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BEAJRockit® Mission Control™

Viewing Historical Data

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CHAPTER 1

Using Historical Data

Historical Data is a low overhead way to keep track of and see trends for attributes.

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How Does Historical Data Work?

Historical Data is a low overhead way to keep track of attributes and to see trends for attributes. These attributes that you choose to view are not constricted to attributes for the Oracle JRockit JVM, which means that you can select attributes from your own applications, or any other application that has MBeans registered on the MBean Server.

You select the attributes you want to log to Historical Data on a graph in the Management Console by right-clicking the graph and slecting Log to Historical Data from the context menu resulting from the right-click action. The attributes you choose to log can be viewed in the **Historical Data** window. You can also share the historical data files with others.

Note: Attribute data is persisted as long as you are connected to a JRockit JVM and have the Management Console up and running.

Getting Familiar with the Historical Data Window

The Historical Data window recreates all the graphs for which logging was last enabled in the Management Console, including the titles, attribute colors, and attribute value multipliers of the attributes in the graphs.

Figure 1-1 The Historical Data Window

The **Historical Data** window is divided into the following sections:

1. Graph over attributes that have been recorded.

2. Date selector and time selector—helps you select a specific date and time that you wan to view in the historical data file. When you have set the date and time, click the **Show** button.

3. **Set current time** button—sets the time to the current time. To view data for the current time, click **Show**.

4. **Show data range** button—shows the complete data range for the log files.

5. Attribute section—shows which attributes that have been chosen to be monitored. You can turn them off/on by clicking the **Edit** button.

Using Historical Data

Creating and Viewing Historical Data

There are several steps involved to create historical data. This section describes those steps:

- About Persistence File Preferences

- Creating Historical Data Files

- About Naming Conventions for the Persistence Files

- Viewing Historical Data from Your JRockit JVM Connection

- Displaying Data for a Specific Date and Time Range in the Historical Data Graph

- Sharing Historical Data

About Persistence File Preferences

The persistence file is the file where the attributes that you wish to monitor are saved. This file is automatically saved in `.missioncontrol\persist` directory on your computer. You can, of course, change the directory for where you save the files (see To change the Persistence Directory).

When you log an attribute to historical data, an additional persistence file is added for that connection in the same catalog. As soon as you open one of the persistence files from the same directory, Oracle JRockit Mission Control will plot a collective view of all files from that directory (see Figure 2-1).

Figure 2-1 Difference Between One and Many Persistence Files open in JRockit Mission Control
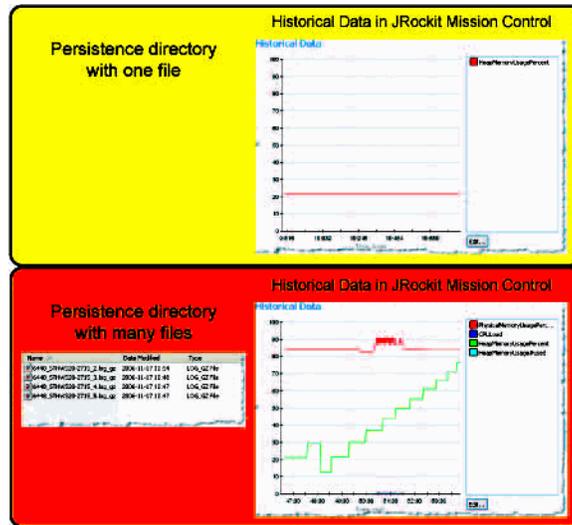
When you enable log rotation, you can set a size on the persisted log. By doing so, you let the Management Console create a new log file as soon as the specified limit is reached (see To change log rotation).

If you combine log rotation with a setting for the maximum log size (see To set maximum log size limit), you will enable full log rotation, i.e. the Management Console will delete the oldest log file as soon as the maximum log size limit is reached, and you will always know how much space the log files take on your computer. Figure 2-2 shows how the settings can look when full log rotation is enabled.

