FileLocator Pro

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1 Introduction

Welcome to FileLocator Pro

FileLocator Pro is the award winning file searching tool from Mythicsoft.

FileLocator Pro offers a comprehensive set of features to help you locate and understand the information on your computer.

What next? Check out the Getting started section for a quick introduction.

We want to ensure that you have a very positive experience with FileLocator Pro so please contact us with any questions you may have:
support@mythicsoft.com

1.1 Getting started

When you start FileLocator Pro it should look something like this:

The interface is broken up into three main sections:
Criteria view, used to enter search criteria. Depending on the criteria type you will see the Advanced Interface (default), the Basic Interface, or the Index Interface.

File list view, displays files found during search.

Contents view, displays various information about the search and the found files currently selected in File List view.

Note: To change the look and feel of FileLocator Pro use the User Interface Settings.

1.2 Criteria View

FileLocator Pro provides three different interfaces, one for experienced computer users, one for novice computer users (who don't want to deal with some of the more advanced searching features) and one for index based searches. To switch between the interfaces use the criteria type drop down list, highlighted below.

User Interfaces:
- Advanced Interface
- Basic Interface
- Index Interface

Saving

FileLocator Pro supports several options for saving criteria options as described in the Sessions, Workspaces and Search Criteria topic.

1.2.1 Advanced Interface

With Expert User checked the criteria section should look like this:
File name

File name filter, e.g. to search all doc, txt, and xls files using the default expression type DOS Expression you would enter:

`*.doc;*.txt;*.xls`

The equivalent regular expression would be:

`\.(doc|txt|xls)$`

To exclude a group of files prefix the DOS Expression with `NOT`, e.g. `NOT:*.doc;*.txt;*.xls`. To make the file name filter case sensitive click the 'Aa' button (a tick appears when switched ON).

For convenience there are also some preset file type collections in the list: Folders Only, Files Only, Documents, Music, Pictures, and Videos.

When a preset collection is picked the File name field is processed as a Boolean Expression.

Containing text

Specifies the contents to find in the files for a content search. The default expression type is Boolean.
To make the content search case sensitive click the 'Aa' button (a tick appears when switched ON).

Note: If the expression type is set to 'File Hash' then the containing text box can include a comma separated list of hash values or a pointer to a file containing a list of hash values, e.g.
5A9C9B42A16F5E1985B7B0A019114C7A,675C9B42A16F5E1985B7B0A019114C7A

or,
=c:\FileHashTable.txt

The actual algorithms used to calculate the hash, e.g. SHA1, MD5, are specified in the Options tab.

Look In

The Look In field can specify various criteria for the search location including exclusion locations, location filters etc. (for a full description of the advanced features see Look In). Multiple Look In locations are separated by a semi-colon.

Browse for Folders button and Browse for Multiple Folders button provide a convenient mechanism to select the folders to search. Press the 'Browse for multiple folders button' ...

... and the multiple folders dialog will appear. Enter each folder on a separate line.
Locations can be loaded/saved to or from a text file. For more information on FileLocator Pro’s advanced location features please read the Advanced Look In and Persistent Search Filters pages.

**Dates**

Modified Before and After fields are used to search by file modified date. To activate the date criteria either click on the button, i.e. After or Before, or the Calendar icon next to the value. See Date/Time Selection for more information.

The other tabs available with the Advanced Interface are:
- **Options tab**: Options relating to the search, document processing etc
- **Date tab**: Search by last accessed and created date.
- **Attributes tab**: Attributes to filter the search by, e.g. Read-only, Folders etc.
- **Scripting**: User Scripts for customizing search logic.
- **Compressed Files tab**: Compressed/Archive file searching
1.2.1.1 Options tab

Boolean Expression

Boolean expression search type defines whether Boolean expressions are matched on a line by line basis or matched across the whole file.

For example "File AND Pro" on a line by line basis would find only lines with both File and Pro on them and therefore only files where File and Pro both occurred on at least one line. However if matching across the whole file the same expression would find files where both File and Pro occurred anywhere in the file either on the same line or on different lines.

The 'Allow wildcards' option specifies whether or not the Boolean expression phrases will treat the characters * or ? as wildcard characters. For more information see Boolean Expressions.

