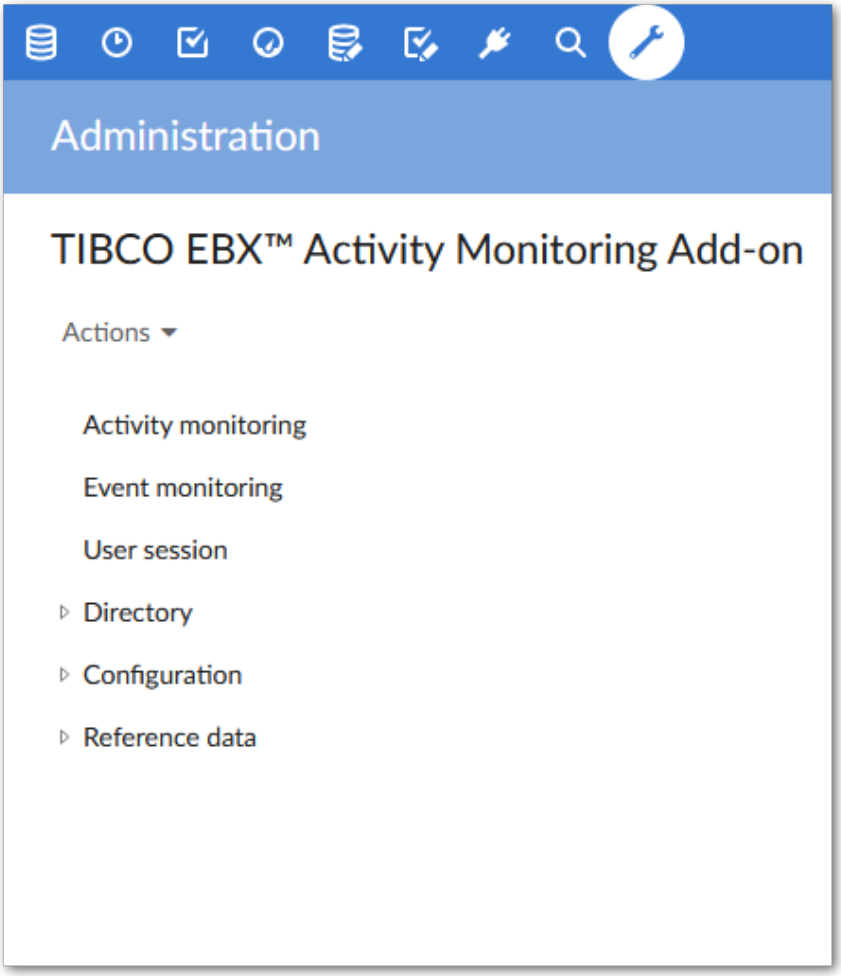
This chapter contains the following topics:

5.1 Monitoring overview

In the EBX® 'Administration' area, you'll find the following tables and domains that contain configuration options and store monitoring data.

- The 'Activity Monitoring' table collects all the data related to the execution of operations.
- The 'Event monitoring' table stores records pertaining to user log in and log off events.
- The 'User session' table keeps track of information about each unique user session.
- The 'Directory' domain allows you to register the operations that you want to monitor.
- The 'Configuration' domain allows you to configure tracking for user log in and log off activity.

- Each table in the 'Reference data' domain stores reference data used by the add-on.



5.2 **Activity Monitoring table**

The 'Activity Monitoring' table records all data collected by the monitor during communication with operations. Color coding applied to the 'Status' property is used to display it contextually depending on the operation execution status. By default, all data for the monitor is read-only.

