

Application Monitoring MashApp

This chapter covers the following topics:

- General Information
 - Preparing to Use the MashApp
 - Special Configuration for Application Monitoring
 - Using the MashApp
-

General Information

The Application Monitoring Data Collector collects the response time data of each involved software component of selected synchronous EntireX RPC, CICS ECI or IMS Connect services and stores it in CSV (comma-separated values) files.

MashZone is a browser-based application from Software AG which enables you to visualize any data from various, independently distributed data sources in a so-called MashApp. Software AG provides a sample Application Monitoring MashApp which shows and evaluates the data which is collected by the Application Monitoring Data Collector. It is a showcase how a KPI-specific visualization can be achieved with MashZone.

The Application Monitoring MashApp supports MashZone 2.3 and above.

Preparing to Use the MashApp

The following topics are covered below:

- Downloading the MashApp
- Unpacking the Zip File
- Editing the Resource Files
- Activating the MashApp

Downloading the MashApp

The Application Monitoring MashApp and related data are provided in a zip file in Empower, as a download component for EntireX. To download the zip file, proceed as follows:

1. Log in to Empower (<https://empower.softwareag.com/>).
2. Go to **Products & Documentation > Download Components > EntireX - Application Monitoring MashApp**.

- Download the "Application Monitoring MashApp" component (*EXX_AppMon_MashApp.zip*).

In addition to the zip file, Empower also provides a readme file (*Readme_EXX_AppMon_MashApp.txt*) which contains the latest update information.

Unpacking the Zip File

You have to unpack the *EXX_AppMon_MashApp.zip* file to the following MashZone user data directory, depending on the MashZone version that you are using:

- For MashZone 9.0 and above:

<installation-directory>\server\bin\work\work_mashzone_<t>\mashzone_data

<t> indicates the type of the MashZone server. Types are *s*, *m*, and *l*. For example, *work_mashzone_m* for a medium type.

- For MashZone versions lower than 9.0:

<installation-directory>

where *<installation-directory>* is the MashZone installation directory.

After unpacking the zip file, the following directories are available in the MashZone user data directory:

| Directory | Content |
|--|---|
| <i>importexport\ApplicationMonitoring_<date></i> | MashApp for application monitoring. |
| <i>resources\ApplicationMonitoring\Definition</i> | Resources used by the MashApp. Initially, this directory contains the resources which do not have to be edited. |
| <i>resources\ApplicationMonitoring\Definition_src</i> | Source directory for resources which have to be edited (further information is provided below) and copied into the <i>resources\ApplicationMonitoring\Definition</i> directory. |
| <i>resources\ApplicationMonitoring\Data</i> | Default application monitoring directory. This is the directory where the MashApp expects by default the application monitoring overview and data files. |
| <i>assets\colorschemes</i> | Color schemes. The color schemes for application monitoring are named <i>AppMon_*.xml</i> . |

Editing the Resource Files

To adapt the Application Monitoring MashApp to your requirements, you have to edit the resource files in the *resources\ApplicationMonitoring\Definition_src* directory as described below. The resource files are CSV files with commas (,) as separators. To edit them, any tool which is able to handle text files can be used.

The following resource files are provided:

- **Directory.csv**

The Application Monitoring MashApp expects that the application monitoring CSV files are available in any subdirectory of the <MashZone-user-data>\resources\ApplicationMonitoring directory. If the Application Monitoring Data Collector writes its data directly into such a subdirectory, you can continuously monitor the incoming data. If your application monitoring data has been written into any other directory, you can manually copy the whole directory (including the *apmon.overview.v1.csv* file) into a subdirectory of the <MashZone-user-data>\resources\ApplicationMonitoring directory and analyze the data with the MashApp. The MashApp refreshes every minute so that it always displays the most recent data.

The *Directory.csv* file contains the relative names of the subdirectories containing the application monitoring data. If you use multiple directories, you have to specify one line for each directory.

The first line in the file is in general used as the default directory when you start the MashApp. Further directory entries can be selected on the **Data Files** tab of the MashApp. The delivered *Directory.csv* file contains one sample line for the *Data* directory. If you do not modify the *Directory.csv* file, all application monitoring data files are expected in the *resources\ApplicationMonitoring\Data* directory.

| Column | Description |
|-------------|--|
| Enable | An entry is only shown on the Data Files tab of the MashApp if "Enable" is set to "y". |
| Description | Specify a descriptive name for the directory. The descriptions are used in the data file selection of the MashApp. If the description is empty, the "Path" value is used as the description. |
| Path | Specify the path to the application monitoring directory. The path is always left-expanded with <i>./resources/ApplicationMonitoring/</i> . The default path is <i>Data</i> which is expanded to <i>./resources/ApplicationMonitoring/Data</i> . |

- **Properties.csv**

This file contains settings for the Application Monitoring MashApp. You can specify a value for each given property. If you do not modify the *Properties.csv* file, the default property values are used.

| Property | Description |
|----------------------|---|
| Response Time yellow | <p>The response time reflects the complete time of the roundtrip from the client to the server and back. The lower the response time, the better the overall application performance. Good, average or poor performance is indicated in the MashApp by a green, yellow or red colored background, respectively.</p> <p>Specify the value of the yellow threshold (in units of milliseconds) for which the response time leaves the green zone. Default: 1000.</p> |
| Response Time red | Specify the value of the red threshold (in units of milliseconds) for which the response time leaves the yellow zone. Default: 2000. |

Activating the MashApp

To activate the Application Monitoring MashApp, make sure you have a Professional, Enterprise or Event license file, that you have administrator rights, and then proceed as follows:

1. Copy all resource files from *resources\ApplicationMonitoring\Definition_src* to *resources\ApplicationMonitoring\Definition*.
2. Invoke MashZone.
3. Go to the **Administration** page (see the corresponding link at the top of the page) and then to the **Import/Export/Delete** page.
4. Import the MashZone archive file (*.mzp) from the *importexport\ApplicationMonitoring_<date>* directory using the **Import** function.

