

FDMON USER GUIDE

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First Steps

The application is distributed as an MSI format. After installing and launching FDMon, the screen you will land on is the main view as shown below.

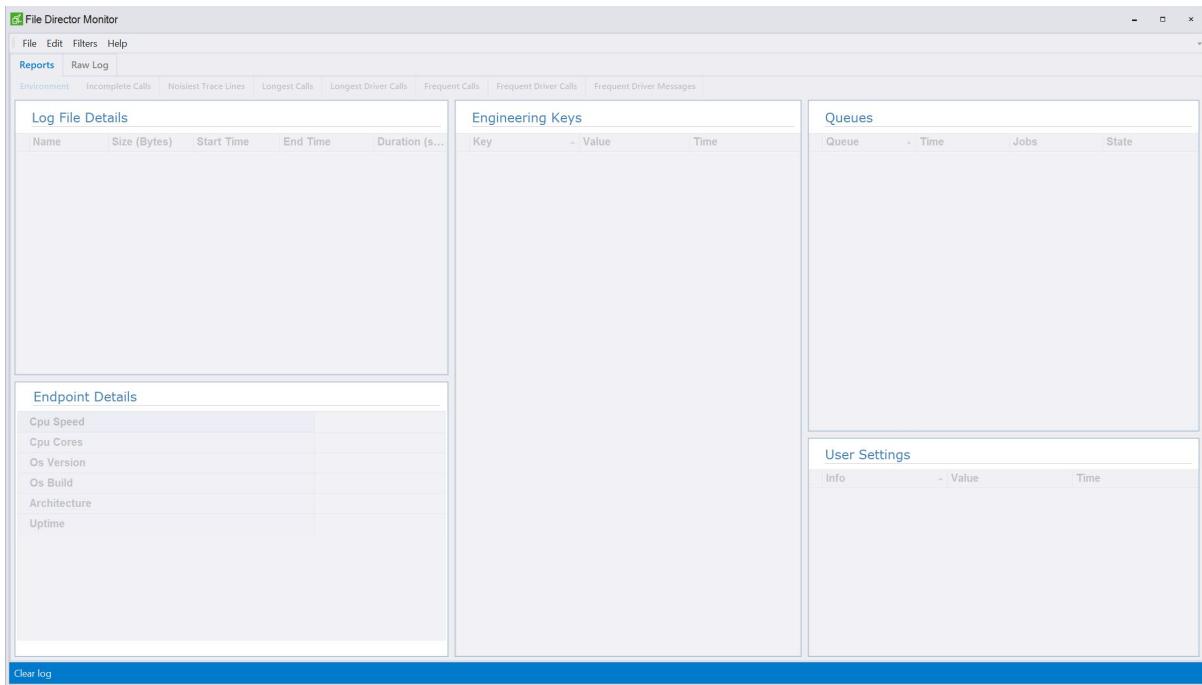
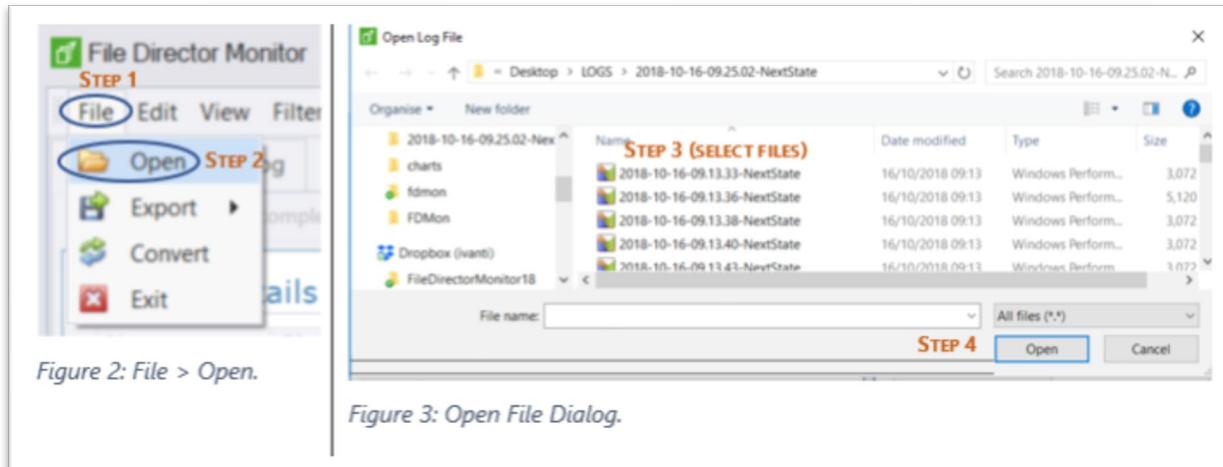


Figure 1: FDMon landing page

The main view contains two master tabs, "Reports" and "Raw Log" tab. Both tabs are disabled by default until you open a log file and they have data to present. When a log has been opened, the master tabs will become enabled, and you will now be able to navigate to both.

Opening Files

There are two approaches to opening a log file. The first approach is the common File, Open and the second approach is a Drag and Drop action. For the first approach, click the "file" button at the top left of the window and then scroll down and hit the "open" button. An open file dialog will open, where you will be prompted to select one or multiple files for processing. The dialog window includes two file selection filters; ".etl" and "all files".



For the Drag and drop method, select one or more files from a folder and drop them in any part of the FDMon window and the files will be processed.