Property	Definition
Operation	The operation for which the log is recorded.
Creation date	The date when the log record was created.
Business ID	Any value can be provided by the operation. This identifier is used to group the monitoring records by business concept. For instance, if the 'Business ID' is the unique identifier of a customer, then it becomes possible to group all business activity for this customer in the 'Activity Monitoring' table.
State	The current state of the operation. The possible values (Started, Stopped and Suspended) are defined in the 'State' table located in the 'Reference data' domain.
Stop cause	Once an operation is stopped, a stop cause is recorded that shows why the operation has terminated. Possible values (Failure, Kill and Normal) for this property are defined in the 'Stop cause' table located in the 'Reference data' domain.
Status	Status information highlights whether operations execute normally or in an atypical manner. The possible status values are declared in the 'Status' table located in the 'Reference data' domain. Example values include: 'Default' (normal execution), 'Exceed max. duration time', 'Not yet killed' and 'Stop exceeded max duration'. Color coding for each status value provides a specific visual alert when querying the monitor. These colors can help you distinguish between an operation that stopped normally and one that stopped because it exceeded its maximum allowed duration time.
Secondary status	When more than one status is raised for a monitoring record at the same time, then the 'Secondary status' property lists these values. This does not show a history of the status values over time, only current status values that have been raised.
Record	One or more references to a record can be logged by the operation.
Table	A reference to the table on which the operation is executed.
Data set	A reference to the data set from which the operation is executed.
Data space	A reference to the data space from which the operation is executed.
User requester	The user that initiated operation execution.
User killer	The user who requested termination of operation execution.
Start date	The operation's start date.
Last modification date	The record log's last date of modification.

Property	Definition
End date	The operation's end date.
Percentage of completion	Completion percentage of the operation execution.
Last suspended time	The last time operation execution was in a 'Suspended' (pending) state.
Last restart time	The last operation execution restart date if the operation was previously suspended.
Total duration in minutes	Total operation execution time. This duration is automatically computed by the monitor every time the operation refreshes its status.
Max duration in minutes	An operation can be associated with a maximum expected execution duration. When the operation is registered in the directory, its 'Max. duration in minutes' property can provide a default value. During the execution, the operation can override this value when starting its communication with the monitor.
End code	This property is used by the operation to record an 'end code'. This value is not used by the monitor. This is for information purposes only.
Wait to be killed	The 'Wait to be killed' property allows the monitor to inform the operation whether its termination is expected or not. 'True': The operation is informed that it must stop as soon as possible. 'False': The operation can continue its execution.
Input parameters	The operation can record any business data in the monitor with the data format 'Name-Value' (multi-occurrence). Three types of data are identified: input parameters, working parameters and output parameters.
Working parameters	The operation can record any business data in the monitor with the data format 'Name-Value' (multi-occurrence). Three types of data are identified: input parameters, working parameters and output parameters.
Output parameters	The operation can record any business data in the monitor with the data format 'Name-Value' (multi-occurrence). Three types of data are identified: input parameters, working parameters and output parameters.

5.3 **Event monitoring table**

This table stores all records that correspond to a user's log in and log off activity. You can set a limit on the number of records this tables stores. See the 'Configuration' → 'Global' table for more details.

Property	Definition
Code	A unique identifier generated by the add-on.
Event	The operation that triggered event storage. The 'Event' table stores the color coded events that can display here.
User session	Information about each user session, including the User ID, Session ID and IP address. This field references records stored in the 'User session' table.
Event time	The timestamp of the corresponding event's execution.
Duration	The amount of time accrued by the corresponding operation. The add-on calculates duration by subtracting the log in timestamp from the log out timestamp. If no log in was recorded for a user's session, the add-on cannot compute the duration.

5.4 **User session table**

This table stores information pertaining to each unique user session.

Property	Definition
User id	The user ID corresponding that initiated this session.
HTTP session id	The unique session ID.
IP address	The user's IP address.

5.5 **Directory**

The 'Directory' group allows you to register the operations that can be monitored. They are declared by products (EBX® 'modules').

Product

A product is an EBX® module that contains the operations that are registered.

Property	Definition
Code	Technical name of the EBX® module. Example: ebx-addon-dqid, ebx-addon-daqa.
Name	Functional 'name' of the EBX® module. Example: TIBCO EBX® Insight Add-on or TIBCO EBX® Match and Cleanse Add-on.
Description	Any description can be entered for the module.

Operation

This table contains the operations that are registered to be monitored.