The MashApp in the *importexport\ApplicationMonitoring_<date>* directory is named as follows:

M_Application Monitoring <version>_<revision>_<date>-<time>.mzp

Special Configuration for Application Monitoring

The following configuration parameters of the Application Monitoring Data Collector (see *Configuration for Application Monitoring*) require special settings when data is to be evaluated by the Application Monitoring MashApp.

| Parameter | Special Configuration |
|--|--|
| <code>entirex.appmondirectory</code> | <p>If the MashApp is to continuously monitor the application monitoring data, set this parameter to</p> <p><i><MashZone-user-data>/resources/ApplicationMonitoring/Data</i></p> <p>Alternatively, you can also use a different subdirectory of the <i>resources/ApplicationMonitoring</i> directory. In this case, you have to adjust the <i>Directory.csv</i> resource file accordingly.</p> |
| <code>entirex.appmondmaxlines</code> | <p>MashZone Version 9.6 and above is able to process a maximum of 100000 lines in a table. For previous versions, the maximum value is 10000 lines.</p> <p>By default, the MashApp concatenates seven CSV files. It is therefore recommended to restrict this parameter to 14000 for MashZone Version 9.6 and above, or to 1400 for previous versions. If you plan to concatenate less CSV files in general, you can use a higher value.</p> |
| <code>entirex.appmondusezeroasnullvalue</code> | Set this parameter to <i>yes</i> to avoid errors in the MashApp. |

Using the MashApp

After you have specified all required information as described above, you can proceed as follows:

1. Invoke MashZone.
2. Open the MashApp "Application Monitoring".
3. Select the **Overview** tab.



The MashApp consists of several tabs offering various functions for monitoring and analyzing the application monitoring data. It also has one tab for data file selection, and one tab for the overview. The overview page shows a brief description of the tabs and charts available in the MashApp (see also the following table) and provides links to the corresponding functions.

| Tab Name | Function Name | Description |
|---------------|---------------------------------|--|
| Response Time | Response Time Monitor | Provides history charts which show the general performance and system load consumed by your distributed application. |
| Transactions | Transaction Monitor | Provides history charts which show the general service usage. |
| Successful | Successful Transactions | Provides a response time analysis for successful transactions. |
| Error | Error Transactions | Provides a response time analysis for error transactions. |
| Average | Average Response Time | Provides a performance analysis for the components of your distributed application. |
| Total | Total Response Time | Provides an analysis of the system load consumed by the components of your distributed application. |
| Distribution | Distribution | Shows the distribution of the selected KPI (transactions, response times, database calls) over the instances of selected components (scenario, application, program, client host, client application, or client user). |
| High Values | High Values | Shows for each component the most used instances, maximum response times, and more. |
| Aggregation | Aggregation | Shows summarized information for all instances of the selected aggregation criterion. |
| Data Files | Data File Selection | Allows you to select the CSV data files that are to be evaluated by the MashApp. |
| Overview | Application Monitoring Overview | Gives an overview of the functions and charts of the MashApp, including links to the corresponding tabs. |

The following topics are covered below:

- Common Master View
- Response Time Monitor
- Transaction Monitor
- Successful Transactions
- Error Transactions
- Average Response Time
- Total Response Time
- Distribution
- High Values
- Aggregation
- Data File Selection
- Application Monitoring Overview

Common Master View

On most tabs, a common master view is shown at the top.

| <p>Transaction Monitor 2014-06-28 17:08 - 18:08</p> <table border="1"> <thead> <tr> <th colspan="2">Number of Transactions</th> </tr> </thead> <tbody> <tr> <td>Success</td> <td>120</td> </tr> <tr> <td>Error</td> <td>0</td> </tr> <tr> <td>Total</td> <td>120</td> </tr> </tbody> </table> | Number of Transactions | | Success | 120 | Error | 0 | Total | 120 | <p>Time Range in the Selected Files Last hour</p> <p>Only Valid for Custom Range 06/26/2014 OK 00 00</p> <p>Only Valid for Custom Range 06/28/2014 OK 23 59</p> <p>Time Interval 1 minute</p> | <p>Scenario All scenarios</p> <p>Application in Data Collector All applications</p> <p>Server Program All programs</p> <p>Client Host All client hosts</p> | <p>Client Application All client applications</p> <p>Client User All client users</p> |
|--|------------------------|-----|---------|-----|-------|---|-------|-----|---|--|---|
| | Number of Transactions | | | | | | | | | | |
| | Success | 120 | | | | | | | | | |
| | Error | 0 | | | | | | | | | |
| Total | 120 | | | | | | | | | | |

In general, the master view contains the following elements (from left to right, and from top to bottom):

- The MashApp function (for example, "Transaction Monitor") and the currently selected time range.
- Summarized data for the current function (for example, the number of transactions) according to the values that are currently selected in the master view.
- A selection box for selecting the time range. The following predefined time ranges are available:

- Last hour
- Last 2 hours
- Last 4 hours
- Last 8 hours
- Last day
- Last 2 days
- Last week
- Last 2 weeks
- Last month
- Last quarter

Last year
All data in the selected files
Custom range

The **Last ...** time ranges always use the last entry in the selected data files as the basis. For example, if the last entry in the selected data files was written at 09:00, the **Last hour** refers to the time from 8:00 to 9:00.

The MashApp offers only those **Last ...** time ranges which are appropriate for the currently selected data files. For example, if the selected data files comprise 3 hours, the MashApp will not offer **Last 4 hours** or higher values.

The time range **All data in the selected files** refers to all data in the data files that are currently selected on the **Data Files** tab.

When you select **Custom range**, the titles for the selection boxes in the next two lines will change from **Only Valid for Custom Range** to **Custom Range From** and **Custom Range To**. You can then specify the desired start and end times (date, hour and minute) for the time range in these two lines. The custom range is not restricted to the data of the currently selected data files. It always reads from the start date until it reaches the end date, or until seven data files have been read (the MashApp is only able to evaluate up to seven data files).

- A selection box for the time interval. The following predefined time intervals are available:

1 minute
5 minutes
10 minutes
15 minutes
30 minutes
1 hour
2 hours
4 hours
8 hours
1 day
1 week

The time interval is used when the data has to be aggregated on the time axis of a history chart. For example, if the time interval is **10 minutes**, all data of a 10 minute time interval is aggregated into one value which is displayed in the history chart.

