

MicroBreak Analysis Documentation

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2. Introduction

2.1. About this Document

This document describes version 2.0.0002 of MicroBreak Analysis for Windows.

2.2. Author and Copyright

This document has been created by MicroBreak Ergonomic Software. Copyright (c) 2020 MicroBreak Ergonomic Software. All rights reserved.

Please consult the End User License agreement (EULA) which accompanies the software for information on licensing.

3. Program Concepts

3.1. Program Purpose and Scope

MicroBreak Analysis is a program that enables the end user to analyse usage data from the MicroBreak program. The usage data from multiple users can be analysed together in one place (see fig. 1).

Please see the documentation of the MicroBreak program for a description of how the program helps you to improve your health by encouraging you to perform physical activities at regular intervals whilst sitting at your computer.

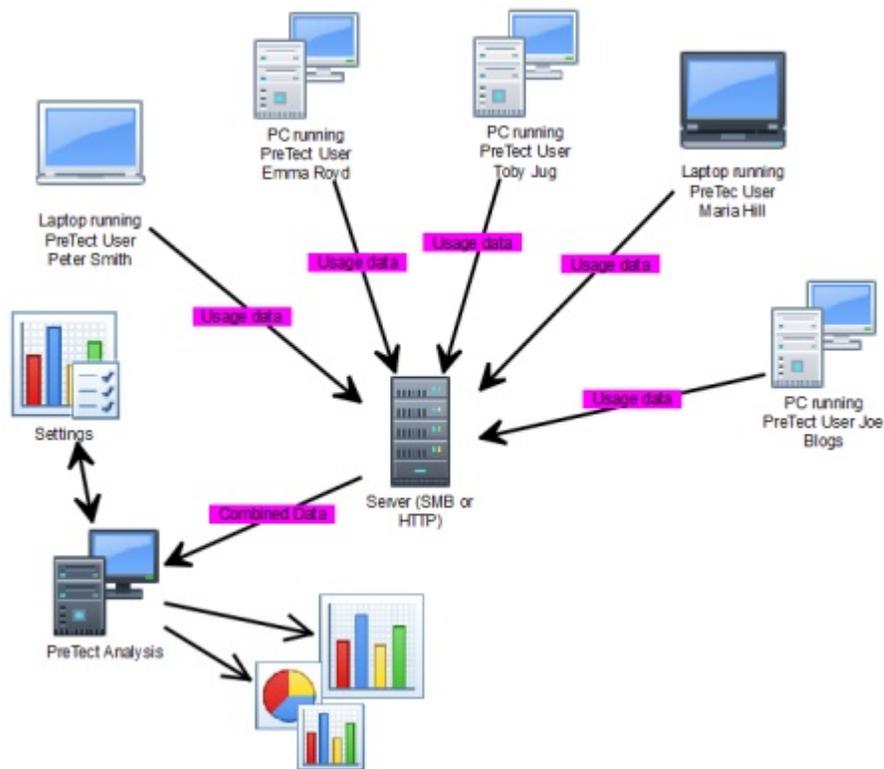


Figure 1: MicroBreak Usage Recording Data Flow

3.2. Usage Data Files

The MicroBreak program can be configured to save information about the usage of the program in a **log file**, either by directly writing to the file or by submitting usage information to a log web server which then saves the log information. In either case the result is one or more log

files which can be analysed by the MicroBreak analysis program.

3.3. Settings

The program settings such as which input files to use and which charts to produce are saved in settings files. Please note that the settings files do not contain the charts themselves.

3.4. Charts

The information analysed by the MicroBreak analysis program can be presented in a number of different **charts** which can be printed and saved.

3.5. Filters

The usage data in the log files needs to be restricted before the charts are created, thus enabling the user to restrict the chart to certain time periods, user groups or activity areas. This is what a "**filter**" does. A filter is a set of conditions which a particular usage log data has to fulfil to be included in a chart. Multiple filters can be combined, for example allowing selection of data relating to a particular user group during working hours.

4. Usage Data Logging

Before the MicroBreak Analysis program can be used, each installation of the MicroBreak main program has to be configured to save usage data in log files.

4.1. Enable and Configure Usage Data Reporting

Usage reporting is normally disabled. It is controlled in the MicroBreak program options dialog. To open this dialog, right-click on the MicroBreak taskbar icon and then select "Options...", then select the "Usage Reporting" tab (see fig. 2).

To enable reporting tick the "Usage reporting enabled" checkbox and fill in the required information.

Once you have configured the setup, use the **Test...** button to verify that this works.