Property	Definition
Product	A reference to the product that contains the registered operation.
Operation	Unique name of the 'service' in the EBX® module (product). For example: - "DQIdExecuteAndQueryOnTable" of the TIBCO EBX® Insight Add-on - "matchAtOnce" of the TIBCO EBX® Match and Cleanse Add-on
Max. duration in minutes	Theoretical maximum duration of the operation execution in minutes. This value can be changed by the operation when starting the communication protocol with the monitor
Accept to be killed	This property is used to state if the operation is able to receive and manage a kill request from the monitor 'True': The operation can receive and manage a kill request from the monitor. 'False': The operation can not receive a kill request from the monitor.

5.6 **Configuration group**

This group allows you to enable, disable and set configuration information for archiving and event tracking.

'Global' table

This table allows you to globally turn archiving and event tracking on/off, and specify the maximum number of records stored for each type of activity.

Property	Definition
Enable archive	Turns automatic archiving on, or off. When the number of stopped operations exceeds the corresponding 'Max. number records' property value, the add-on begins the archiving process. The 'TIBCO EBX® Activity Monitoring Add-on - Archive' data space stores the archives. You can also configure automatic archiving based on the EBX® Scheduler. Refer to the 'Archive data space' section for more information.
Max. number records	The number of stopped operations allowed before the add-on begins the archiving process.
Enable event tracking	Turns event tracking on, or off globally. To enable types of events, such as session tracking, use the 'Event tracking' table.
Max. number records	The number of records stored before the add-on begins deleting them—starting with the oldest.

'Event tracking' table

This table allows you to enable/disable types of event tracking, such as session tracking. Currently, you can only use session tracking.

Property	Definition
Code	The unique id for this type of event.
Label	This event's name, such as 'Session tracking'.
Description	The description for this type of event.
Enable	Determines whether tracking for this type of event is enabled/disabled.

5.7 **Reference data**

The following sections describe reference data.

State

Three states are used to manage the lifetime of an operation: Started, Stopped and Suspended.

Property	Definition
Code	Any naming convention except the prefix '[ON]'.
Label	The state label.

Stop cause

Once the operation is stopped, it is possible to record a stop cause: Failure, Kill, Normal.

Property	Definition
Code	Any naming convention except the prefix '[ON]'.
Label	The stop cause label.

Status

Status information highlights whether operations execute normally or in an atypical manner. Example status values include: 'Default' (normal execution), 'Exceed max. duration time', 'Not yet killed' and 'Stop exceeded max duration'.

Color coding for each status value provides a specific visual alert when querying the monitor. This can help you distinguish between an operation that stopped normally and one that stopped because it exceeded its maximum allowed duration time.

Property	Definition
Code	Any naming convention except the prefix '[ON]'.
Label	The stop cause label.
Color	Color used to display the monitoring record when the status is raised.
Priority level	More than one status can be raised for a same monitoring record. To decide which one is used for the color coding, the priority level is applied. A value of '1' is the highest level.
Java class	Qualified name (package + class name) of the java class that is used to compute the status.

'Event' table

This table stores values for predefined events and associates each one with a unique color.

Property	Definition
Code	The predefined list of available events.
Label	The event's label. Default values include the following events: • Session destroy: When an administrator terminates a users session. • Log in: When a user logs in. • Normal log out: When a user performs the log out operation. • Session timeout: When the system logs the user out due to inactivity for more than the allotted time.
Color	The unique color assigned to each event.

CHAPTER 6

Archive data space

This chapter contains the following topics:

6.1 TIBCO EBX® Activity Monitoring Add-on - Archive

The 'TIBCO EBX® Activity Monitoring Add-on - Archive' is located under the EBX® 'Administration' tab.

This data space contains all the archive files and allows you to restore them in the table 'Activity Monitoring'.

6.2 Activity Monitoring

The 'Activity Monitoring' table is similar to the table in the main dataspace 'TIBCO EBX® Activity Monitoring Add-on'. It allows you to restore the archive files without interfering with the real-life environment used for the monitoring.

6.3 Archive

This table contains the archive files with some additional meta-data: creation date of the archive file, the user who created the archive file, the path of the archive file.