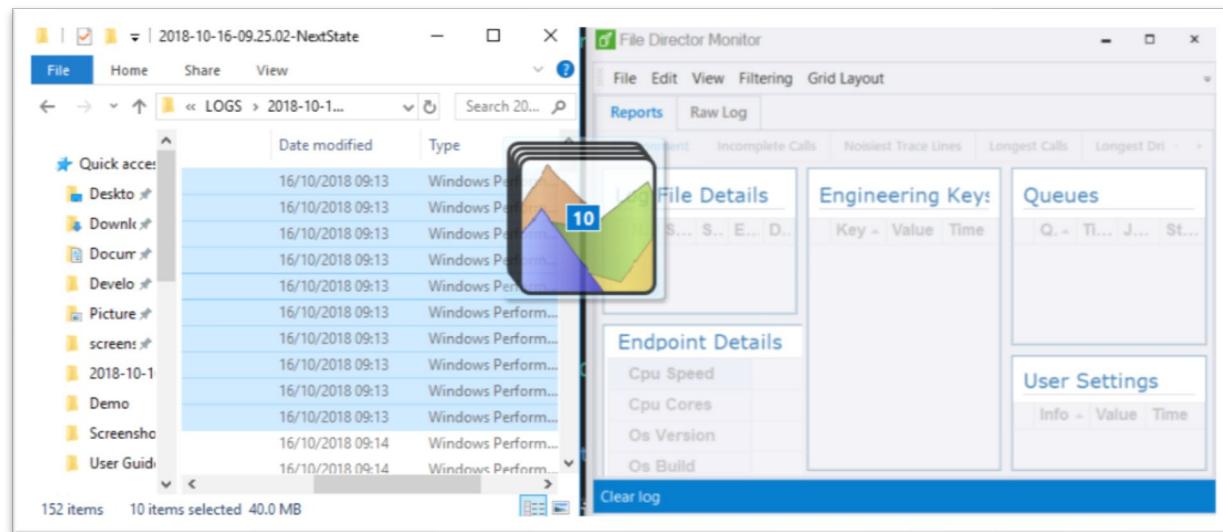


Figure 4: Drag and Drop

The sorting of the files will be handled by the application; therefore, you do not need to consider in what order you drop the files into FDMon. When a file has been opened, the "Reports" and "Raw Log" tabs will be enabled allowing you to start troubleshooting and viewing the reports.

Reports

The first tab a user will land on after opening a log is the “Environment” report tab. This tab includes a summary of File Director settings that have been applied to the endpoint where the log was captured on and it also includes information specific to the endpoint.

The “Reports” tab is a parent tab to multiple reporting tabs. The reporting tab that is shown first is the environment report tab, the rest of the reporting tabs are placed on its right. From here you can navigate to the other reporting tabs or to the Raw Log master tab.

The screenshot shows the 'File Director Monitor' application window. The 'Reports' tab is selected, displaying the 'Environment' report. The interface is divided into several sections:

- Log File Details:** A table showing incomplete calls with columns: Name, Size (Bytes), Start Time, End Time, and Duration (s.). Examples include C:\Users\joh... (5242880 bytes, 08/04/2019 08:00:02.9...), C:\Users\joh... (17825792 bytes, 08/04/2019 08:00:56.9...), and C:\Users\joh... (5242880 bytes, 08/04/2019 08:00:02.5...).
- Engineering Keys:** A table showing key-value pairs with columns: Key, Value, and Time. Examples include AdditionalDebugFl... (16, 08:53:34.6734610), AutoErrorLogging (1, 08:53:34.6734716), and AutoErrorLoggingS... (158999, 08:53:34.6734775).
- Queues:** A table showing queue statistics with columns: Queue, Time, Jobs, and State. Examples include ASYNC_DELT... (08:53:34.6735..., 0, not running), AUDIT_JOB (08:53:34.6735..., 1, running), SYNC_JOB (08:53:34.6735..., 20, running), and UPDATE_CAC... (08:53:34.6735..., 20, running).
- Endpoint Details:** A table showing system details with columns: Cpu Speed, Cpu Cores, Os Version, Os Build, Architecture, and Uptime. Examples include Cpu Speed (2297), Cpu Cores (4), Os Version (10.0), Os Build (10.0.16299), Architecture (x64), and Uptime (79.04 seconds).
- User Settings:** A table showing user configuration with columns: Info, Value, and Time. Examples include Base folder (C:\Users\autoslave4\..., 08:53:34.6735467), DNS Name (AUTOMATION.LOC..., 08:53:34.6735230), and DNS Short Name (AUTOMATION\autos..., 08:53:34.6735258).

A 'Clear log' button is located at the bottom left of the report area.

Figure 5: Environment report.

To view the rest of the reports, you can click on the tab headers to the right of the environment report.



Figure 6: Reporting tab headers.

Report structure

Each reporting page consists of a grid that displays information related to the type of the report and a chart that helps you visualise the data displayed by the grid.

Sorting

To change the sorting of the report grid, click on the column header that you would like to sort by, and the grid will be sorted by that column. To toggle between ascending and descending click again on the same column header.



Figure 7: Sorted ascending



Figure 8: Sorted descending

Searching

Searching within report grids should not be necessary since the grids will display trends that you are interested in, therefore, the search panel is hidden by default. If you need to search for something more specific, you can enable the search panel by doing a right click on any of the column headers and then pressing Ctrl+F on your keyboard.

Environment	Incomplete Calls	Noisiest Trace Lines	Longest Calls	Longest Driver Calls	Frequent Calls
<input type="text" value="Enter text to search..."/> <input type="button" value="Find"/> <input type="button" value="Clear"/>					
Function	Percentage	Times Called			
CDirectoryObject::UpdateCache	1.38	8037			
CDriverHandler::AccessCouldCancel...	1.38	8031			

Figure 9: Reports search bar.

Layout

The grid and chart parts of the report pages are separated with a splitter control. This splitter control is interactive, and you can use it to hide either part of a report. If you would like to enlarge the chart part of a report then drag the splitter to the left of the screen and if you wish to enlarge the chart part of the grid, then drag the splitter to the right of the screen.