The MashApp offers only those time intervals which are appropriate for the currently selected time range and which will not end up with too many entries. For example, if the selected time range comprises 1 week, the MashApp will offer the aggregated time intervals from 2 hours to 1 day.

- Selection boxes for the following components:

Scenario
Application in Data Collector
Server Program
Client Host
Client Application
Client User

The charts on the different tabs of the MashApp evaluate the data according to the selected components. By default, the MashApp evaluates all data for all components.

The MashApp only offers for selection the components which are available in the currently selected data files and in the currently selected time range. The component selection boxes are filled from top to bottom. The content of each selection box depends on the selection in the previous selection box.

Possible scenarios are:

RPC
CICS ECI
IMS Connect

The application names are defined in the EntireX broker attribute file. See *Setting Up EntireX Broker*.

- Other selection boxes in the common master view, which have not been mentioned above, are function-specific and are described in the corresponding sections later in this documentation.

Response Time Monitor

The **Response Time** tab shows the history of the response time according to the selected time range and components. The data is aggregated according to the selected aggregated time interval.



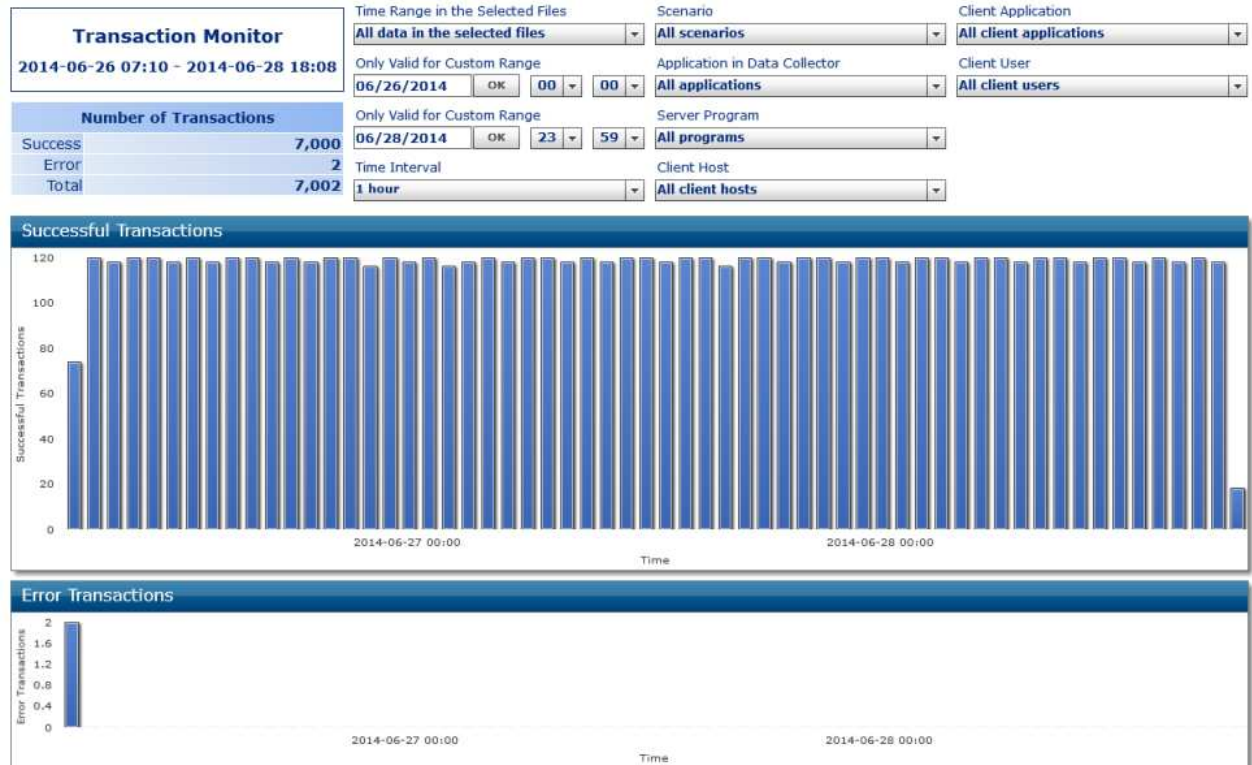
The upper chart shows the history of successful transactions; the lower chart shows the history of error transactions. You can select the following from the **Criterion for Aggregation** selection box:

- **Average response time**
The average response time is an indicator for the performance of your distributed application. The lower the average response time, the better the performance. Good, average or poor performance is indicated by the colored background according to the settings in the *Properties.csv* file.
- **Maximum response time (default)**
The maximum response time shows the response time peaks of your distributed application for each aggregated time interval. The chart helps to identify single transactions which perform poorly, regardless of how the application has performed in average. Good, average or poor performance is indicated by the colored background according to the settings in the *Properties.csv* file.
- **Total response time**
The total response time is an indicator for the system load consumed by your distributed application. Even an application with a good performance may have a high system load if it is called very often.

The summarized data at the top of the tab shows the average, maximum or total response time for the selected successful transactions and error transactions. For the average and maximum response times, icons indicate good, average or poor performance according to the settings in the *Properties.csv* file.

Transaction Monitor

The **Transactions** tab shows the history of the number of transactions according to the selected time range and components. It is an indicator for the general service usage. The data is aggregated according to the selected aggregated time interval.