Figure 2-2 Persistence Dialog set with full Log Rotation
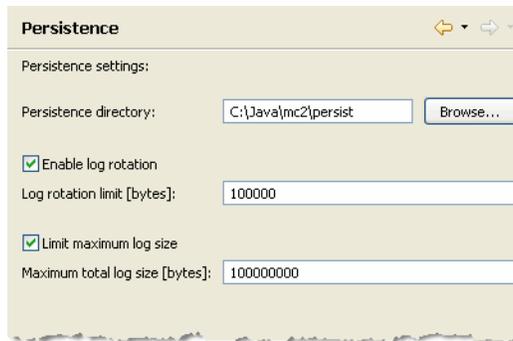
To change the Persistence Directory

1. Click **Window** > **Preferences** > **JRockit Mission Control** > **Management Console** > **Persistence.**

2. Type in a different directory under **Persistence directory**, or click **Browse** to select a directory.

3. Click **Apply** if you want to change other settings or **OK** to exit the **Preferences** window.

To change log rotation

1. Click **Window** > **Preferences** > **JRockit Mission Control** > **Management Console** > **Persistence.**

2. Select **Enable log rotation**.

3. Enter a value in bytes for when the log should be cleared.

4. Click **Apply** if you want to change other settings or **OK** to exit the **Preferences** window.

To set maximum log size limit

1. Click **Window** > **Preferences** > **JRockit Mission Control** > **Management Console** > **Persistence.**

2. Select **Limit maximum log size**.

3. Enter a value in bytes for the maximum log size.

4. Click **Apply** if you want to change other settings or **OK** to exit the **Preferences** window.

Creating Historical Data Files

When you have set up your persistence directory, it is time to create your persistence data log files.
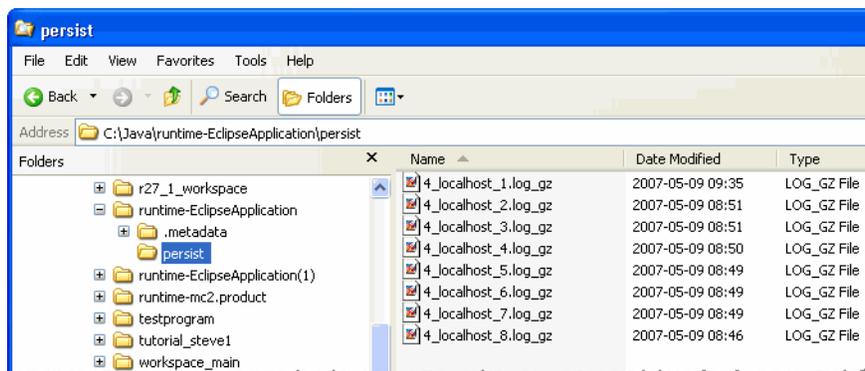
To log to Historical Data

1. Open the Management Console for the desired connection.

2. Open the tab that contains the data you want to log (this must be graph data; you cannot log data on tabkes or lists).

3. Place your pointer anywhere on the graph and right-click the mouse to open the context menu.

4. Select **Log to Historical Data**.

    A new Historical Data file is now created in the persist directory (see Figure 2-3). The file will contain all attributes and the chart's metadata.

Figure 2-3 A Newly Saved Persistence Directory

You can now drag and drop the newly created log file to the JRockit Mission Control window to view the result in Historical Data.

Viewing Historical Data from Your JRockit JVM Connection

You can view historical data at the same time you are monitoring you connection in the JRockit Management Console. As soon as you add another attribute to be persisted, you will get an additional log file in your persist directory and the Historical Data can be updated to reflect the change.

To view historical data for an active Oracle JRockit JVM connection

1. Select the active Oracle JRockit JVM connection in the JVM Browser.

2. Right click on the connection and select **Historical Data**.

    The Historical Data window opens in the JRockit Mission Control Client window.

Displaying Data for a Specific Date and Time Range in the Historical Data Graph

Sometimes a log file can contain data that has been recorded over a long period of time, but you are only interested in viewing data up until a specific date and/or time. Then it is useful to change the date and time range that is displayed in the data graph. The data that is displayed spans from the beginning of the recording to the date and time you specify.

To change the date range in the Historical Data graph

1. Under **Select last time to display**, set the date and time.

2. Click **Show**.

   The Historical Data graph now changes to display the data collected up till the date and time that you have specified.

To set the date range to show all historical data

- Click the **Show data range** button.