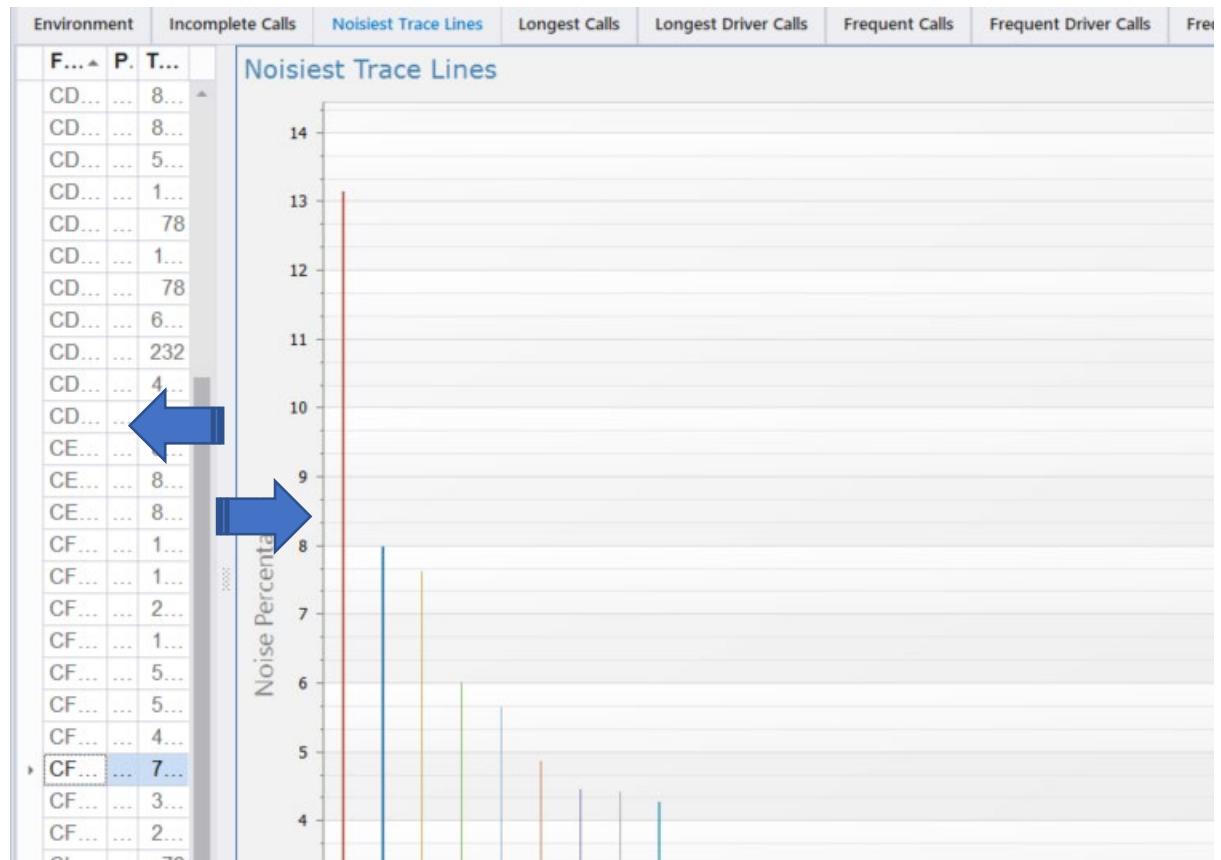


Figure 10: Splitter container.

Charts

Most of the charts used for the FDMon reports are multicolored bar charts and stacked bar charts. The series of the charts are color-coded and displayed in the legend of the charts. The legend of each chart includes the distinct series that are included in the bar chart with a checkbox on the right of each series. To remove series (i.e. a specific function) from the chart you can do that by deselecting the checkbox next to that function name. This will remove the bar for this function from the chart, this will also cause the chart to recalculate the axis values.

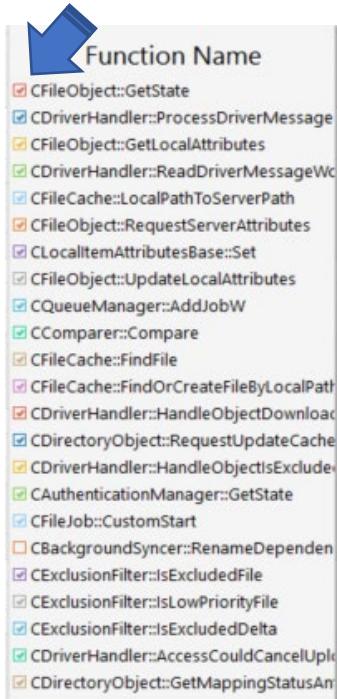


Figure 11: Chart Legend fully checked.

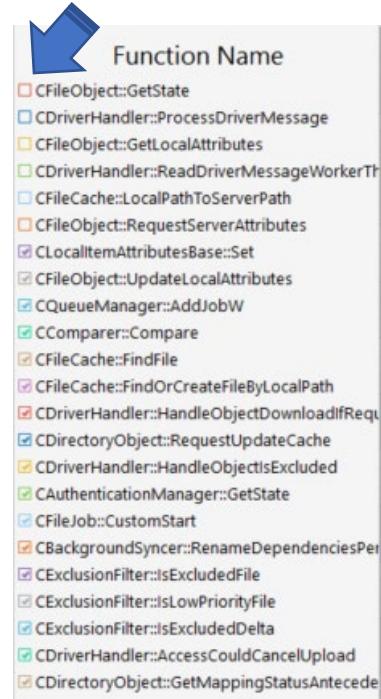
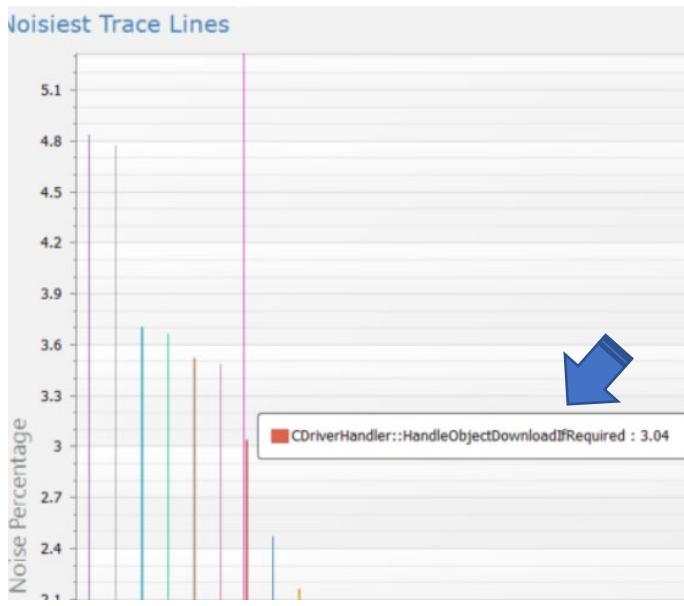


Figure 12: Chart Legend unchecked.

By hovering over the bar charts, a tooltip will appear with information about the bar that the mouse pointer is closest to. This tooltip information varies slightly between reports depending on what the report is.