Property	Definition
Creation date	Archive file creation date
Creation user	User who requested the creation of the archive file
Archive path	Archive file path

CHAPTER 7

Administrative services

This chapter contains the following topics:

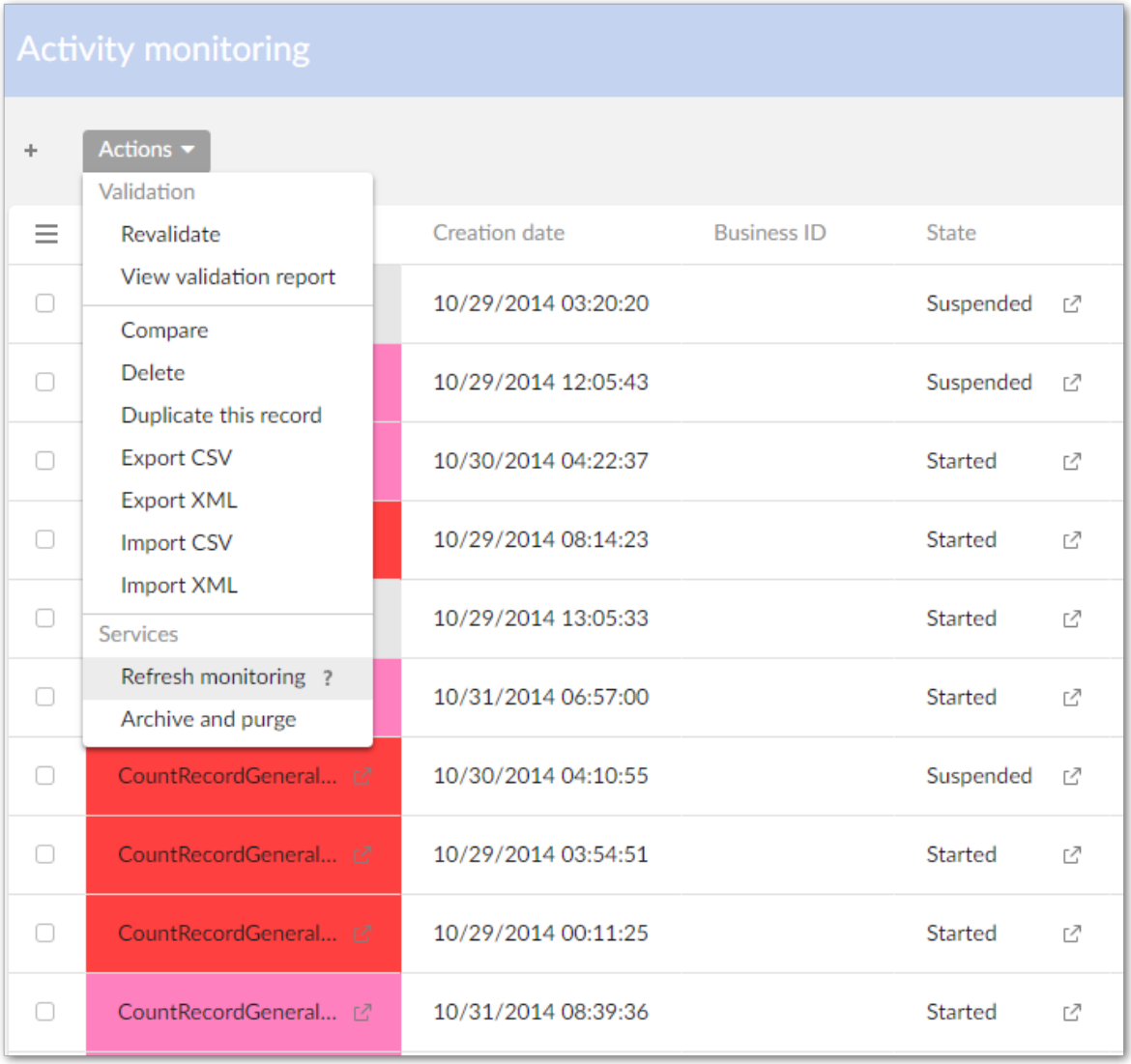
7.1 Services overview

Two services are available on the 'Activity Monitoring' table to 'Refresh monitoring' and to 'Archive and purge' the logs.