Email Searching

The Outlook PST and MSG files checkbox switches on .PST and .MSG archive searching. By default only the text of the email body will be searched but if Search attachments is checked email attachments will also be searched.

For more information see Outlook PST Archive Searching and MSG File Searching

Enhanced File Searching

Selecting the 'Office/PDF documents' option instructs FileLocator Pro to perform extra processing of common Office file formats that are registered on the computer. Without this option selected FileLocator Pro will only search through the raw binary data of the file formats (unless the Exclude binary files check box is switched on).

Additional settings for how FileLocator Pro will search document file types is available by clicking the Settings... link which will open the Document Search Settings dialog.

The Exclude binary files option will exclude any files which contain non-printable characters.

Caching

Since the extra processing required to read document file formats can be time time consuming operation FileLocator Pro has a caching feature to temporarily save the processed text in a
database. When the caching feature is switched on FileLocator Pro first checks the cache database for the processed text of the file before trying to process the actual file itself resulting in much faster searches. The caching feature can be switched on by checking the **Cache text** option.

Additional settings for the caching functionality is available by clicking the **Cache...** link which will open the Cache Settings dialog.

### 1.2.1.2 Date tab

The date tab allows searching by last modified, created, and last accessed date.

Clicking the calendar buttons will open the Date/Time Selection Dialog.

**Note:** Any changes made to the modified date criteria are immediately reflected in the Main tab.

### 1.2.1.3 Attributes tab

The attributes tab allows filtering of files/folders based on their attributes.

Each attribute can be one of three values:

- **--** Ignore the attribute.
- **On** The attribute must be set on the file/folder.
Off The attribute must NOT be set on the file/folder.

1.2.1.4 Scripting tab

Scripting allows customization of the search engine’s file name and contents matching algorithms through any valid Active Scripting script.

1.2.1.5 Compressed Files tab

The Compressed Files tab shows the list of extensions relating to compressed/archive formats.

When a compressed file format is activated FileLocator Pro treats any files it finds of that type as part of the file system folder hierarchy. e.g. c:\zips\file1.zip\compressed\idoc.txt
1.2.1.6 Date/Time Selection

FileLocator Pro accepts various different date/time formats for filtering files based on the modified date/time. To help specify the correct value the open the Date/Time Selection dialog by clicking on the Calendar buttons shown above.

Date/time values fall into one of two broad categories:
- Fixed date/times - an absolute date/time value that stays the same on subsequent searches, e.g. 19/04/16 12:00
- Relative date/times - a value that is relative to the moment the search is run, e.g. Today Start of hour

The dialog shows how the current selection evaluates at that point in time. It is constantly updated to reflect the values of relative date and times.

## Date values

Relative dates can be one of the following:

<table>
<thead>
<tr>
<th>Relative Date</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today (Default)</td>
<td>Date the search is run.</td>
<td>e.g. 09/03/16 (Wednesday)</td>
</tr>
<tr>
<td>Start of week</td>
<td>First day of the week when the search is run (Monday is considered the start of the week).</td>
<td>e.g. 07/03/16 (Monday)</td>
</tr>
<tr>
<td>Start of month</td>
<td>First day of the month when the search is run.</td>
<td>e.g. 01/03/16</td>
</tr>
<tr>
<td>Start of year</td>
<td>First day of the year when the search is run.</td>
<td>e.g. 01/01/16</td>
</tr>
<tr>
<td>End of week</td>
<td>Last day of the week when the search is run (Sunday is considered the last day of the week).</td>
<td>e.g. 13/03/16 (Sunday)</td>
</tr>
<tr>
<td>End of month</td>
<td>Last day of the month when the search is run.</td>
<td>e.g. 31/03/16</td>
</tr>
<tr>
<td>End of year</td>
<td>Last day of the year when the search is run.</td>
<td>e.g. 31/12/16</td>
</tr>
</tbody>
</table>

Dates can be adjusted forward or back by any number of days, weeks, months, or years. For example to set the date to be the first day of the previous week select 'Start of week' and then apply an adjustment of '-1 Week'.