Example: The tooltip here is displaying a function name followed by the noise percentage of this function in the current logging session.

Figure 13: Bar chart tooltip.

Raw Log View

Events

For further analysis of the log after viewing the reports, navigate to the "Raw Log" tab page. Each row of the grid is an FD client event. There are 12 visible columns, and two hidden columns used only in special circumstances. All the columns put together compose a full event. These columns are:

- **Level:** Severity level of the event
- **Sqn:** Sequence number of the logline
- **Thread Id**
- **Time Stamp**
- **Opcode Name**
- **Detail:** Detail string of the logline
- **Function:** Caller function name
- **Process Name**
- **Ms From First Event**
- **Ms From Previous Event**
- **Process Id**
- **Session Id**
- **File:** File in source code (Hidden by default)
- **Line:** Line within file in source code (Hidden by default)

Level	Sqn.	Thread Id	Time Stamp	Opcode Name	Detail	Function	Process Na...	Ms From First Event	Ms From Previous Event	Process Id	Session Id
-------	------	-----------	------------	-------------	--------	----------	---------------	---------------------	------------------------	------------	------------

Figure 14: Column Headers

Toolbar

The toolbar is positioned inside the space under the "Raw Log" tab header and it includes buttons linked to key functionality for troubleshooting. The actions you can trigger from these buttons are displayed in **figure 15** below.

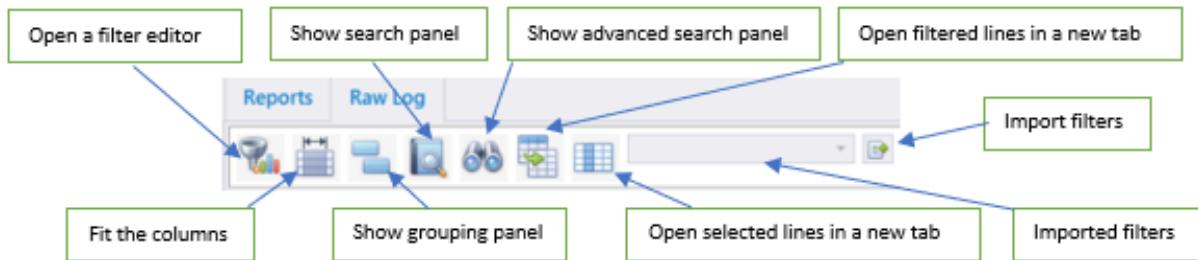


Figure 15: Toolbar buttons

Note: By hovering over the toolbar buttons, a tooltip will appear describing each button's functionality.

Filtering

To invoke the Filter Editor, right-click any column header and select "Filter Editor" in the context menu or click the "Filter Editor" button in the toolbar.

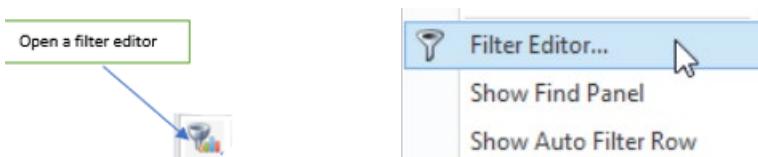


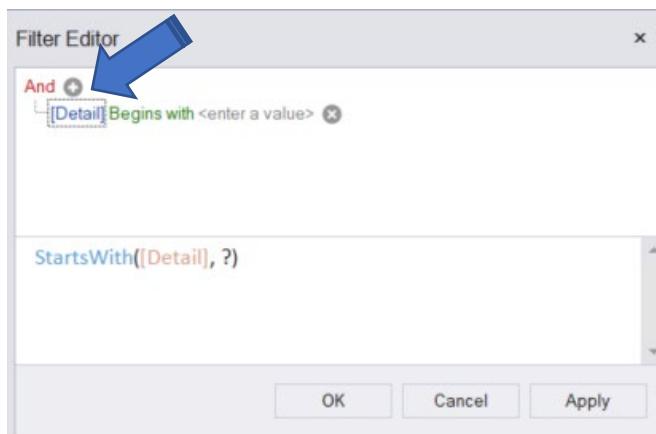
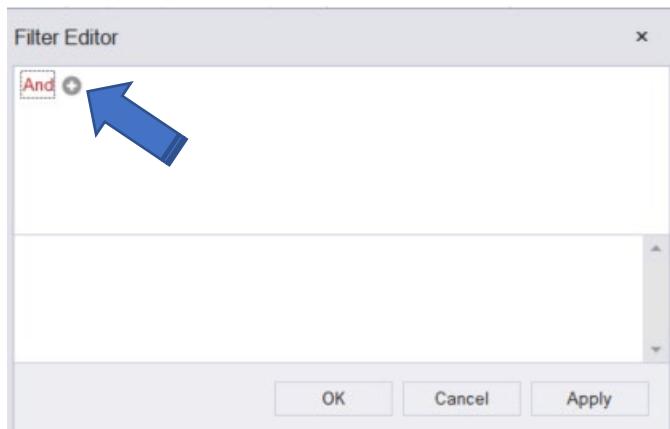
Figure 16: Invoking a filter editor

By default, the Filter Editor displays filter criteria as a tree where individual nodes represent simple filter conditions. The root node is the logical operator combining all conditions. Any filter condition consists of three parts: a column name, criteria operator and operand value. If the grid's data is not filtered, the editor contains one incomplete filter condition for the clicked column or no criteria if the editor has been invoked by using the toolbar button.