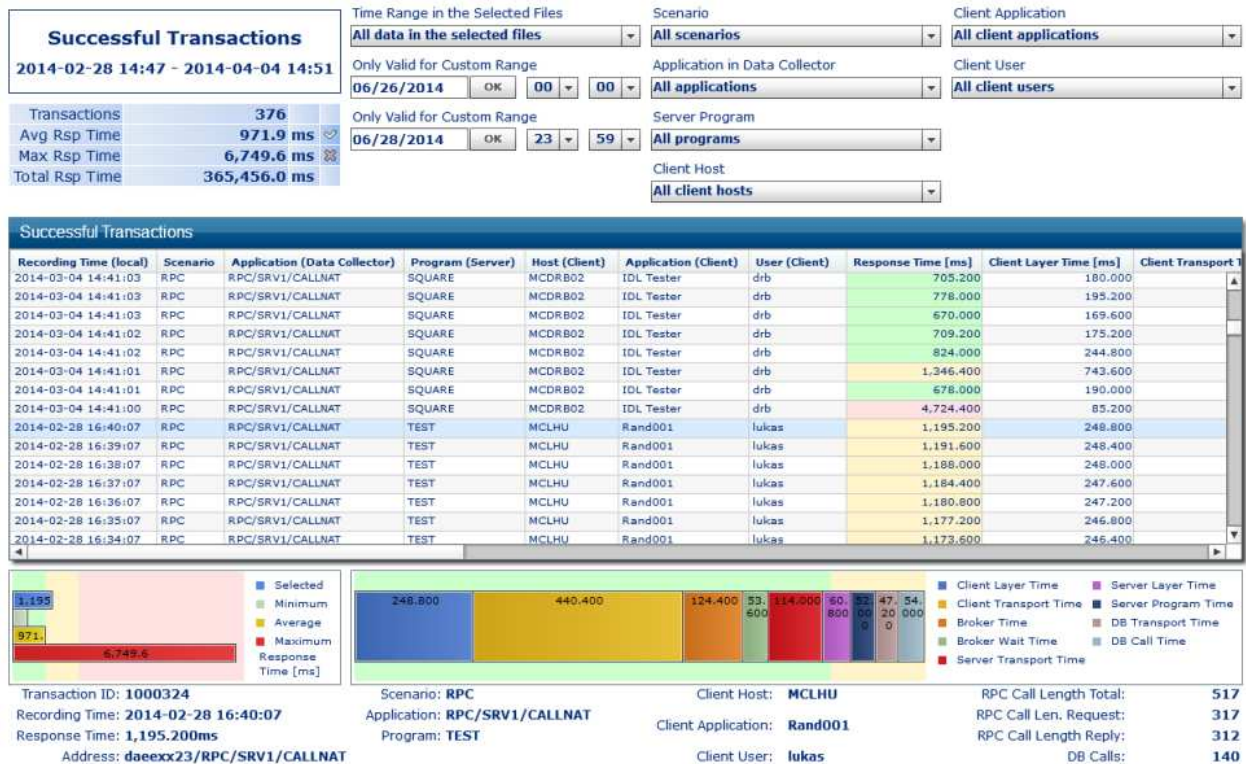


The upper chart shows the history of successful transactions; the lower chart shows the history of error transactions.

The summarized data at the top of the tab shows the total number of successful transactions and error transactions, and the total of both for the selected time range and components.

Successful Transactions

The **Successful** tab shows the successful transactions in the selected time range for the selected components.



The table shows the application monitoring KPIs for each transaction. These are the KPIs for the successful requests as described in *KPI Definitions for Application Monitoring*.

In addition to the application monitoring KPIs, the table lists the **Transaction ID** which uniquely identifies each transaction. The transaction ID consists of the sequence number of the currently used data file in the *appmon.overview.v1.csv* file and (for the last six digits) the number of the record in the data file. By default, the transactions in the table are sorted by the transaction ID. You can change the sorting by clicking on the header of any column.

The **Response Time** column is colored according to the settings in the *Properties.csv* file, indicating good, average or poor performance.

When you select (click) a transaction, all available column values are shown at the bottom of the tab and the distribution of the measured times is visualized in the right bar chart below the transaction table. The left bar chart shows the response time of the currently selected transaction and compares it with the minimum, average and maximum response times of all transactions in the table. By default (if no transaction is selected), both charts show the average response time and the background is colored according to the settings in the *Properties.csv* file, indicating good, average or poor performance.

The summarized data at the top of the tab shows the number of successful transactions and the average, maximum and total response times for all successful transactions in the selected time range for the selected components. For the average and maximum response times, icons indicate good, average or poor performance according to the settings in the *Properties.csv* file.

Error Transactions

The **Error** tab shows the error transactions in the selected time range for the selected components.

Error Transactions

2014-02-28 14:47 - 2014-04-04 14:51

| | |
|----------------|-------------|
| Transactions | 8 |
| Avg Rsp Time | 3,493.5 ms |
| Max Rsp Time | 9,096.8 ms |
| Total Rsp Time | 27,948.4 ms |

Time Range in the Selected Files
All data in the selected files

Only Valid for Custom Range
06/26/2014 OK 00 00

Only Valid for Custom Range
06/28/2014 OK 23 59

Scenario
All scenarios

Application in Data Collector
All applications

Server Program
All programs

Client Application
All client applications

Client User
All client users

Client Host
All client hosts

| Cumulated Errors | | | | | |
|------------------|------------|-------------------|-------------------|---------------------|----------------------------------|
| Error Code | Occurrence | Avg Rsp Time [ms] | Max Rsp Time [ms] | Total Rsp Time [ms] | Error Message |
| 20120353 | 2 | 9,096.800 | 9,096.800 | 18,193.600 | java.net.UnknownHostException: a |
| Rc 0007 | 2 | 454.000 | 454.000 | 908.000 | RPC/SRV1/CALLNAT not registered |
| 00070007 | 2 | 1,541.600 | 2,217.600 | 3,083.200 | RPC/SRV1/CALLNATx not registered |
| Rsp 0007 | 2 | 2,881.800 | 4,865.600 | 5,763.600 | RPC/SRV1/CALLNATx not registered |