## Time values

Relative times can be one of the following:

<table>
<thead>
<tr>
<th>Relative Time</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Now</td>
<td>Time at the point the search is run.</td>
<td>e.g. 13:24:52</td>
</tr>
<tr>
<td>Start of minute</td>
<td>Time at the point the search is run with the seconds part set to zero.</td>
<td>e.g. 13:24:00</td>
</tr>
<tr>
<td>Start of hour</td>
<td>Time at the point the search is run with the minutes and seconds part set to zero.</td>
<td>e.g. 13:00:00</td>
</tr>
<tr>
<td>Start of day (Default)</td>
<td>Time is set to 00:00:00</td>
<td>e.g. 00:00:00</td>
</tr>
<tr>
<td>End of minute</td>
<td>Time at the point the search is run with the seconds part set to 59.</td>
<td>e.g. 13:24:59</td>
</tr>
<tr>
<td>End of hour</td>
<td>Time at the point the search is run with the minute and seconds part set to 59.</td>
<td>e.g. 13:59:59</td>
</tr>
<tr>
<td>End of day</td>
<td>Time is set to 23:59:59</td>
<td>e.g. 23:59:59</td>
</tr>
</tbody>
</table>

Times can be adjusted forward or back by any number of seconds, minutes, or hours.

Note: Relative date/times are evaluated at the point the search is started and are fixed to that value for the duration of the search. The date/time is only re-evaluated at the start of the next search.
1.2.1.7 Document Search Settings

The Document Search Settings is opened from the Options tab. The settings on this page define how FileLocator Pro searches the specified document formats.

![Document Search Settings](image)

Select the search method for searching common Office document formats (e.g. doc, pdf, xls, etc):

- **Text Search**
- **Deep Search** (searches both the Text and the raw data in the file)
- **Custom processing settings**

- Use ALL appropriate document readers
- Use only selected document readers:

<table>
<thead>
<tr>
<th>Extension</th>
<th>Reader Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIF</td>
<td>EMF</td>
</tr>
<tr>
<td>APPCONTENT-MS</td>
<td>EML</td>
</tr>
<tr>
<td>BMP</td>
<td>EPRTX</td>
</tr>
<tr>
<td>DOC</td>
<td>EPUF</td>
</tr>
<tr>
<td>DOCM</td>
<td>FLAC</td>
</tr>
<tr>
<td>DOCX</td>
<td>GIF</td>
</tr>
<tr>
<td>DOT</td>
<td>JNT</td>
</tr>
<tr>
<td>DOTX</td>
<td>JPEG</td>
</tr>
<tr>
<td>DWF</td>
<td>JTX</td>
</tr>
<tr>
<td>EASMX</td>
<td>MP3</td>
</tr>
<tr>
<td>EDRWX</td>
<td>MP4</td>
</tr>
</tbody>
</table>

Note: The actual extensions listed will depend on each individual computer setup.

Many document formats, such as docx and pdf, need to be converted to text before they can be read properly. The file formats with registered 'document readers' are shown in the list and the options on this page define whether or not those readers are used.

- **Text Search** (default)
  All available document readers are used to convert the supported formats into text. Document formats not shown in the list, such as .txt, are searched without any special conversion process.

- **Deep Search**
  Like Text Search all available document readers are used but if the search term is not found in the converted text FileLocator Pro performs a second search on the raw data of the file, which might find meta-data not produced by the document reader.
Custom processing settings  User defined selection of document readers to use. The option **Also search raw document data of processed files** defines whether or not a secondary raw data search occurs, as happens with **Deep Search**.

### 1.2.1.8 Cache Settings

The Cache Settings dialog is opened from the Options tab.

The cache is used to retain text extracted from processed document files, ie it does not cache text from non-processed files such as .txt files. If a file’s last modification date does not match the date stored in the cache the file is re-cached to ensure search accuracy. Text is compressed before being stored in the cache to reduce disk usage but uses a very fast compression algorithm to minimize retrieval time.

![Cache Settings](image)

The dialog shows the amount of information used by the cache, the maximum allowed size for any single document, and also the expiration policy for each document.
Maximum document size relates to the size of the extracted text not the size of the original document and defaults to around 10MB.

The default expiration is to remove any items from the cache if they have not been referenced in a search in the last 60 days.