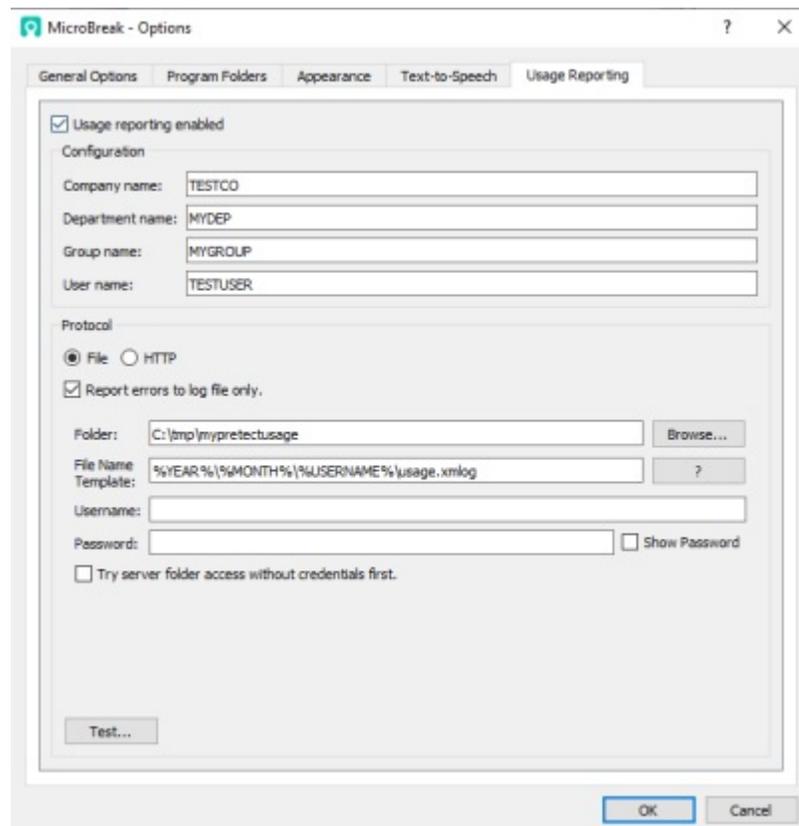


Figure 2: Usage Reporting Tab in MicroBreak

4.1.1. Configuration Data

The **Configuration** section is used to identify this particular installation of MicroBreak and during data analysis filters can be set to group data together, for example by **Department**. Any usage information is stored with the configuration data to identify it. This means that if you change the configuration data only future usage information will be identified with the configuration data.

4.1.2. Protocol Data

The **Protocol** section is used to configure how the data is stored. You can select between **File** and **HTTP** protocols.

4.1.2.1. File Protocol

The file protocol is the default for usage reporting. When "File" protocol is selected the bottom of the "Usage Reporting" tab in the "Options" dialog changes (see fig. 3).

Folder: Select a folder on your computer or on a file server to save the log files.

File Name Template: The file name template allows you to create separate log files depending on the configuration data and current date. This has the advantage that old files or files belonging to a particular user can be removed easily. To create a filename, the program will replace the variable %VARIABLE% in the string supplied.

These variables may be used:

Variable Content

COMPANYNAME The company name, set in the above configuration section.

DEPARTMENTNAME The department name.

GROUPNAME The group name.

USERNAME The user name.

VERSION The program version number.

YEAR The current year.

MONTH The current month.

DAY The current day.

Example: %COMPANYNAME%\%USERNAME%\%YEAR%\%MONTH%\usage.xmllog

Username: If the log file is stored on a SMB file server this user name will be used to log into

the SMB share.

Password: If the log file is stored on a SMB file server this is the password that will be used to log into the SMB share. The password will be stored encrypted in the user settings.

Try server folder access without credentials first. When this checkbox is ticked the MicroBreak program will first try to access the shared folder without using the credentials supplied. Only if this fails will it try to log into the share using the username/password supplied.

Protocol

File HTTP

Report errors to log file only.

Folder:

File Name Template:

Username:

Password: Show Password

Try server folder access without credentials first.

Figure 3: File protocol parameters dialog

4.1.2.2. HTTP Protocol

When the "HTTP" protocol is selected the bottom section of the "Usage Reporting" tab in the Options dialog changes (see fig. 4).

Report errors to log file only. If checked any transmission errors will not be displayed on the screen but simply recorded in the usual error log of MicroBreak.

Server address: This is the http server name.

Port number: This is the port number of the http server.

URL template: This is the template that is used to transmit the information to the web server. The program will use this template to construct the HTTP request. The program will replace the variable %VARIABLE% in the string supplied.

The following variables may be used:

Variable Content

SERVERNAME The server name as configured.

SERVERPORT The port number as configured.

COMPANYNAME The company name.

DEPARTMENTNAME The department name.

GROUPNAME The group name.

USERNAME The user name.

VERSION The program version number.

EXERCISEID The exercise number that has been used.

ACTION The action to be recorded.

Note that SERVERNAME, SERVERPORT, EXERCISEID and ACTION must be supplied.

Reset URL... When you click this button the URL will be reset to the default setting.

Example: `http://%SERVERNAME%:%SERVERPORT%/cgi-bin/reportusage.php?version=%VERSION%&user=%USERNAME%&company=%COMPANYNAME%&department=%DEPARTMENTNAME%&group=%GROUPNAME%&exercise=%EXERCISEID%&action=%ACTION%`

In this example the URL will result in the php script "reportusage.php" being called with the various parameters in the same line. Please refer to the php script to see how the data is then stored in the actual log file.

Protocol

File HTTP

Report errors to log file only.

Server address:

Port number:

URL Template: ?

Reset URL...

Test...

Figure 4: Http protocol parameters dialog

4.1.3. Typical Scenarios

4.1.3.1. Single User

For a single user saving to a local machine you need to select "File" as protocol and enter the folder where the log file should be stored in the "Folder". By default, the logs are generated in the MicroBreak profiles directory and the 'File Name Template' saves the logs as usage.xml files by year, month and username. This is set by using environmental variables in the 'File Name Template' field.

4.1.3.2. Multiple users on a network with an SMB file server, using a shared folder for log files

For multiple users in a local network storing the data on a single file server, select "File" as protocol and enter the SMB share and username/password for this share. Please note that due to a limitation of Microsoft Windows you can only have a single username/password combination per file server. So if you are using a file server where your users are already saving files you would have to configure some group policy which allows those users to also save data to the share where the log file is saved.