| Error Transactions | | | | | | | | | |
|------------------------|-----------|------------------------------|------------------|---------------|----------------------|---------------|--------------------|------------|---------------------------|
| Recording Time (local) | Scenario | Application (Data Collector) | Program (Server) | Host (Client) | Application (Client) | User (Client) | Response Time [ms] | Error Code | Error Message |
| 2014-04-04 14:47:42 | RPC | RPC/SRV1/CALLNATx | SQUARE | MCDR802 | IDL Tester | drb | 4,865.600 | Rsp 0007 | RPC/SRV1/CALLNATx not reg |
| 2014-04-04 14:47:12 | RPC | RPC/SRV1/CALLNATx | SQUARE | MCDR802 | IDL Tester | drb | 898.000 | Rsp 0007 | RPC/SRV1/CALLNATx not reg |
| 2014-03-04 14:41:03 | RPC | RPC/SRV1/CALLNAT | SQUARE | MCDR802 | IDL Tester | drb | 454.000 | Rc 0007 | RPC/SRV1/CALLNAT not regi |
| 2014-02-28 14:47:58 | IMS Co... | x112 | CALC | daeexx23 | | | 9,096.800 | 20120353 | java.net.UnknownHostExcep |
| 2014-02-28 14:47:57 | CICS ECI | a112 | CALC | daeexx23 | | | 9,096.800 | 20120353 | java.net.UnknownHostExcep |
| 2014-02-28 14:47:51 | RPC | RPC/SRV1/CALLNAT | SQUARE | MCDR802 | IDL Tester | drb | 454.000 | Rc 0007 | RPC/SRV1/CALLNAT not regi |
| 2014-02-28 14:47:47 | RPC | RPC/SRV1/CALLNATx | SQUARE | MCDR802 | IDL Tester | drb | 2,217.600 | 00070007 | RPC/SRV1/CALLNATx not reg |
| 2014-02-28 14:47:42 | RPC | RPC/SRV1/CALLNATx | SQUARE | MCDR802 | IDL Tester | drb | 865.600 | 00070007 | RPC/SRV1/CALLNATx not reg |

Transaction ID: **1000007**

Recording Time: 2014-02-28 14:47:47

Response Time: **2,217.600 ms**

Scenario: **RPC**

Application: **RPC/SRV1/CALLNATx**

Address: **daeexx23:1972/RPC/SRV1/CALLNATx**

Program: **SQUARE**

Host (Client): **MCDR802**

Application (C): **IDL Tester**

User (Client): **drb**

Error Code: **00070007**

Error Message: **RPC/SRV1/CALLNATx not registered**

The upper table shows an overview of all error codes and messages. For each error code, you can see how often this error has occurred and its average, maximum and total response times. The columns for the average and maximum response times are colored according to the settings in the *Properties.csv* file, indicating good, average or poor performance.

The lower table shows the application monitoring KPIs for each transaction. These are the KPIs for the failed requests as described in *KPI Definitions for Application Monitoring*.

In addition to the application monitoring KPIs, the table lists the **Transaction ID** which uniquely identifies each transaction. The transaction ID consists of the sequence number of the currently used data file in the *appmon.overview.v1.csv* file and (for the last six digits) the number of the record in the data file. By default, the transactions in the table are sorted by the transaction ID. You can change the sorting by clicking on the header of any column.

The **Response Time** column is colored according to the settings in the *Properties.csv* file, indicating good, average or poor performance.

When you select (click) a line in the upper table, only the transactions with the selected error code and message are shown in the lower table.

When you select (click) a transaction in the lower table, all available column values are shown at the bottom of the tab. The bar chart below the table shows the response time of the currently selected transaction and compares it with the minimum, average and maximum response times of all transactions in the table. By default (if no transaction is selected), the chart shows the average response time and the background is colored according to the settings in the *Properties.csv* file, indicating good, average or poor

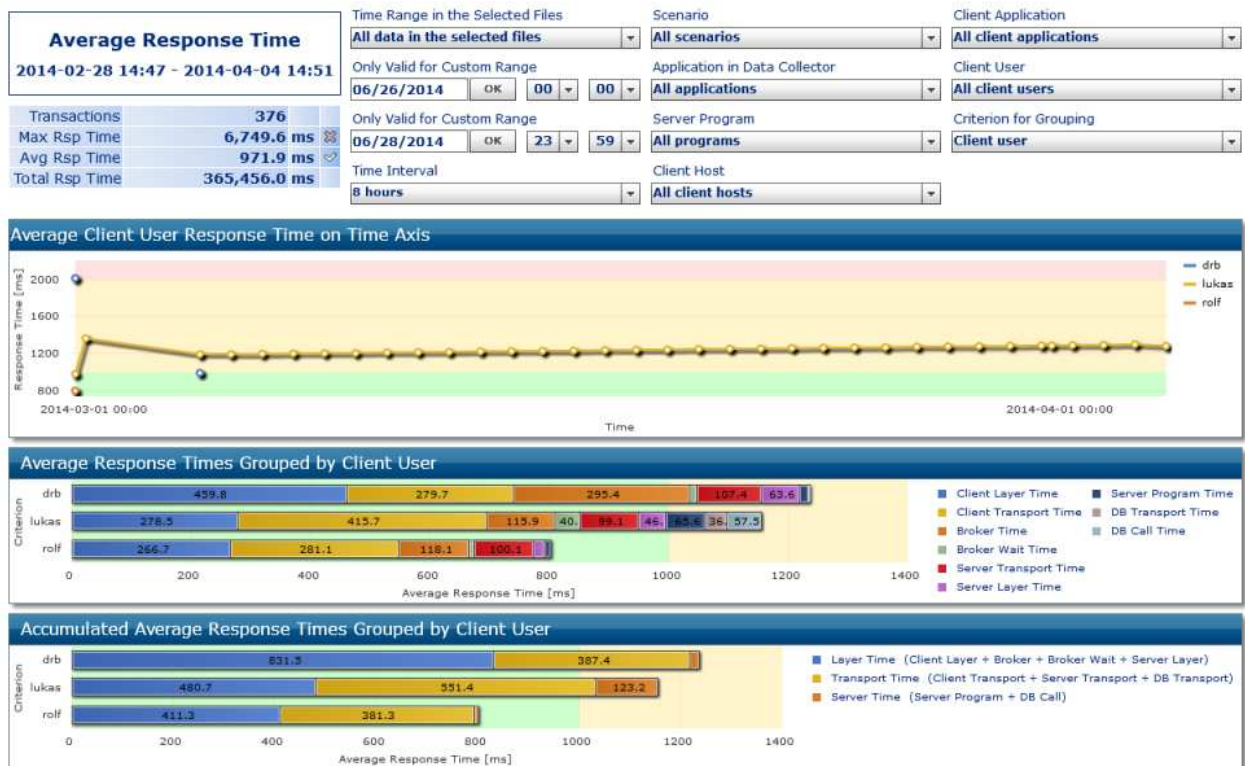
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performance.

The summarized data at the top of the tab shows the number of error transactions and the average, maximum and total response times for all error transactions in the selected time range for the selected components. For the average and maximum response times, icons indicate good, average or poor performance according to the settings in the *Properties.csv* file.