Sharing Historical Data

You can easily share the log files with others. This can be useful when you do not have a connection in your JVM Browser for a specific JRockit JVM instance. If you have several log files from the same run, you need to make sure that they are together in the same folder when they are opened; otherwise, important data will be lost in the viewing process.

To view data from JRockit JVMs for which you do not have connections

1. Make sure you have the log files in a directory.

   If you have many log files within the same catalog and with the same name (different index), you will get a compiled view of all log files from that folder.

2. Click **File** > **Open** > **Open Historical Data**.

   The log file appears in the JRockit Mission Control window.

About Naming Conventions for the Persistence Files

As soon as you have selected attributes to be logged to Historical Data, JRockit Mission Control creates two files:

- A log file for that attribute (see Figure 2-4) in your default Persist catalog (or the directory of your choice, see To change the Persistence Directory).

Figure 2-4 Persistence Files Saved

- A metadata file that contains the layout of the graph from which the data was logged.

The log file for the attribute uses the following naming convention:

`internal identification number_connectionname_index.log_gz`

For example:

`142_localhost_3.log_gz`

The example file reads like this:

The `142` identification number (the number that JRockit Mission Control uses to identify all log files belonging to the same connection) for the `localhost` connection and the third (`3`) log file for that connection.

The metadata file uses this naming convention:

`internal identification number_metadata.xml`

For example:

`142_metadata.xml`

> If the metadata file is not included in the directory of the `log_gz` files, the JRockit Mission Control Client will just show all the attributes in one graph as it previously did before it saved the graph layout.

Customizing the Historical Data Graph

When you open your Historical Data window the information about the attributes are displayed on the Historical Data graph. This section describes how to use the graph so that you can view the attributes data in the manner you chose.

This section is divided into the following topics:

- Zooming-in to a Graph

- Changing the Y-Axis on a Graph

- Enable/Disable Attributes on the Graph

Zooming-in to a Graph

You can zoom-in on either a selected portion of the graph or to different time granularities, as described in Table 3-1.

Table 3-1 Graph Zoom Levels

This zoom level	Shows this information
Selection	A specific, user-defined range on the graph.
Seconds	Second-by-second.
Minutes	Minute-by-minute.
Hours	Hour-by-hour.

Table 3-1 Graph Zoom Levels

| This zoom level	Shows this information
Zoom In	Zooms in on the graph.
Zoom Out	Zooms out on the graph.

This section explains the following:

- To zoom-in on a selected range on the graph

- To zoom-in to a specific time increment

To zoom-in on a selected range on the graph

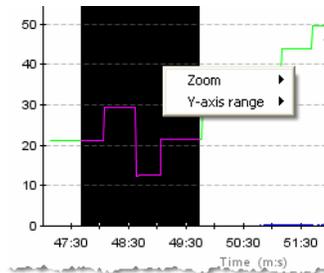1. Place the pointer at the far left edge of your selected data range and, holding down the left mouse button, drag to the far right edge of the range, as shown in Figure 3-1.

Figure 3-1 Graph with Range Selected
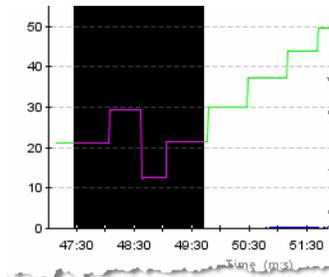
2. Place the pointer over the selection and right-click the mouse.

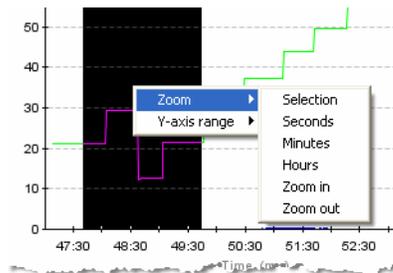   A context menu for the graph appears (Figure 3-2).

Figure 3-2 Graph Context Menu

3. Select **Zoom**.

   A submenu for **Zoom** appears (Figure 3-3).

Figure 3-3 Graph Context Menu with Zoom Level Submenu Open

4. Select **Selection**.

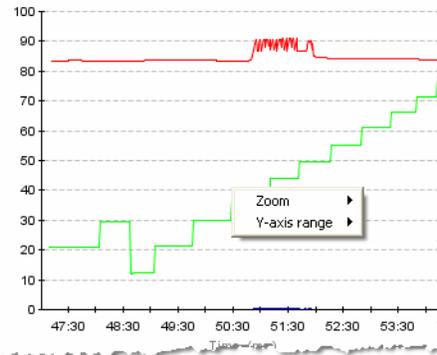   The graph refreshes and now shows a detailed view of the selected data range.