4.1.3.3. Multiple users on a network, using a web server

For multiple users in a local network storing the data using a web server, select "HTTP" as protocol and fill in the other data. You will have to create a new webserver (for example via a virtual machine) where you can host the php script required to process and store the usage data. Please refer to the support section on our website for more information on this protocol and in particular for a copy of the php script that can store the data. You may have to modify this

script to suit your needs.

5. Usage Data Analysis

The usage data analysis program "MicroBreak Analysis" is controlled via a main window which opens after startup and which has a number of tabs, each of which deals with a different aspect of the data analysis:

General This is where the general settings for a particular analysis are saved and restored.

Input Data In this tab the input log files (see section 3.2 ("*Usage Data Files*")) can be selected.

Inspect Input Data In this tab the input data can be viewed and controlled.

Filters In this tab the filters (see section 3.5 ("*Filters*")) are viewed and edited.

Charts In this tab the actual charts (see [\[Charts\]](#)) are viewed and edited.

5.1. General Settings

The "General Tab" (see fig. 5) is where the settings are saved and restored. You can have multiple different settings files to generate various different charts with different filters and data selection criteria.

Settings Folder: This is the folder where the settings files (xml files) are stored.

Settings File: This is the actual settings file where the current settings can be saved to.

Open... Open an existing settings file.

Save Save the current settings.

Title, Author, Notes: The title and author are comments only and help to describe the particular settings.

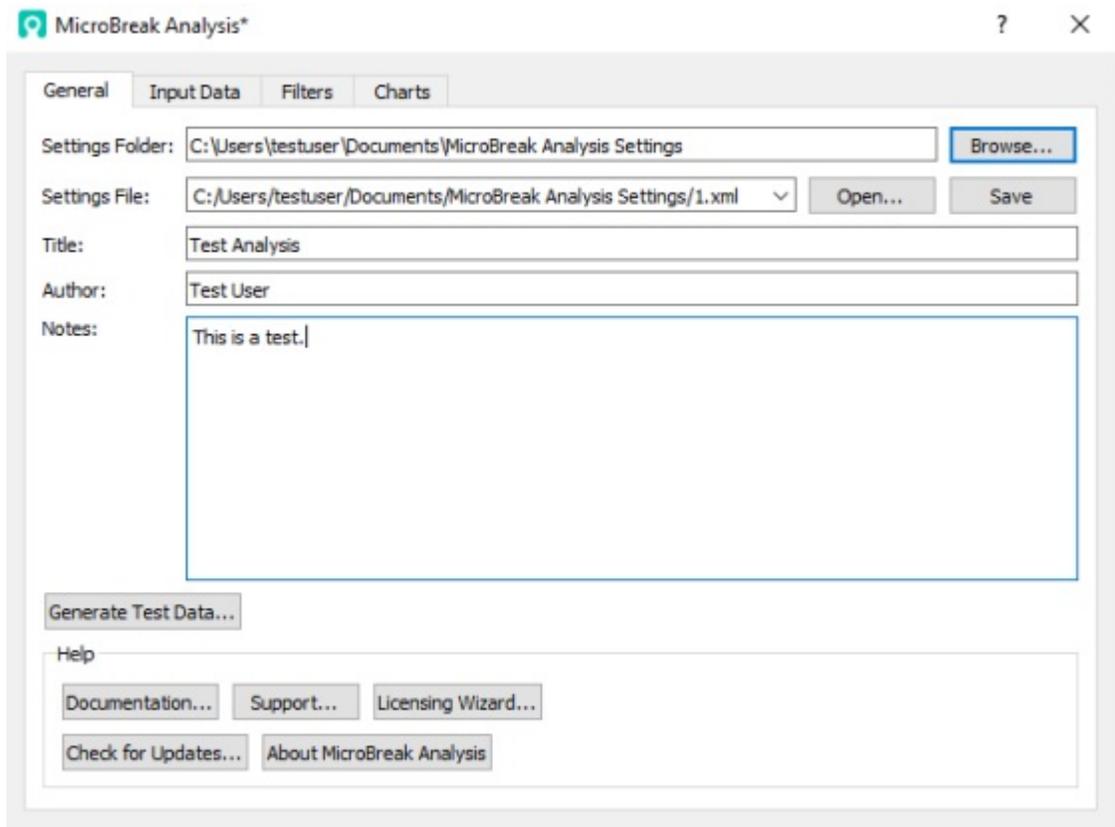


Figure 5: The General Tab

5.1.1. Generate Test Data

Generate Test Data... This button allows you to generate test data for an imaginary company with a number of departments and users for a number of days. When you click this button a dialog window (see fig. 6) will open and you can enter the folder where the data should be stored, the file name template (see subsection 4.1.2.1 ("*File Protocol*")) and the number of dates that should be simulated. When you click **Ok** the data will be generated.

Note that the program requires that you supply the name of an empty but existing folder. The test data will use about 8 MB of disk space.