Average Response Time

The **Average** tab shows the average response times of the selected successful transactions grouped by scenario, application, program, client application, client user or client host according to the setting of the **Criterion for Grouping** selection box. By default, all data is summarized into one group.



The average response time is an indicator for the performance of your distributed application. The lower the average response time, the better the performance. Good, average or poor performance is indicated by the colored background according to the settings in the *Properties.csv* file.

The line chart at the top shows the history of the average response time. There is one line for each instance of the selected grouping criterion. The data in the line chart is aggregated according to the selected aggregated time interval.

The bar chart in the middle shows the distribution of single measured times. There is one bar for each instance of the selected grouping criterion.

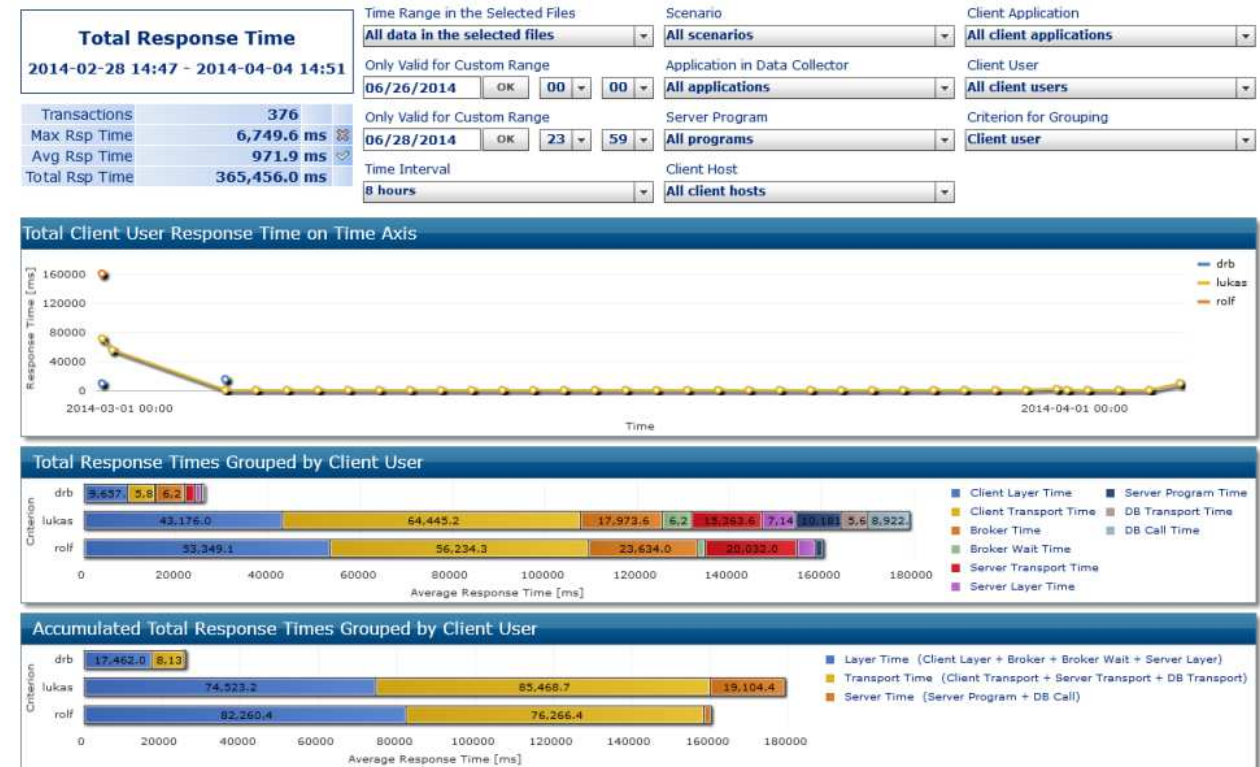
The bar chart at the bottom shows the measured times in three groups: layer time, transport time and server time. There is one bar for each instance of the selected grouping criterion.

By default, both bar charts show the average time of all selected transactions. When you click on a point in the line chart, the bar charts show only the response times of the corresponding point of time.

The summarized data at the top of the tab shows the number of successful transactions and the average, maximum and total response times for all successful transactions in the selected time range for the selected components. For the average and maximum response times, icons indicate good, average or poor performance, according to the settings in the *Properties.csv* file.

Total Response Time

The **Total** tab shows the total response times of the selected successful transactions grouped by scenario, application, program, client application, client user or client host according to the setting of the **Criterion for Grouping** selection box. By default, all data is summarized into one group.



The total response time is an indicator for the system load consumed by your distributed application. Even an application with a good performance may have a high system load if it is called very often.

The line chart at the top shows the history of the total response time. There is one line for each instance of the selected grouping criterion. The data in the line chart is aggregated according to the selected aggregated time interval.

The bar chart in the middle shows the distribution of single measured times. There is one bar for each instance of the selected grouping criterion.