7.2 Refreshing the monitoring

The 'Refresh monitoring' service is available on the 'Activity Monitoring' table. It is used to refresh the display of the recorded information. The status of every operation is also refreshed so that the color coding by status value is enforced.

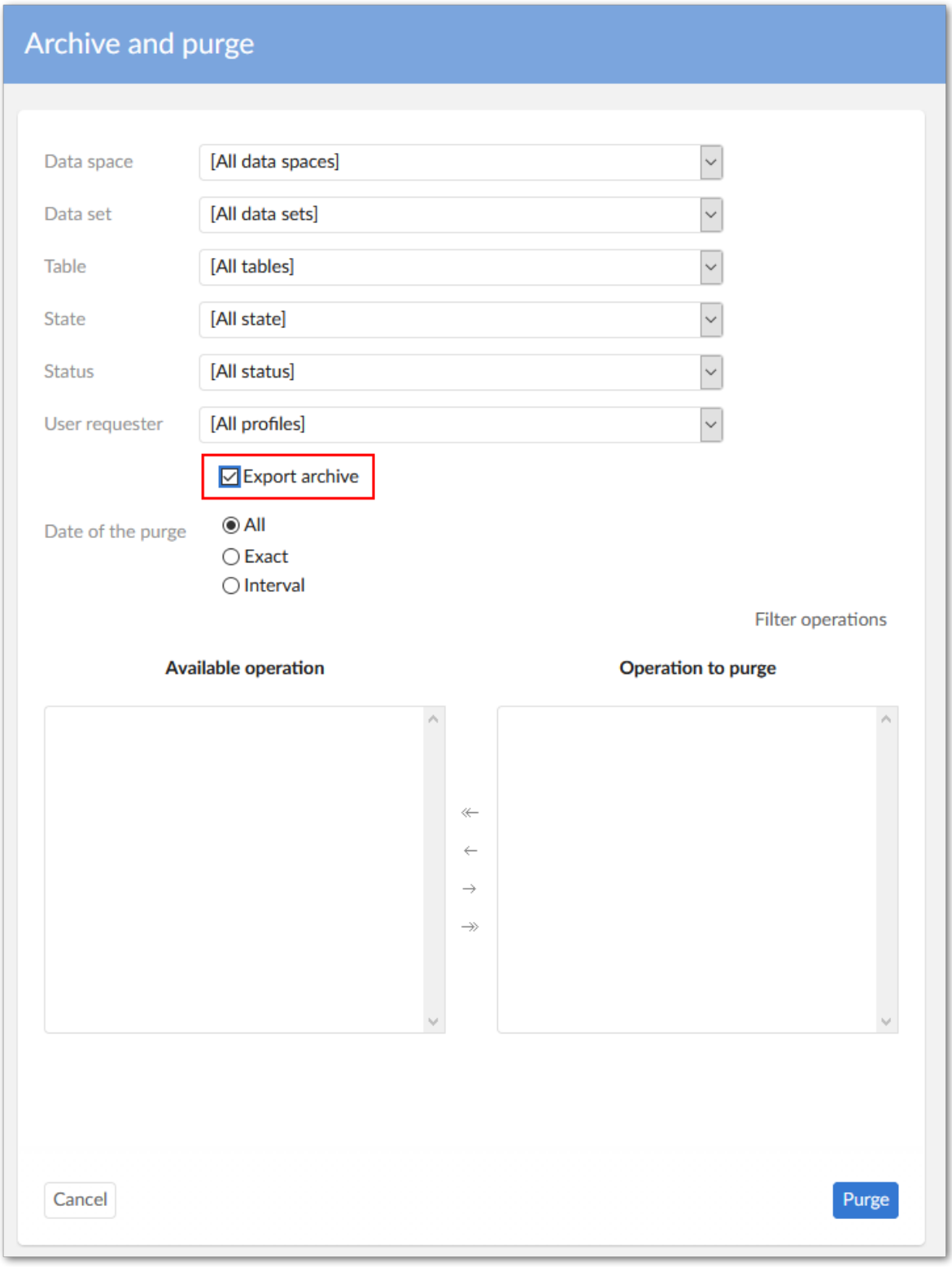
In the illustration below, one operation has a status highlighted in pink meaning that its expected execution time has been exceeded.