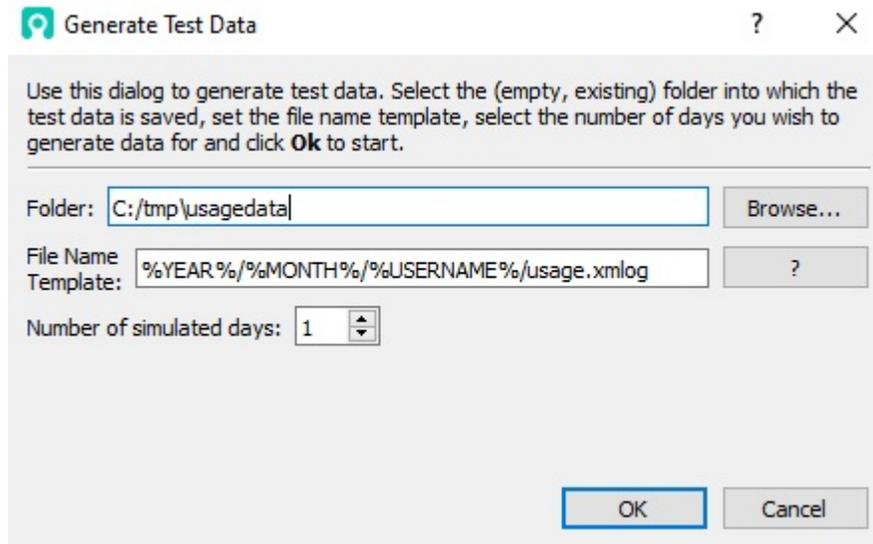


Figure 6: Generate Test Data Dialog

5.1.2. Help

The Help section of the General Tab (see fig. 5) provides the following options:

Documentation... opens the documentation pdf using the default PDF viewer.

Support... opens a window with a number of support options.

Enter License... opens a window where the license can be re-entered.

Check for Updates... check whether there is an update available for MicroBreak.

About MicroBreak Analysis show information about this particular installation of MicroBreak.

5.2. Input Data

Input Data is selected in the Input Data Tab (see fig. 7). The **Data Folder** and all sub folders is scanned to find any log files (ending with "xmllog"). The log files are analysed and the start and end date for the log file is listed. Each file can be individually selected or deselected with the **Selected** checkbox. In addition you can restrict the files by date range in the "**Date Filter**" section.

Note: It is very useful to restrict the files at this stage with the date filter because otherwise the program will read all files into memory prior to generating any charts. For a very large number of log files this could go well beyond the RAM capacity of your computer, moreover it will take a very long time.

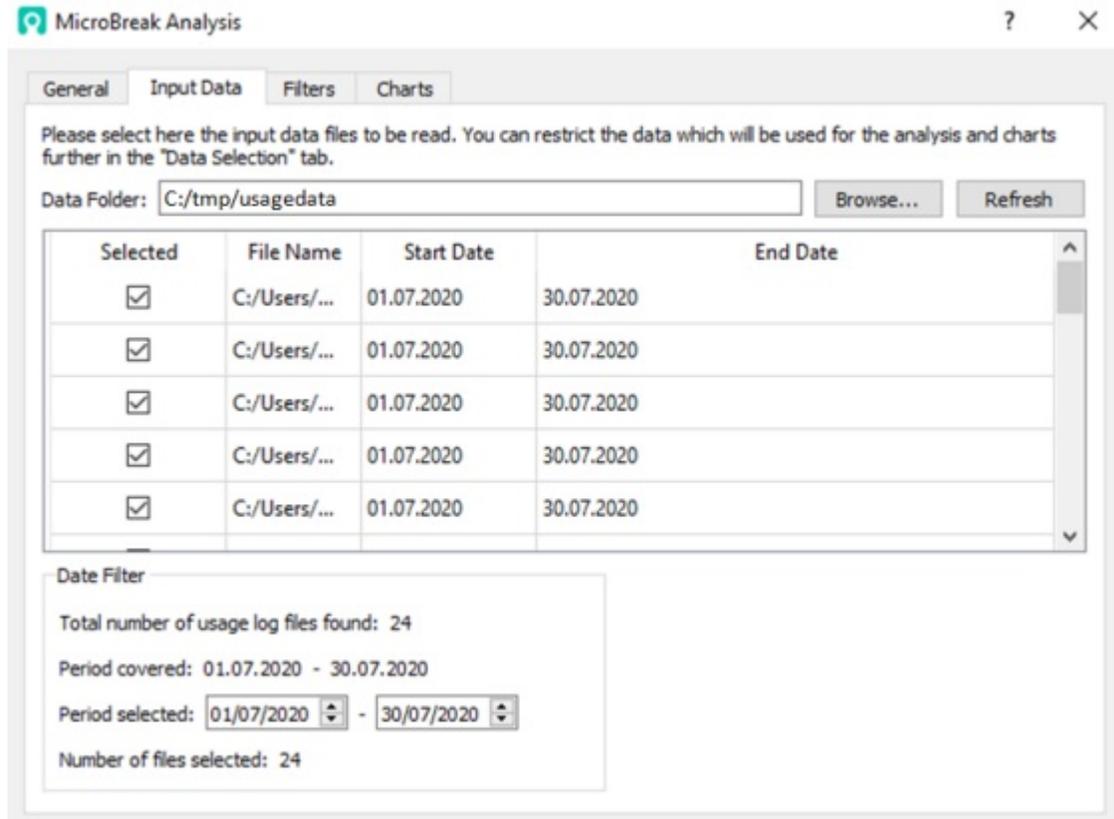


Figure 7: Input Data Selection

5.3. Filters

The MicroBreak Analysis program analyses the data files and generates the filters that are appropriate for data selection and it also generates a number of standard filters. The filters are shown in a list and can be edited in detail and filters can be added here (see fig. 8).

Add... Add a new filter definition.

Edit... Edit an existing filter definition (first highlight the filter you want to edit in the list)

Duplicate Duplicate an existing filter definition (first highlight the filter you want to duplicate)

Delete Delete an existing filter definition (first highlight the filter you want to delete)

Reset... Remove all filter definitions and regenerate the preset filters and analyse the data to generate more filters.