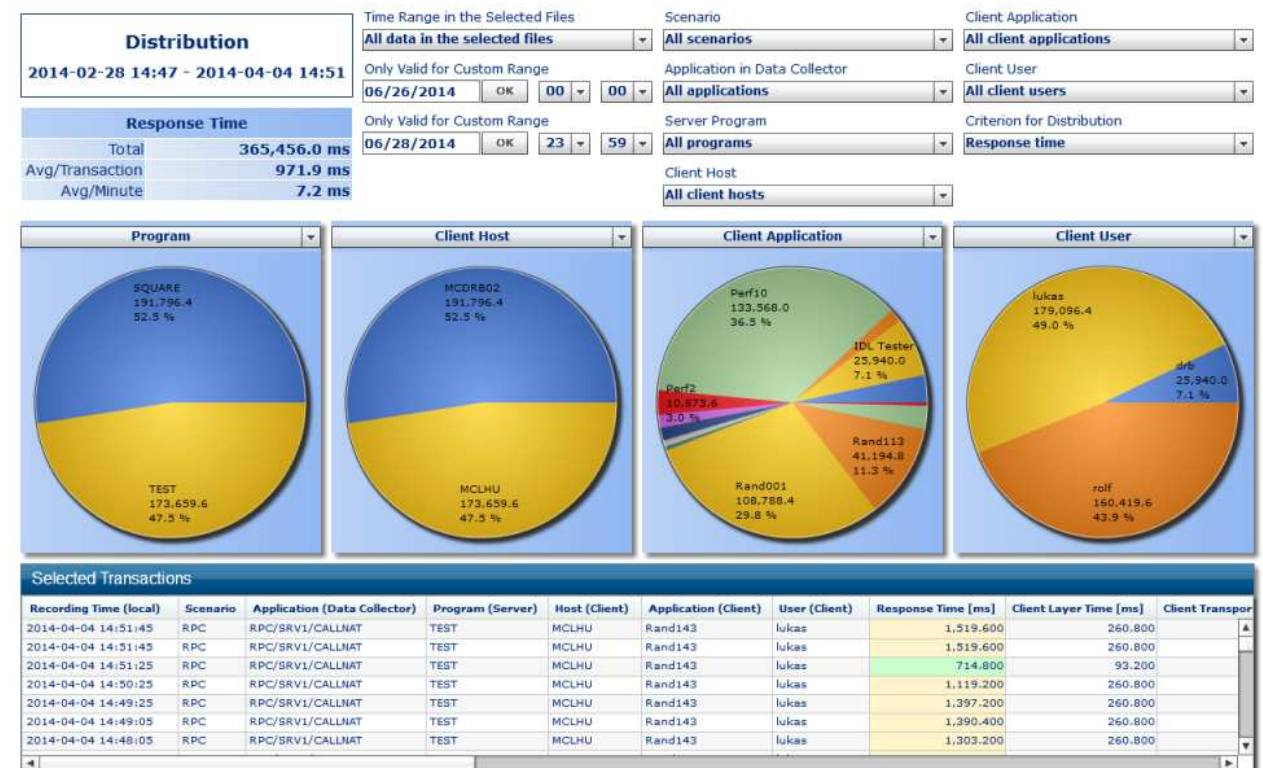
The bar chart at the bottom shows the measured times in three groups: layer time, transport time and server time. There is one bar for each instance of the selected grouping criterion.

By default, both bar charts show the total time of all selected transactions. When you click on a point in the line chart, the bar charts show only the response times of the corresponding point of time.

The summarized data at the top of the tab shows the number of successful transactions and the average, maximum and total response times for all successful transactions in the selected time range for the selected components. For the average and maximum response times, icons indicate good, average or poor performance, according to the settings in the *Properties.csv* file.

Distribution

The **Distribution** tab shows four pie charts. Each pie chart displays the distribution of the selected KPI over the instances of a selected component. Only successful transactions are evaluated in this tab.



You can select the KPIs from the following areas from the **Criterion for Distribution** selection box:

- Transactions
- Response time
- Layer time
 - Client layer time *
 - Broker time *
 - Broker wait time *

- Server layer time *
- Transport time
 - Client transport time *
 - Server transport time *
 - DB transport time *
- Server time
 - Server program time *
 - DB call time *
- DB calls

The layer, transport and server times are summaries of other KPIs. These KPIs are marked by an asterisk (*) in the above list. In the selection box of the MashApp, these KPIs are indicated by a leading ">".

Each pie chart shows the distribution for the component which is currently selected in the selection box directly above the pie chart. For each pie chart, you can select one of the following components:

- Scenario
- Application
- Program
- Client Host
- Client Application
- Client User

The selections in the master view at the top of the page can be used as pre-selections, for example, if only the values of a specific application or user are to be evaluated.

When you select (click) a section in a pie chart, the corresponding component instance will be used as a filter for the subsequent pie charts. For example, when you click the section for the SQUARE program (see the above image), the other pie charts to the right will show only those client hosts, client applications and client users which have called the SQUARE program.

The table at the bottom lists the successful transactions filtered by the selections in the pie charts. The columns in the table are the same as in the Successful Transactions function.

The summarized data at the top of the tab shows the following values for the currently selected distribution KPI: the total, the average per transaction and the average per minute.

High Values

The **High Values** tab shows for each component the number of component instances, the name of the most-used instance and the percentage of the transactions referring the most-used instance.

High Values

2014-02-28 14:47 - 2014-04-04 14:51

| Number of Transactions | |
|------------------------|------------|
| Success | 376 |
| Error | 8 |
| Total | 384 |

Time Range in the Selected Files

Only Valid for Custom Range

Only Valid for Custom Range

Scenario

Application in Data Collector

Server Program

Client Host

Client Application

Client User

Transaction Type

| Component | Instances | Most Used Instance | Percentage |
|--------------------|-----------|---------------------------|------------|
| Application | 4 | RPC/SRV1/CALLNAT | 98.1 % |
| Address | 5 | daeexx23/RPC/SRV1/CALLNAT | 97.9 % |
| Program | 3 | SQUARE | 59.3 % |
| Client application | 17 | Perf10 | 49.7 % |
| Client host | 3 | MCDRB02 | 59.3 % |
| Client user | 4 | rolf | 52.0 % |

| KPI | Average per Transaction | Maximum | Total |
|--------------------|-------------------------|---------|-----------|
| Response time [ms] | 1,024.4 | 9,096.8 | 393,404.3 |
| Number of DB calls | 1,004.4 | 345,671 | 385,699 |
| Request length | 426.5 | 547 | 163,779 |

The following information is shown for some KPIs: the average value per transaction, the maximum value and the total. Note that database calls are only counted for calls against a Natural RPC server on a mainframe, whereas the **Average per Transaction** refers to all transactions.

If desired, the values can be restricted to successful transactions or error transactions only. By default, all transaction types are evaluated.

The summarized data at the top of the tab shows the total number of successful transactions and error transactions and the total of both for the selected time range and components.

Aggregation

The **Aggregation** tab shows summarized information for all instances of the selected aggregation criterion.