7.3 **Archiving and purging the monitoring log**

The 'Archive and purge' service is available on the 'Activity Monitoring' table. It is used to purge the records by criteria and allows you to archive the data

See also next section to get further information about the 'Archiving management'.



Special notation:	
✕	Automatic refresh of the display. Graph view of the monitoring log. Insight indicators applied to the add-on information to compute analytic results and configure EBX® Activity Monitoring Add-on dashboards

CHAPTER 8

Archiving management

This chapter contains the following topics:

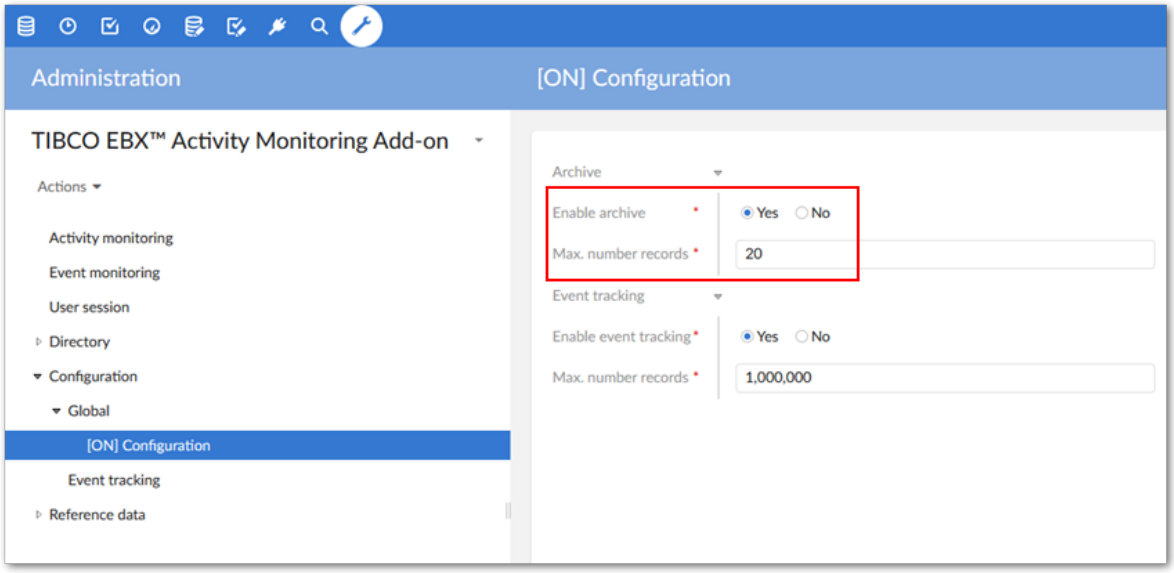
8.1 Archiving overview

You can specify that the add-on automatically archive monitoring log data based on the log size, or by configuring the EBX® scheduler.

8.2 Archiving based on the size of the log data

You can locate archive configuration settings under the 'Administration' → 'Repository management' → 'TIBCO EBX® Activity Monitoring Add-on' → 'Configuration' → 'Global' table's '[ON] Configuration' record. The 'Max number records' property declares the maximum number of stopped

operations that the add-on can record before archiving older records. To activate the archive feature, set the 'Enable archive' property to 'Yes'.