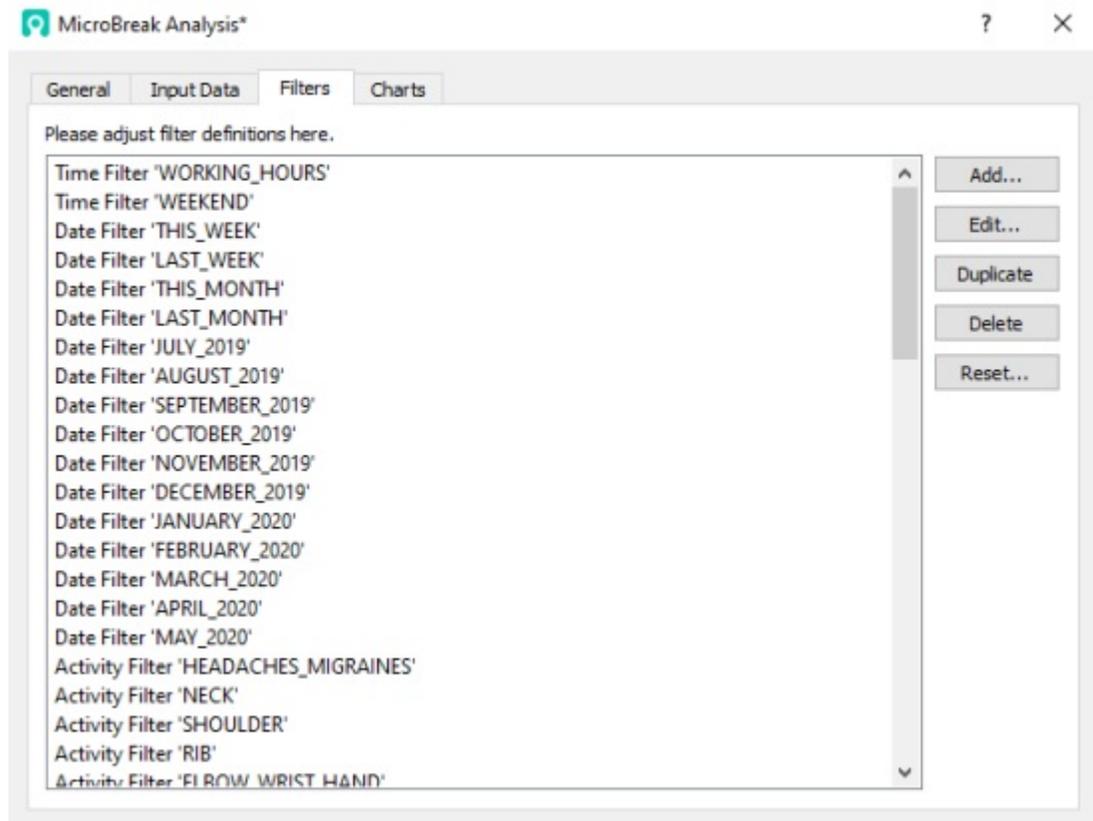


Figure 8: Filters tab

5.3.1. Time Filter

A Time Filter is used to filter usage records by time and weekday (see fig. 9). The program will automatically generate time filters for working hours and the weekend.

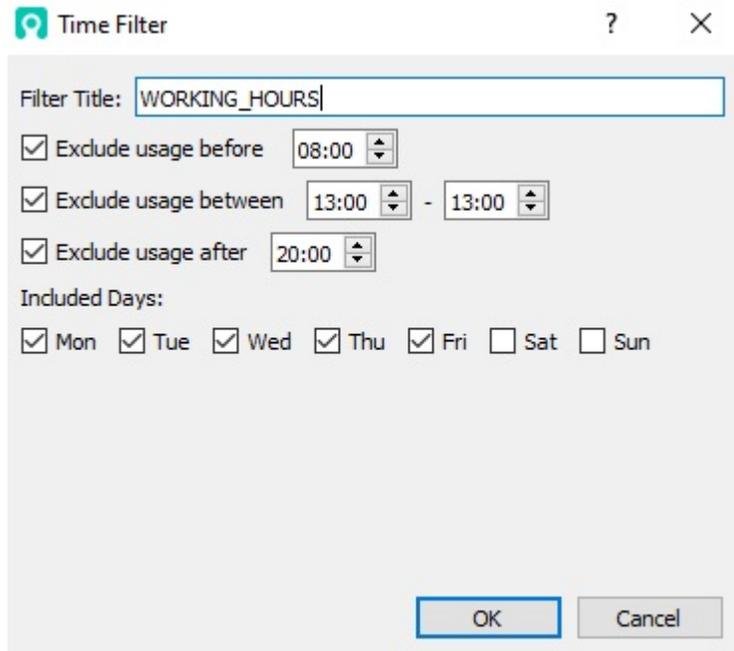


Figure 9: Time Filter Dialog

5.3.2. Date Filter

A Date Filter is used to restrict the usage data by date (see fig. 10). The program will automatically generate date filters for the current week, previous week, this month, previous month and for every month that is present in the data.