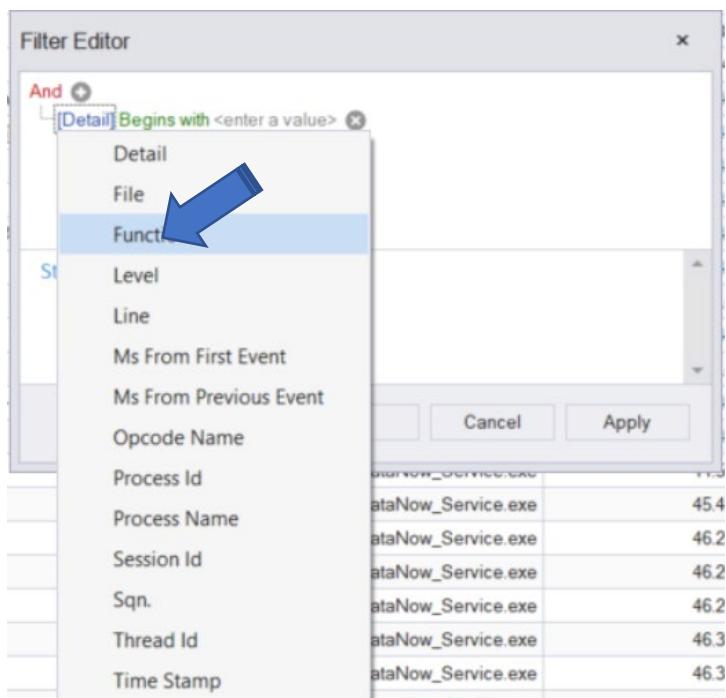
EXAMPLE:

In a scenario that you are looking to find loglines related to permissions of a map point or a file and you are specifically looking for the ones that have read-only permissions follow the steps below to apply a suitable filter.

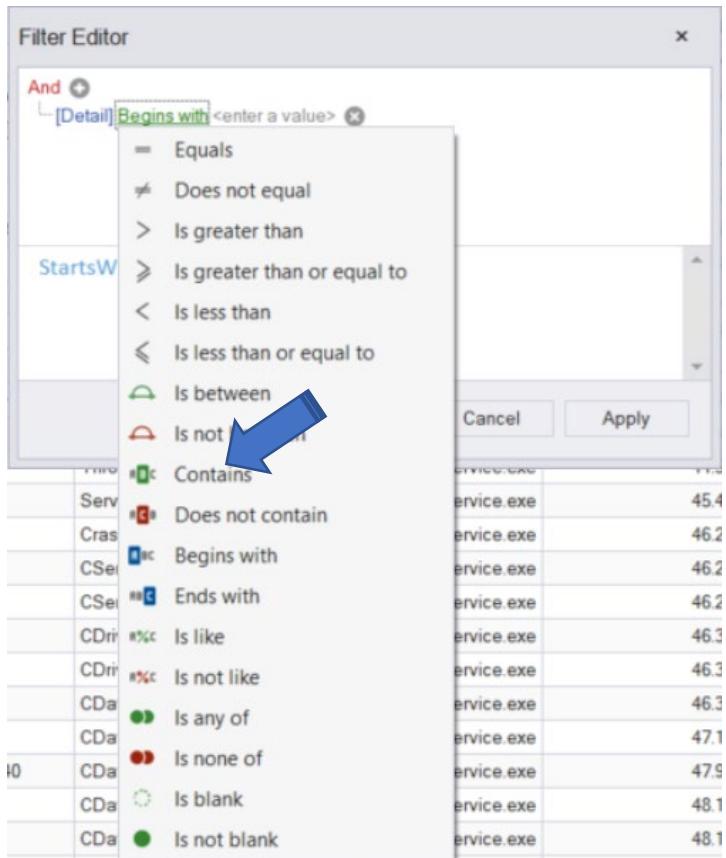
Step 1: Open the filter editor and add a condition node by clicking the plus sign next to the and operand.



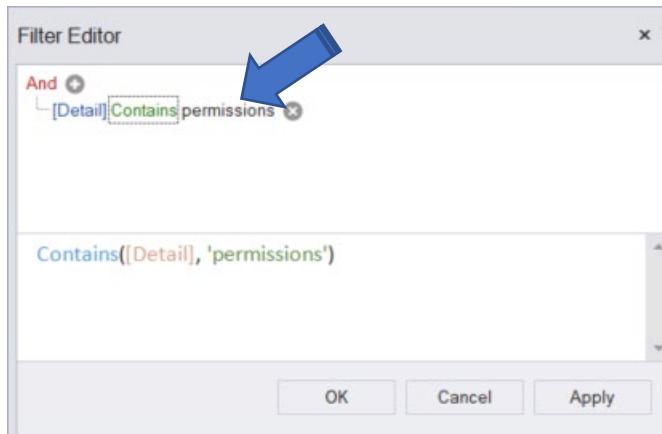
Step 2: Click the columns box and select the column you wish to apply the filter to.



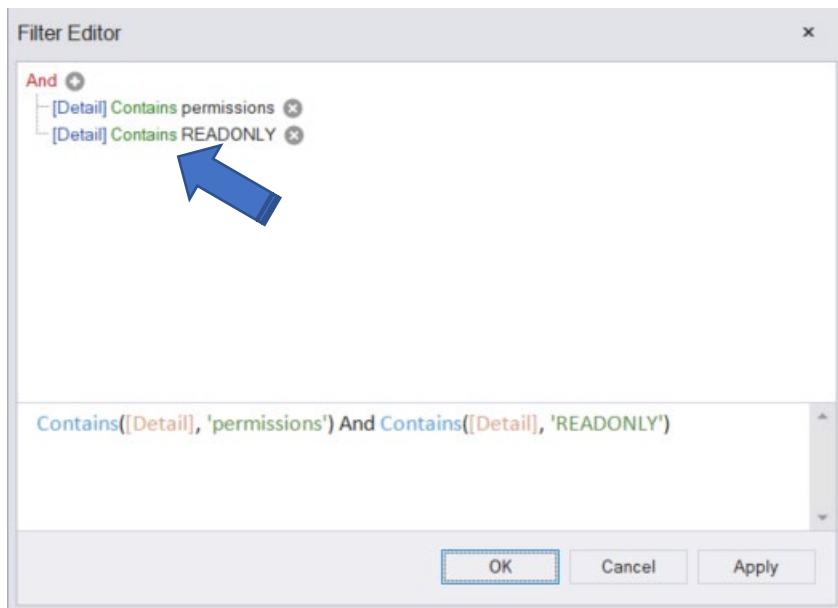
Step 3: Click the condition box to change the condition for your filter.



Step 4: Click the value box to change the filtering parameter.



If your filter condition is complete Click OK to close the editor and apply changes. As a result, the grid displays only log lines where their detail string contains the word "permissions". Click OK to close the editor and apply changes. To build a compound filter, repeat the process by adding more filter nodes and setting conditions.