Aggregation

2014-02-28 14:47 - 2014-04-04 14:51

Time Range in the Selected Files

All data in the selected files

Only Valid for Custom Range

06/26/2014 OK 00 00

Only Valid for Custom Range

06/28/2014 OK 23 59

Criterion for Aggregation

Client Application

Transaction Type

All transaction types

| Client Application Aggregation for All Transaction Types | | | | | | | |
|--|----------------|---------------------|---------------------|-------------------|-------------------|---------------------|--|
| Instance | ▲ Transactions | First Transaction | Last Transaction | Avg Rsp Time [ms] | Max Rsp Time [ms] | Total Rsp Time [ms] | |
| Big01 | 2 | 2014-02-28 14:47:57 | 2014-02-28 14:47:58 | 9,096.8 | 9,096.8 | 18,193.6 | |
| | 2 | 2014-02-28 16:30:07 | 2014-02-28 16:32:07 | 6,017.4 | 6,749.6 | 12,034.8 | |
| IDL Tester | 27 | 2014-02-28 14:47:36 | 2014-04-04 14:47:42 | 1,322.0 | 5,978.4 | 35,694.8 | |
| Perf1 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 5,687.2 | 5,687.2 | 5,687.2 | |
| Perf10 | 191 | 2014-02-28 14:48:06 | 2014-02-28 14:48:07 | 699.3 | 3,969.6 | 133,568.0 | |
| Perf2 | 2 | 2014-02-28 14:48:04 | 2014-02-28 14:48:06 | 5,436.8 | 5,436.8 | 10,873.6 | |
| Perf3 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 5,647.2 | 5,647.2 | 5,647.2 | |
| Perf4 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 5,504.4 | 5,504.4 | 5,504.4 | |
| Perf5 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 739.2 | 739.2 | 739.2 | |
| Perf6 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 633.6 | 633.6 | 633.6 | |
| Perf7 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 1,383.6 | 1,383.6 | 1,383.6 | |
| Perf8 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 1,280.0 | 1,280.0 | 1,280.0 | |
| Perf9 | 1 | 2014-02-28 14:48:06 | 2014-02-28 14:48:06 | 539.6 | 539.6 | 539.6 | |
| Rand001 | 110 | 2014-02-28 14:48:07 | 2014-02-28 16:40:07 | 988.9 | 1,195.2 | 108,788.4 | |
| Rand113 | 33 | 2014-03-04 14:41:05 | 2014-04-03 14:41:05 | 1,248.3 | 1,299.6 | 41,194.8 | |
| Rand143 | 8 | 2014-04-04 14:51:05 | 2014-04-04 14:51:45 | 1,283.4 | 1,519.6 | 10,267.2 | |
| Wait01 | 1 | 2014-02-28 16:31:07 | 2014-02-28 16:31:07 | 1,374.4 | 1,374.4 | 1,374.4 | |

You can select one of the following aggregation criteria from the **Criterion for Aggregation** selection box:

- Scenario
- Application
- Program
- Client Host
- Client Application
- Client User

By default, all data is summarized.

The table lists all instances of the selected aggregation criterion. The following information is shown for each instance: the number of transactions, the date of the first and last transaction referring the instance, and the average, maximum and total response times. By default, the table shows the values for all transaction types. This can be restricted to successful or error transactions only.

The **Avg Response Time** and **Max Response Time** columns are colored according to the settings in the *Properties.csv* file, indicating good, average or poor performance.

The above image shows an example of a client application aggregation. The table lists all client applications which have been monitored in the selected time range.

Application Monitoring Overview

The **Overview** tab provides a short description of the functions, charts and selections of the Application Monitoring MashApp.

Application Monitoring Overview

Application monitoring enables you to monitor the response times and error situations in your distributed applications. The EntireX Application Monitoring Data Collector collects the response time data of each involved software component of selected synchronous EntireX RPC, CICS ECI or IMS Connect services and stores it in CSV (comma-separated values) files. These files are processed by the Application Monitoring MashApp. The MashApp refreshes every minute so that it always displays the most recent data.

| Functions of Application Monitoring | | | | Criterion for Aggregation | |
|-------------------------------------|-------------------------|---|---------------------------|---------------------------|--|
| Tab | Function | Description | Special Selection | Value | Description |
| Response Time | Response Time Monitor | History of general performance, response time peaks and system load | Criterion for Aggregation | Average | History of general performance |
| Transactions | Transaction Monitor | History of general service usage | | Maximum | History of general response time peaks |
| Successful | Successful Transactions | Response time analysis for successful transactions | | Total | History of general system load |
| Error | Error Transactions | Response time analysis for error transactions | | | |
| Average | Average Response Time | Performance analysis | Criterion for Grouping | | |

| Master View Elements of Function Response Time Monitor | | |
|--|---|---|
| Name | Element Type | Description |
| Function | Text (left) | The Application Monitoring MashApp function. |
| Time Range | Text (left) | The currently selected time range. |
| Summarized data | Table | The average, maximum or total response time for the selected successful transactions and error transactions. For the average and maximum response times, icons indicate good, average or poor performance. |
| Time Range in the Selected Files | Selection box | Select the time range for the current function. The "Last ..." time ranges always use the last entry in the selected data files as the basis. The time range "All data in the selected files" refers to all data in the data files that are currently selected on the Data Files tab. When you select "Custom range", you can specify the desired start and end times in the following two lines. |
| Only Valid for Custom Range / Custom Range From | Date input field and time selection boxes | These fields are only valid if the time range "Custom range" has been selected. Specify the desired start time (date, hour and minute) for the time range. The custom range is not restricted to the data of the currently selected data files. |
| Only Valid for Custom Range / Custom Range To | Date input field and time selection boxes | These fields are only valid if the time range "Custom range" has been selected. Specify the desired end time (date, hour and minute) for the time range. The custom range is not restricted to the data of the currently selected data files. |

| Charts of Function Response Time Monitor | | |
|--|-------------------|--|
| Name | Chart Type | Description |
| Response Time of Successful Transactions | Bar chart (upper) | History of the average, maximum or total application response time for successful transactions. Good, average or poor performance is indicated by a green, yellow or red colored background, respectively. |
| Response Time of Error Transactions | Bar chart (lower) | History of the average, maximum or total application response time for error transactions. Good, average or poor performance is indicated by a green, yellow or red colored background, respectively. |

When you click an entry in the **Tab** or **Value** column, the corresponding page of the MashApp is shown with all selections set to their initial default values (including the data file selection).