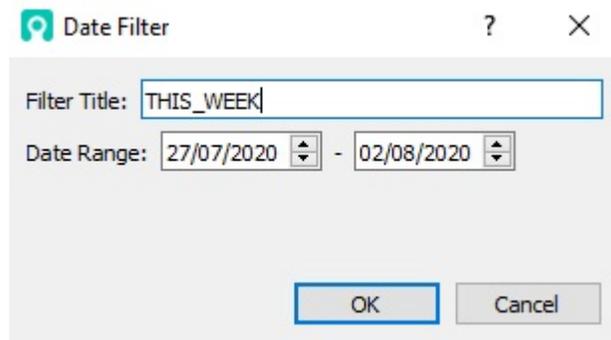


Figure 10: Date Filter Dialog

5.3.3. Activity Filter

An Activity Filter is used to restrict the usage data by activity (see fig. 11). The program will automatically generate activity filters for the various activity areas.

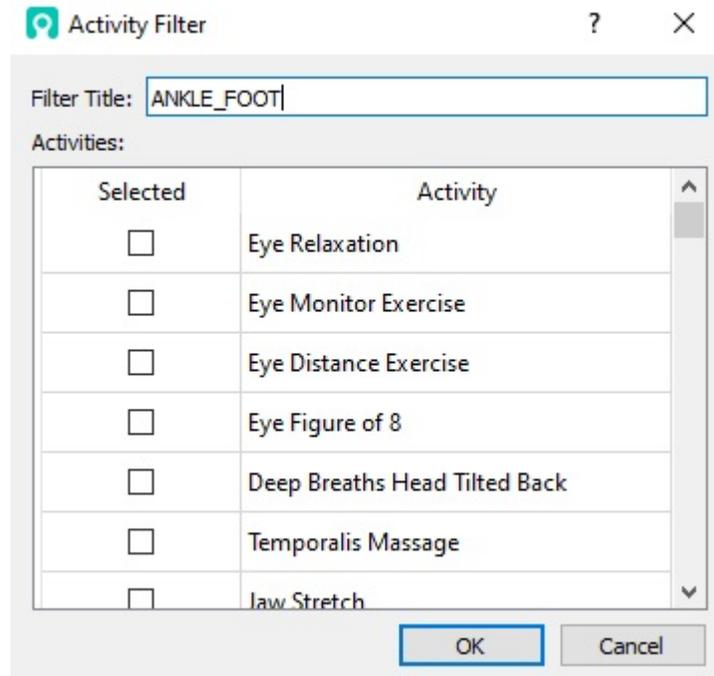


Figure 11: Activity Filter Dialog

5.3.4. User Filter

A User Filter is used to filter the data depending on Company (*fig. 12*), Department (*fig. 13*), Group (*fig. 14*) or User (*fig. 15*). The program will generate user filters for the input data.

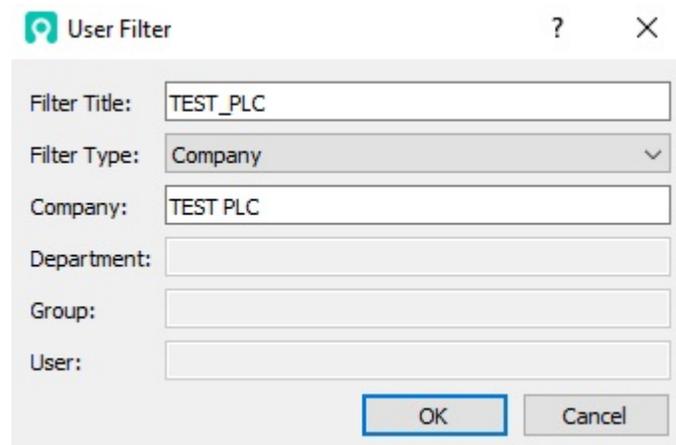


Figure 12: Company Filter Dialog

The dialog box is titled "User Filter" and contains the following fields:

- Filter Title: TEST_PLC_PRODUCTION
- Filter Type: Department
- Company: TEST PLC
- Department: PRODUCTION
- Group: (empty)
- User: (empty)

Buttons: OK, Cancel

Figure 13: Department Filter Dialog

The dialog box is titled "User Filter" and contains the following fields:

- Filter Title: TEST_PLC_PRODUCTION_NORTHWEST
- Filter Type: Group
- Company: TEST PLC
- Department: PRODUCTION
- Group: NORTHWEST
- User: (empty)

Buttons: OK, Cancel

Figure 14: Group Filter Dialog

The dialog box is titled "User Filter" and contains the following fields:

- Filter Title: ST_PLC_PRODUCTION_NORTHWEST_DAVID_WEST
- Filter Type: User
- Company: TEST PLC
- Department: PRODUCTION
- Group: NORTHWEST
- User: DAVID WEST

Buttons: OK, Cancel

Figure 15: User Filter Dialog

5.4. Charts

The list of charts are shown in the Charts Tab (*fig. 16*). The program will automatically generate a few predefined typical charts. The charts list shows the chart title, the filters used for the chart and the number of usage records which have passed all the filters and the chart type.

Add... Add an additional chart. The chart will be displayed and you can change its filters and other parameters.

View/Edit... View or edit the currently selected chart. Equivalent to double-click onto a chart in the chart list.

Duplicate Duplicate the currently selected chart.

Delete Delete the currently selected chart.