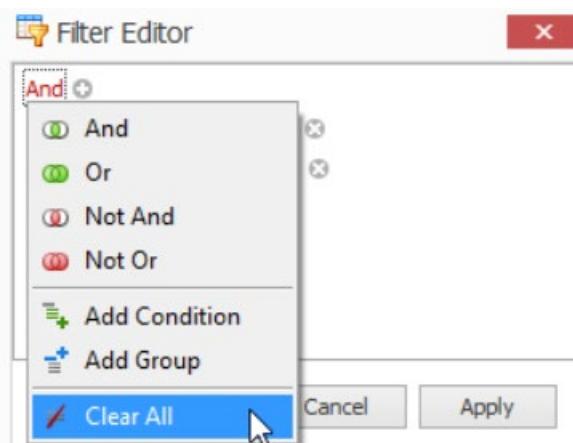


The result of the compound filter applied in the example above will be all log lines where their detail string contains the word "permissions" and contains the word "READONLY".

Lev_	Sqn.	Thread Id	Time Stamp	Opcode Name	Detail
L4	2077	2980	15:46:04.499	Info	"permissions", "READONLY".
L4	2872	2980	15:46:04.537	Info	"permissions", "READONLY".
L4	9411	3292	15:46:04.727	Info	"permissions", "READONLY".
L4	9429	3292	15:46:04.727	Info	"permissions", "READONLY".
L4	60168	3076	15:46:47.455	Info	"permissions", "READONLY".
L4	60963	3076	15:46:47.494	Info	"permissions", "READONLY".
L4	73090	3408	15:46:47.772	Info	"permissions", "READONLY".
L4	73101	3408	15:46:47.772	Info	"permissions", "READONLY".
L4	78533	2836	15:47:52.305	Info	"permissions", "READONLY".
L4	84204	904	15:47:52.439	Info	"permissions", "READONLY".
L4	84215	904	15:47:52.439	Info	"permissions", "READONLY".

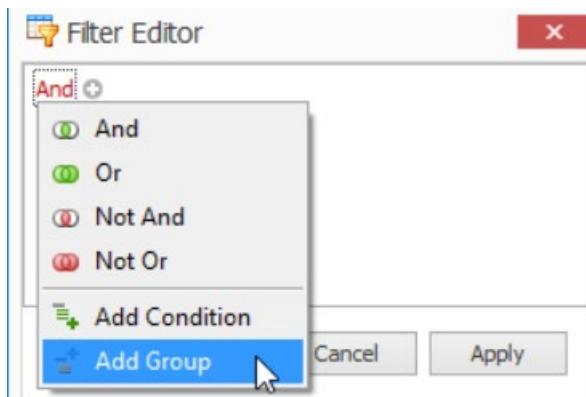
DELETING FILTER CONDITIONS

Delete all filter conditions by clicking their buttons or by selecting Clear All in the logical operator's menu.

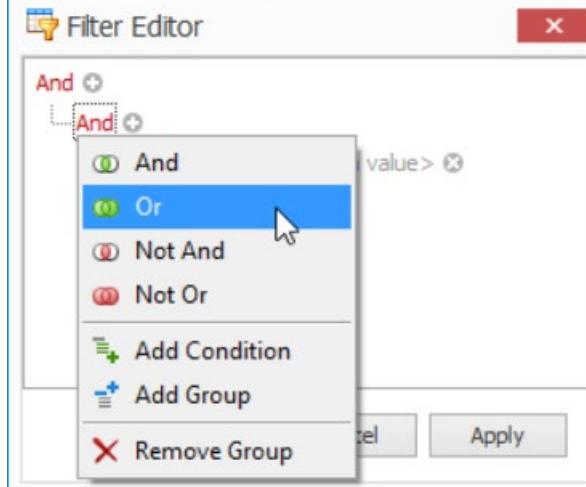


EXPANDED CONSTRUCTING COMPLEX FILTER CRITERIA

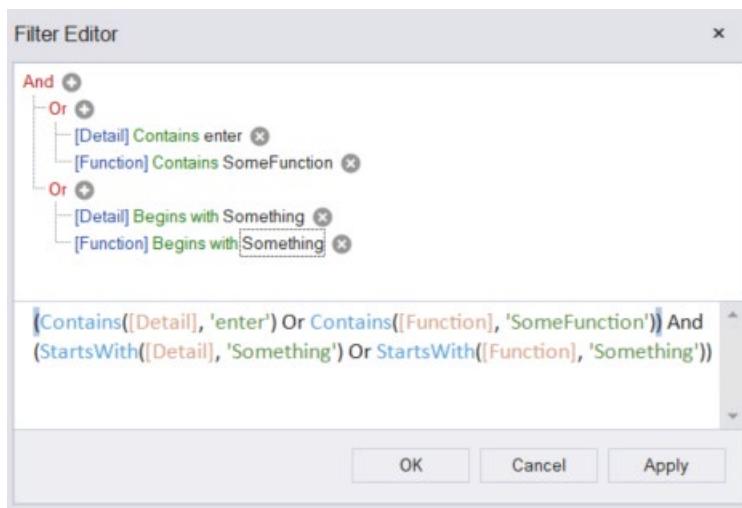
To create a more complex filter criterion, click the root logical operator and select Add Group.



Change the created logical operator to OR.



Create two new conditions within this group. These conditions will select log lines where their detail and function contain a specific value or where their detail and function begin with a specific value.



Click OK to filter data using the created criterion. You'll see the entire filter condition displayed in the filter panel. The filter can be cleared completely by clicking the clear button in the filter panel.



Figure 17: Filter panel

OPENING FILTERED CONTENT IN A NEW TAB

To open the filtered results or the selected loglines in a new tab for further processing, click the corresponding buttons in the toolbar.

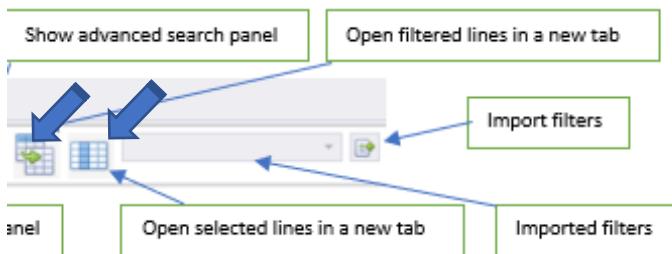


Figure 18: Invoking filter and selection tabs.