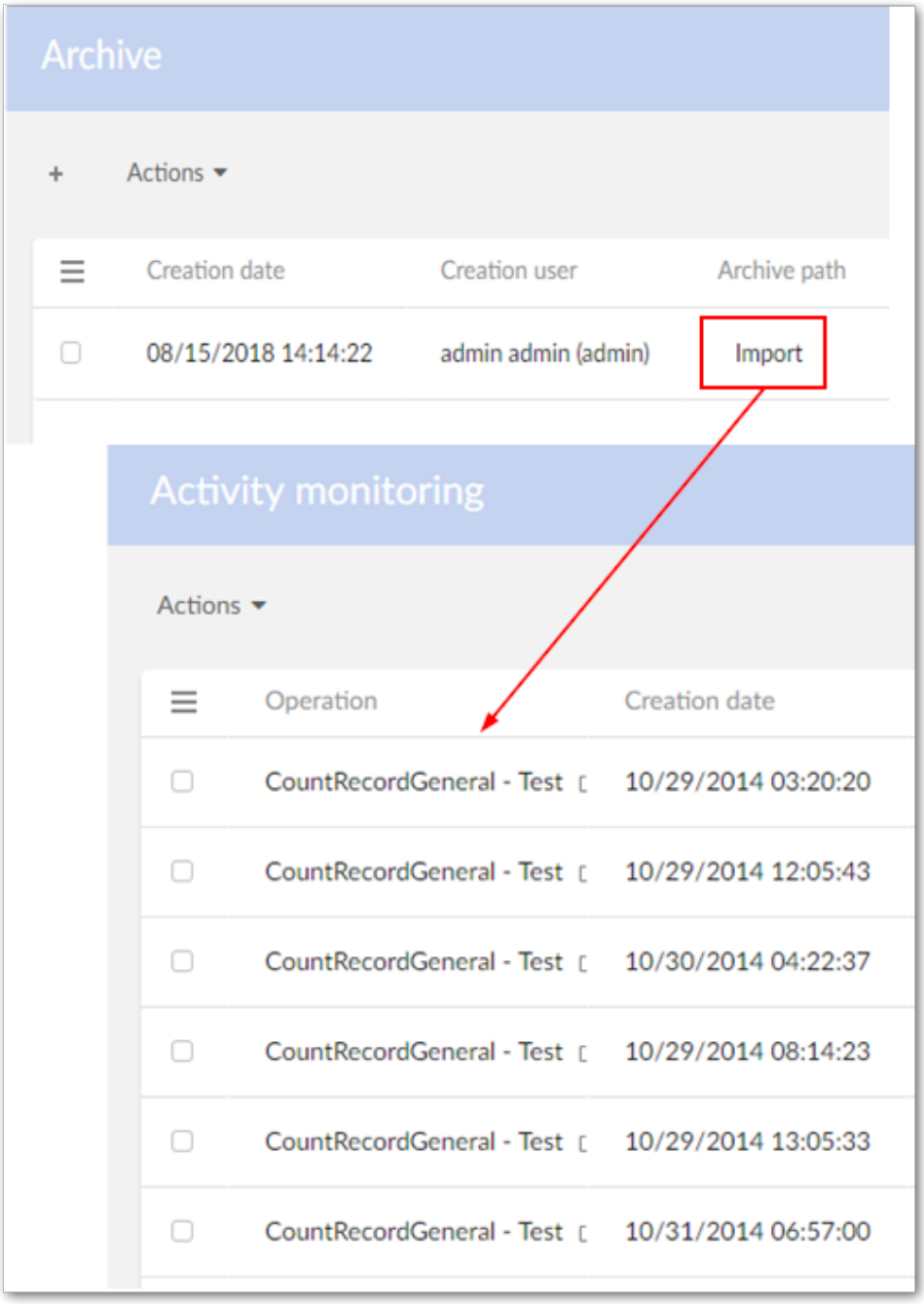
8.3 **Archiving based on the EBX® scheduler**

To apply the archiving process based on the EBX® scheduler, the task '[built-in] Monitoring clean up' must be used.

Each time the '[built-in] Monitoring clean up' is run, all stopped operations in the monitoring data are archived.

8.4 **Restoring the archive files**

The archive files and the restore process are located in the 'TIBCO EBX® Activity Monitoring Add-on - Archive' data space. The action 'Import' allows you to load the archive file into the table 'Activity Monitoring'.