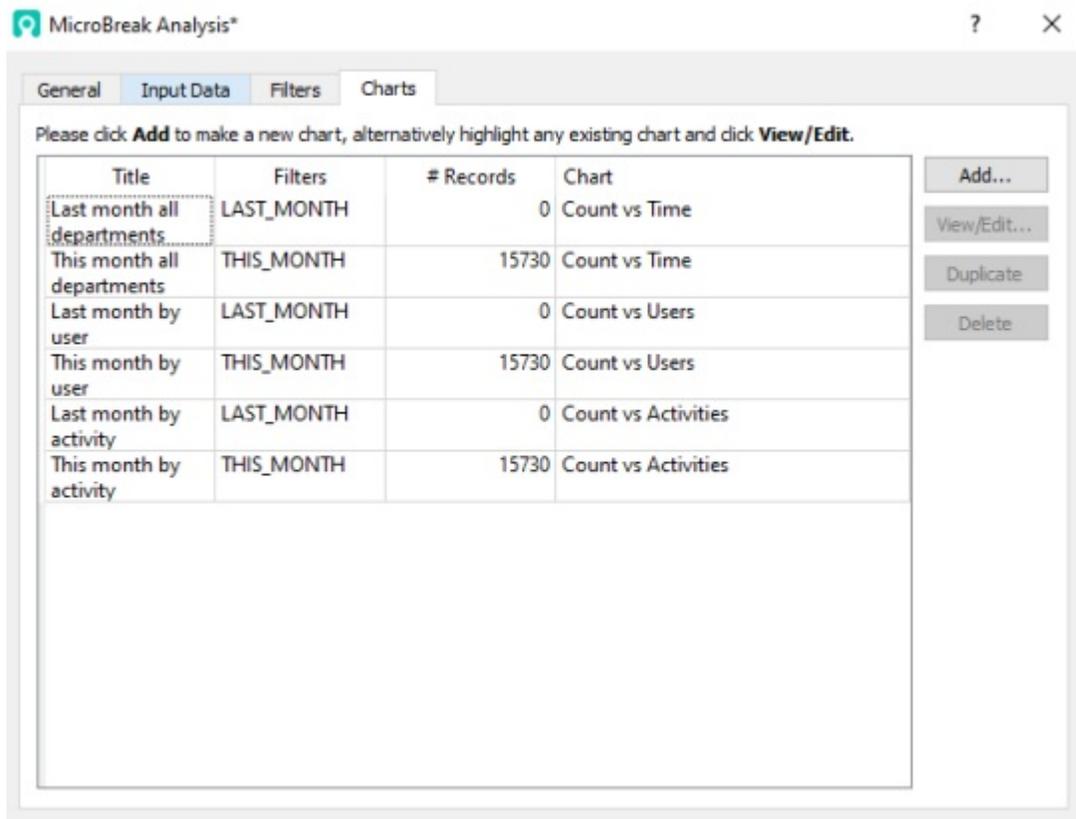


Figure 16: Charts Tab

5.4.1. Chart Dialog

When viewing a chart a separate window opens (see fig. 17). At the top of the window all the settings for the chart can be adjusted and the chart will be immediately updated.

Title This is the title displayed in the chart.

Filters The list of filters used to select the usage data, to change the filters click **Edit...** (see subsection 5.4.5 ("*Filter Selection*"))

Records Selected Number of usage data records selected.

Chart Type Type of chart to be produced (see subsection 5.4.2 ("*Chart Type "Count vs Time"*") , subsection 5.4.3 ("*Chart Type "Count vs Users"*") and subsection 5.4.4 ("*Chart Type "Count vs Activities"*"))

Data Colours Select which type of action to be shown with which colour.

Chart Style Select the style of chart to be shown (Line Chart, Line Chart with Markers, Marker Chart, Bar Chart)

Show Values When ticked the actual count is displayed next to the marker.

Save As... Save the chart as various image file formats or csv file format.

Copy to Clipboard Copy the chart as image into the clipboard so you can paste it into a different program.

Note: You can increase the window size, in particular the width if the horizontal tick marks are difficult to read.

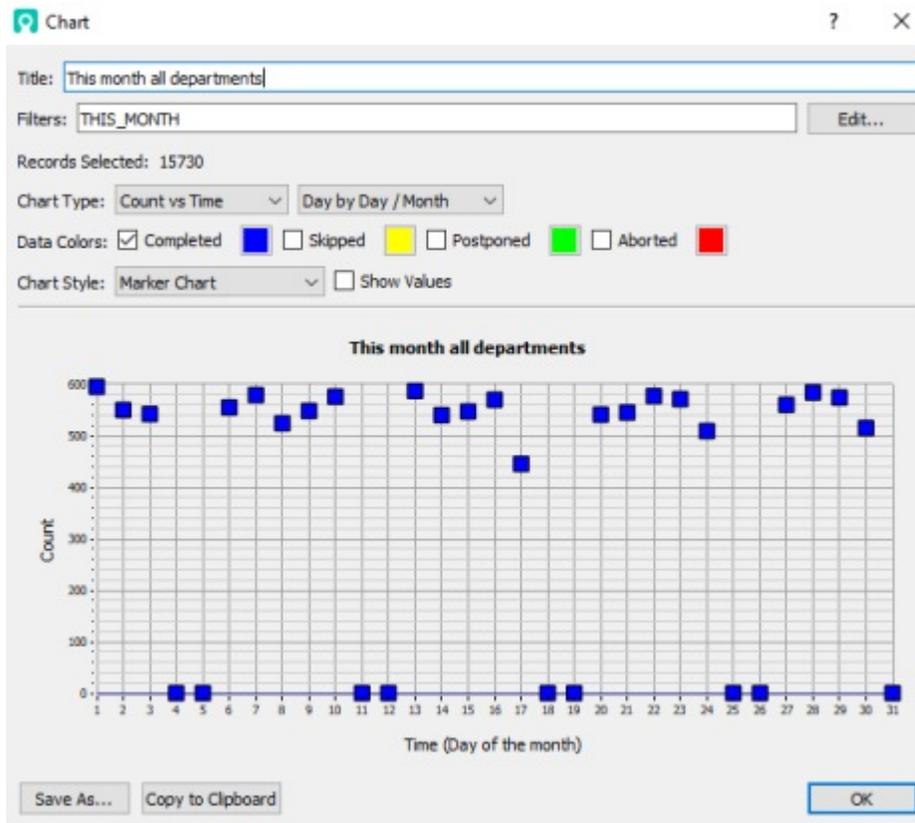


Figure 17: Chart Dialog

5.4.2. Chart Type "Count vs Time"

The chart type "Count vs Time" displays on the horizontal axis time and on the vertical axis number of times a particular action was performed. The following time axes are possible:

- **Hour by Hour:** The horizontal axis shows counts per hour starting from the very earliest entry in the data to the last entry. Each each tick represents a particular hour. So if the date range is for example two days there are 48 ticks. This particular type of horizontal axis should really only be used when the date range is quite limited to avoid having too many ticks.
- **Hour by Hour / Day:** The horizontal axis shows counts per hour of the day. It has 24 ticks and it counts how often a particular action has been performed at what time during the day.
- **Hour by Hour / Week:** The horizontal axis show counts per hour of the week. It will have $24 \times 7 = 168$ ticks with the first tick on Monday 0:00-1:00 and the last tick Sunday 23:00-23:59:59. This chart would normally show the activity patterns over the week with most activity during the normal working hours.
- **Day by Day:** The horizontal axis shows counts per day and starts from the very earliest day in the data to the last day in the data with one tick for each day.

- **Day by Day / Week:** The horizontal axis shows count per day of the week, from Monday to Sunday.
- **Day by Day / Month:** The horizontal axis shows count per day of the month with the first day tick being the first day of the month. Please note that the activity on the 31st is only be filled if there are 31 days in the month.
- **Week by Week:** The horizontal axis shows counts per week number starting from the first week in the data to the last week in the data.
- **Month by Month:** The horizontal axis shows the counts per month starting from the first month in the data to the last month in the data.
- **Month by Month / Year:** The horizontal axis shows the counts per month of the year.

5.4.3. Chart Type "Count vs Users"

The chart type "Count vs Users" shows on the horizontal axis the various users in the data and on the vertical axis the number of times a particular action was performed. The data in the horizontal axis can be shown by user, group, department and company.

5.4.4. Chart Type "Count vs Activities"

The chart type "Count vs Activities" shows on the horizontal axis the various MicroBreak activity types and on the vertical axis the number of times a particular action was performed.

5.4.5. Filter Selection

Filters are edited in a separate window that opens when the "Edit..." button is clicked in the chart dialog window (see fig. 18). The filters are applied as logical AND, that is all enabled filters have to be fulfilled to be valid. This means that if "THIS_WEEK" and "LAST_WEEK" are both selected, no usage records will be selected.

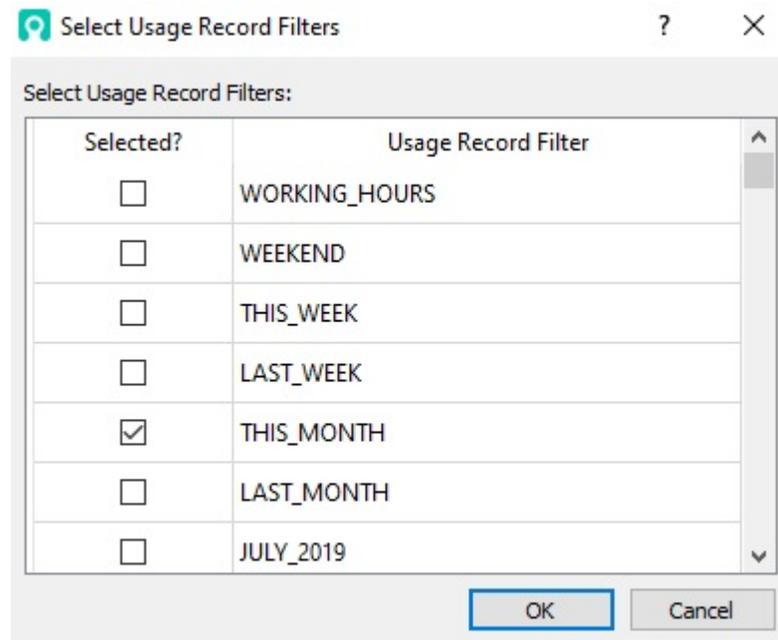


Figure 18: Usage Record Filter Selection

6. Program Installation and Licensing

The MicroBreak Analysis program is installed with the same installer as the MicroBreak program as a separate "feature" in the installer. Please refer to the MicroBreak program documentation for a description of installation and Licensing. Note that **MicroBreak Analysis** requires a "MicroBreak Enterprise" license to run. If you do not have such a license the program will show an error message and quit.

7. How To...

7.1. Generate and View Test Data

MicroBreak Analysis can generate test data that you can use to experiment with the program.

1. To generate test data, follow the instructions in subsection 5.1.1 (*"Generate Test Data"*).
2. Go to the "Input Data" tab (see section 5.2 (*"Input Data"*)) and ensure the input data folder points to the folder where you have generated the input data. This should then show a number of files in the input files list.
3. Go to the "Charts" tab (see section 5.4 (*"Charts"*)) and double-click on the first chart. Then experiment with the various settings.

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