This will open the filtered results that you are interested in a separate tab so you can now clear the filter from the main grid and filter with different criteria. The new tab headers will be named "filter" if the content is filtered results and "selection" if the content is multiple selections.

File Edit View Filtering Grid Layout						
Reports	Raw Log	Selection 1				
	□	Le...	Sqn.	▲ Thread Id	Time Stamp	Opcode N
0	■	L4	3	1688	15:46:04:110	Entry
1	□	L4	4	1688	15:46:04:110	Info
2	□	L4	5	1688	15:46:04:110	Entry

Figure 19: Selection tab header.

File Edit View Filtering Grid Layout						
Reports	Raw Log	Filter 1				
	□	Le...	Sqn.	▲ Thread Id	Time Stamp	Opcode N
0	■	L4	344	560	15:46:04:202	Ent
1	□	L4	345	560	15:46:04:202	Info
2	□	L4	350	536	15:46:04:202	Ent

Figure 20: Filter tab header.

SHARING FILTERS

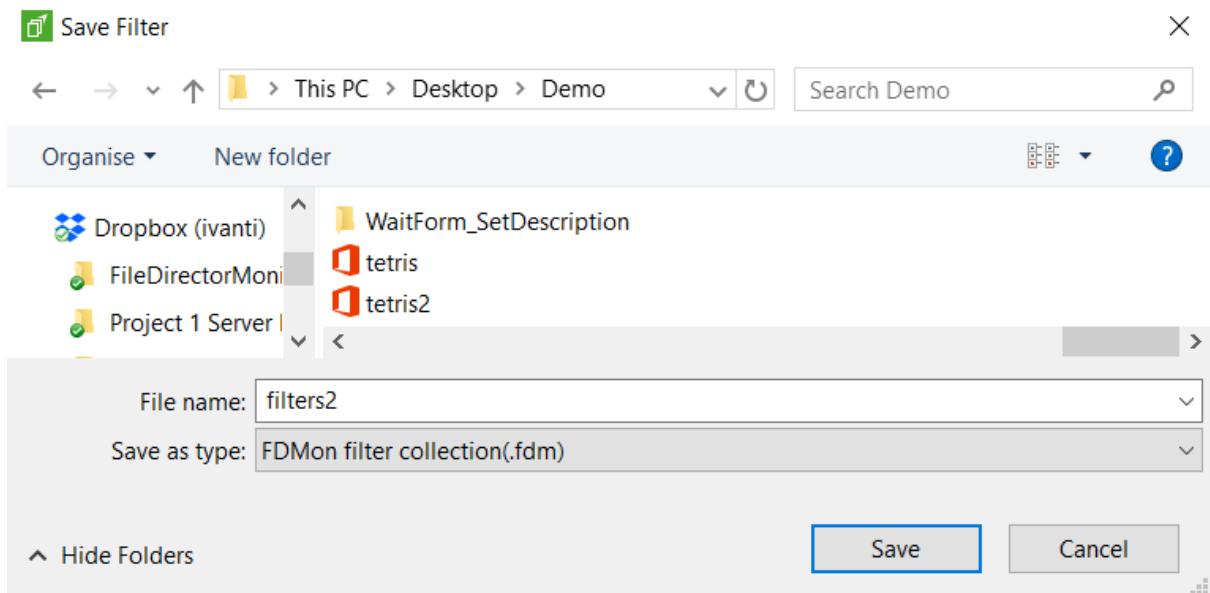
FDMon gives you the ability to export filters into a text file. This can be used in many different scenarios such as: send a filter to another member of the team with the accompanied log or attach a filter and log file bundle to a PBI.

To export a filter, after you have built one with the filter editor, you can either click the "Export" button on the toolbar or the "Save Current filter" button in the bar menu dropdown. Both buttons will launch a dialog that will give you options to where to save the filter and what name to give it.



Figure 20: Export filter button.

By clicking the button shown in figure 20 above the export dialog will open.



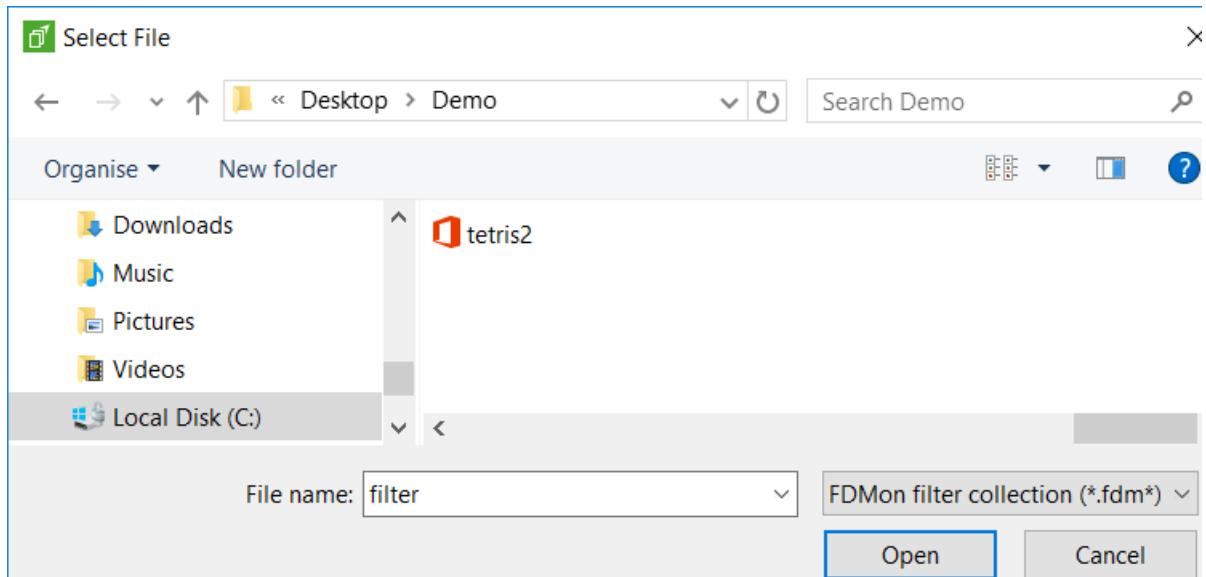
When the dialog is shown, select where the filter will be saved and give a name to the file. The filters will be exported as a .fdm file, this is an FDMon custom filter file type based on a text file.