To zoom-in to a specific time increment

1. Place the pointer anywhere on the graph and right-click the mouse.

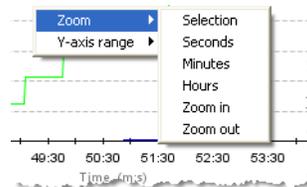   The graph's context menu appears (Figure 3-4).

Figure 3-4 Graph Context Menu

2. Select **Zoom**.

    The zoom level context menu appears (Figure 3-5).

Figure 3-5 Zoom Level Context Menu

3. Select the time increment at which you want to monitor data.

    The graph refreshes to show the data within the selected time increment.
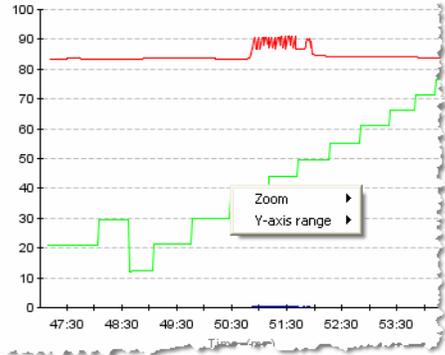
Changing the Y-Axis on a Graph

The graph data that is by default expressed in percentages running from 0 to 100%. Use the following procedure to change the Y-axis range.

To change the Y-axis range

1. Place the pointer anywhere on the graph and right-click the mouse.

    The graph's context menu appears (Figure 3-6).

Figure 3-6 Graph Context Menu

2. Select **Y-axis range**.

   The Y-axis range context menu appears (Figure 3-7).

Figure 3-7 Y-axis Range Context Menu

3. Select the range type you want to use.

    –   **Auto** sets the range to that which will include all attributes selected for the graph.

    –   **Percent** sets the range at 0 to 100%.

    –   **Custom** sets any range.

    If you select **Custom**, the **Enter y-axis range** dialog box appears (Figure 3-8).
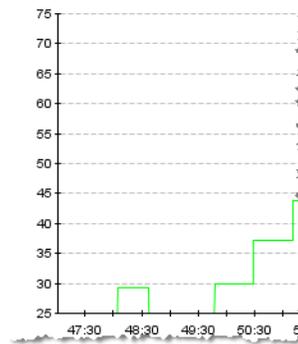
Figure 3-8 Enter y-axis range Dialog Box
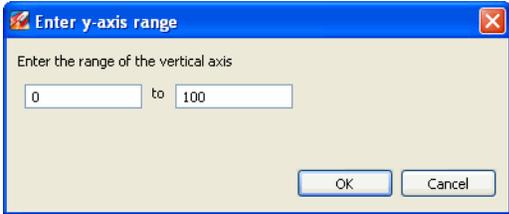
4. Enter the range you want to show on the Y-axis and click **OK**.

    The Y-axis reformats to show the new range; for example, if you set the range from 25% to 75%, the graph would reformat like the example in Figure 3-9.

Figure 3-9 Reformatted Y-Axis with Custom Range Set

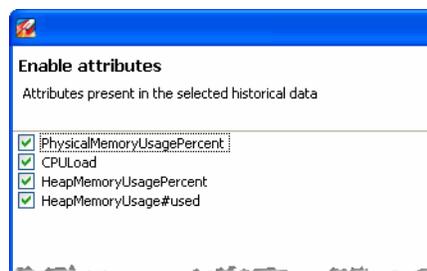# Enable/Disable Attributes on the Graph

The attributes on the Historical Data graph can be disabled (hidden). This is a good feature if you, for example, only want to view attributes that are expressed in percentages.

To enable or disable attributes

1. Click the **Edit** button.

    The **Enable attributes** window appears (Figure 3-10).

Figure 3-10 Enable Attributes Window

2. Select (or deselect) the attributes you want to hide.

3. Click **OK**.

   The attribute is now hidden in the Historical Data graph.

Customizing the Historical Data Graph