CHAPTER 9

Error handling

If the EBX® Activity Monitoring Add-on raises an error, it has no direct impact on the operation execution. It is the responsibility of the operation to catch the monitor errors and decide whether or not to take action on these errors.

Release Notes

CHAPTER 10

Version 1.3.5

Released: April 2023

This chapter contains the following topics:

10.1 New features

This release was updated to ensure compatibility with the TIBCO EBX® Add-ons Bundle version 4.5.17.

10.2 Changes in Functionality

This release contains no changes in functionality.

10.3 Changes to third-party libraries

This release contains no changes to third-party libraries.

10.4 Closed issues

This release contains no closed issues.

10.5 Known issues

This release contains no known issues.

CHAPTER 11

All release notes

This chapter contains the following topics:

11.1 Version 1.3.5

Released: April 2023

New features

This release was updated to ensure compatibility with the TIBCO EBX® Add-ons Bundle version 4.5.17.

Changes in Functionality

This release contains no changes in functionality.

Changes to third-party libraries

This release contains no changes to third-party libraries.

Closed issues

This release contains no closed issues.

Known issues

This release contains no known issues.

11.2 Release Note 1.3.4

Release Date: September 18, 2020

Updates

This release contains the following updates:

- The add-on has been updated to support the OpenJDK8 and OpenJDK11 libraries.
- Libraries were updated to fix some potential issues.

11.3 Release Note 1.3.3

Release Date: June 23, 2020

Bug fixes

[MTRN-148] The documentation was updated.

11.4 Release Note 1.3.2

Release Date: November 8, 2019

New features

The method used to delete records in the **Event monitoring** table has been updated.

11.5 Release Note 1.3.1

Release Date: June 20, 2019

Featured update

The add-on has been updated to ensure compatibility with the TIBCO EBX® 5.9.4 release.

11.6 Release Note 1.3.0

Release Date: October 26, 2018

Featured update

The EBX® Activity Monitoring Add-on has undergone significant updates to ensure compatibility with the EBX® 5.9.0 GA release.

11.7 Release Note 1.2.4

Release Date: September 6, 2017

Bug fixes

- **[27647]** An unexpected exception occurs when the user fails to log-into the Web Service.

11.8 Release Note 1.2.3

Release Date: March 17, 2017

New features

- **[24404]** It is now possible to track failed logins via EBX® Activity Monitoring Add-on.

11.9 Release Note 1.2.2

Release Date: May 19, 2016

New features

- User log in and log off activity can be monitored via the EBX® event broker and stored by the EBX® Activity Monitoring Add-on.
- An additional color is available to differentiate between an operation that is stopped normally and one that is stopped because of exceeding its maximum duration.

Bug fixes

- **[15807]** The same color can be assigned to more than one status.

11.10 Release Note 1.2.1

Release Date: February 26, 2016

Bug fixes

- **[19415]** The user guide title and table of contents is not up-to-date.

11.11 Release Note 1.2.0

Release Date: November 10, 2014

Archiving

- It is now possible to archive the monitoring log and to restore it in a dedicated data space. The archive process can be launched automatically when a maximum size of the log data is reached, or through the EBX® scheduler.

11.12 Release Note 1.1.0

Release Date: June 19, 2014

EBX® Activity Monitoring Add-on data

- It is now possible to add any bespoke status to monitor operation execution. Every status can be configured with a specific color to differentiate it in the report UI.
- The ready-to-use status 'Wait to be killed' has been added and allows you to request the termination of an operation.

Purge of the monitoring log

- A service is now available to purge the monitoring log.

11.13 Release Note 1.0.0

Release Date: April 8, 2014

EBX® Activity Monitoring Add-on data

- A directory is used to register the operations that can be monitored.
- The 'Activity monitoring' table records all data related to the execution of the monitored operations.
- Color coding is configured to make the operations for which the expected execution time has been exceeded stand out from other operations.

API

- An API is provided to handle the communication protocol between the operation and the monitor.