To import a filter collection from a file, first click the import filter button in the toolbar.



Figure 21: Import filter button.

An import dialog will open.



Select a filter collection and click open.

When the filters have been opened, they will be loaded into a dropdown combo box that is located in the toolbar area.



To apply a filter from the collection, open the dropdown and click on one of the filters.

Searching

To search for a keyword within the raw log grid, you can enable the search panel by doing a right click on any of the column headers and then pressing **ctrl+F** on your keyboard, or by clicking the search button located in the toolbar area.



When the search panel is open, enter the word in the search box and click "find", the grid will search for that text in all columns and filter the view.

SEARCH SYNTAX

If you type in two words, such as "http response", the grid considers them as individual conditions and selects records that contain either "http" or "response".

	□	Le...	Sqn.	▲ Thread Id	Time Stamp	Opcode Name	Detail
0	□	L4	15	568	10:35:01:751	Info	Key [DataNowServer] set to [https://dn-auto-02.dnqauk.com]
1	□	L4	29	568	10:35:01:751	Info	Server: [https://dn-auto-02.dnqauk.com]

To find records that contain both, type "+" before the second word. Similarly, you can type "-" to exclude records that contain a specific word.

http +response							
		Le...	Sqn.	Thread Id	Time Stamp	Opcode Name	Detail
▶ 227	<input checked="" type="checkbox"/>	L1	53436	3232	10:35:21:945	Error	GetHTTPStatus failed, response
228	<input type="checkbox"/>	L4	53437	3232	10:35:21:945	Exit	Exited
229	<input type="checkbox"/>	L4	72804	1472	10:35:34:765	Entry	Entered
230	<input type="checkbox"/>	L4	72813	1472	10:35:34:825	Entry	Entered
231	<input type="checkbox"/>	L4	72814	1472	10:35:34:825	Info	No additional data available.
232	<input type="checkbox"/>	L4	72815	1472	10:35:34:825	Exit	Exited
233	<input type="checkbox"/>	L4	72816	1472	10:35:34:826	Info	HTTP Response (1716 bytes):

You can combine different operators. Use "+" and "-" to select records that contain both "http" and "response", excluding records that contain "folders".

http +response -folders							
		Le...	Sqn.	Thread Id	Time Stamp	Opcode Name	Detail
▶ 227	<input checked="" type="checkbox"/>	L1	53436	3232	10:35:21:945	Error	GetHTTPStat
228	<input type="checkbox"/>	L4	53437	3232	10:35:21:945	Exit	Exited
229	<input type="checkbox"/>	L4	72804	1472	10:35:34:765	Entry	Entered
230	<input type="checkbox"/>	L4	72813	1472	10:35:34:825	Entry	Entered

To search for a string that contains a space character, you need to enclose this string in quotation marks.

"http response"							
		Le...	Sqn.	Thread Id	Time Stamp	Opcode Name	Detail
▶ 0	<input checked="" type="checkbox"/>	L4	8575	3352	10:35:12:374	Info	HTTP Response (1614 bytes):
1	<input type="checkbox"/>	L4	39779	3924	10:35:19:746	Info	HTTP Response (1614 bytes):
2	<input type="checkbox"/>	L4	40335	2672	10:35:19:760	Info	HTTP Response (247 bytes):
3	<input type="checkbox"/>	L4	40571	3924	10:35:19:771	Info	HTTP Response (302 bytes):
4	<input type="checkbox"/>	L4	72816	1472	10:35:34:826	Info	HTTP Response (1716 bytes):

To search against a specific column, type the first letters of the column's name plus a colon character. Now the grid displays records containing "write" in the detail column.

detwrite

	<input type="checkbox"/>	Le...	Sqn.	Thread Id	Time Stamp	Opcode Name	Detail
0	<input checked="" type="checkbox"/>	L4	1225	556	10:35:02.649	Info	Download \\?\C:\Users\autoslave4\File Director\DF... CDriverHandler::
1	<input type="checkbox"/>	L4	1241	556	10:35:02.649	Info	CancelUploadOnWrite = 0, LocallyLocked = 0
2	<input type="checkbox"/>	L4	1276	556	10:35:02.649	Info	Download \\?\C:\Users\autoslave4\File Director\DF... CDriverHandler::
3	<input type="checkbox"/>	L4	1292	556	10:35:02.649	Info	CancelUploadOnWrite = 0, LocallyLocked = 0
4	<input type="checkbox"/>	L4	1357	556	10:35:02.650	Info	Download \\?\C:\Users\autoslave4\File Director\DF... CDriverHandler::
5	<input type="checkbox"/>	L4	1373	556	10:35:02.651	Info	CancelUploadOnWrite = 0, LocallyLocked = 0
6	<input type="checkbox"/>	L4	1408	556	10:35:02.651	Info	Download \\?\C:\Users\autoslave4\File Director\DF... CDriverHandler::
7	<input type="checkbox"/>	L4	1424	556	10:35:02.651	Info	CancelUploadOnWrite = 0, LocallyLocked = 0

If you add another column-specific condition, the grid joins them using the AND logical operator and displays records that match both. The same happens when you join a column-specific condition with the one applied to all columns: the result will contain records that satisfy both criteria.

detwrite + driver

	<input type="checkbox"/>	Le...	Sqn.	Thread Id	Time Stamp	Opcode Name	Detail	Function
0	<input checked="" type="checkbox"/>	L4	1225	556	10:35:02.649	Info	Download \\?\C:\Users\autoslave4\File Director\DF... CDriverHandler::	CDriverHandler::
1	<input type="checkbox"/>	L4	1241	556	10:35:02.649	Info	CancelUploadOnWrite = 0, LocallyLocked = 0	CDriverHandler::
2	<input type="checkbox"/>	L4	1276	556	10:35:02.649	Info	Download \\?\C:\Users\autoslave4\File Director\DF... CDriverHandler::	CDriverHandler::
3	<input type="checkbox"/>	L4	1292	556	10:35:02.649	Info	CancelUploadOnWrite = 0, LocallyLocked = 0	CDriverHandler::

Click **Clear** to display all records.