1.2.2 Basic Interface

Main features:
- From the Main tab the fields Filename, Containing Text, and Look in can all be freely entered or selected from previously used search criteria (note: last twenty values for each are retained).
- The main difference between this and Windows Find is the 'Search Wizard...' button, which opens the Search Wizard to walk the user through entering the criteria required for searching.

Options Tab

Main features:
- File name, Contents, and Look In expression type.
- 'Match case' specifies if the searches are case-sensitive.

1.2.3 Index Interface

Indexed searching works by searching a pre-built index to locate files, it's main advantage is that a search on an index is normally very fast, e.g. sub-second times.
The Index Interface has three main sections:

1. **Search field.** This is a search-as-you-type field and shows previous searches using the drop-down box. The 'Aa' button switches on/off case-sensitive searching, if the specified index supports it.

2. **Index list.** Shows the current index and when dropped-down all the available indexes, to add a new one pick the '<Create New Index...>' option, which will open the Index Manager.

3. **Index Manager button.** Click this button to open the Index Manager.

**Performing a Search**

Before you can perform a search you need to create an index. Once the index has been created you can search it by typing information into the search field.

**Limitations of Indexed Search**

Although indexed searching is very fast there is one very important fact to keep in mind, the term being searched for must be in the index for it to be found. Common issues to be aware of:

- **File changes** If files are changed, added or deleted and the index is not updated then searches on the index will be driven by the old information not the new changes.

- **Search terms** During the indexing process not all terms are considered 'indexable'. Words that are very common and appear in all documents, such as the or and, are not indexed nor are character sequences that do not seem to be valid language terms, eg. 4*2.

**1.3 File List View**

As files are found during the search they appear in the File List view. For each file its name and location are displayed. All files selected in this view are shown in the Contents view.

FileLocator Pro supports context menus to list valid operations for a selected file or group of files. Context menus will work on selections of multiple files but the list of valid operations will be reduced to only the operations common to all selected files.
Column Filters

Files can be temporarily filtered from the list through column filters. Click the Filter button (highlighted below) to display the filter edit boxes.

The filters are applied immediately and can contain Boolean or type specific expressions:

<table>
<thead>
<tr>
<th>Boolean expressions</th>
<th>All column filters can accept Boolean expressions, e.g. tower NOT (bridge OR hamlets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeric expressions</td>
<td>Numeric columns, such as Size and Hits, can be filtered on the text in the column using Boolean expressions or the underlying numeric value. The greater than or less than symbols are used to indicate numeric range filtering, e.g. &gt; 10 &lt; 20. The size column also accepts Byte, KB, MB, or GB symbols.</td>
</tr>
<tr>
<td>Date/time expressions</td>
<td>Date/time columns, such as Modified, Created, and Last Accessed columns, can be filtered on the text in the column using Boolean expressions or the underlying date/time value. The greater than or less than symbols are used to indicate date/time range filtering, e.g. &gt; 20 Sep 2010. Date/times can be specified in any format accepted by the standard Date/Time processing functionality including relative date times, e.g. &lt; Today -3 years.</td>
</tr>
</tbody>
</table>
1.4 Contents View

Any files selected in the File List view are displayed in the Contents view.

Summary Tab

The summary tab simply provides a summary of the latest search:

Depending on the type of search (e.g. File name search, content search, index search etc.) different information is displayed. In the above example it shows the statistics for:

- Found: the count and size of all the files that matched both the file name and containing text criteria and are therefore displayed in the File List View.
- Text: the total number of hits found in the text of the files
Searched  the count and size of all files that were searched after matching the file name criteria (only applicable for content searches)
Pending  the number of files that remain to be searched (when the search has finished this value should always be 0).
Search   
Checked the count and size of all files that were checked against the file name criteria
Status  the search status and total running time
Completed The time the search finished

The Summary tab also shows any error, warnings, and informational data generated during the search to help understand the results of the search. In the above example there is a warning that the content search was case sensitive and additional information showing that 5,164 files were excluded based on their name (i.e., the name did not match the File name field) and 3,102 files excluded based on the contents of file (i.e., the contents did not match the Containing Text field).

**Hits Tab**

When searching through the contents of files the Hits tab displays the found information, i.e., the hits, from each of the selected files (click Select All from the Edit menu to see hits for all files). For non-content searches only the file name is displayed.

Lines that contain the search text are shown with the hit text highlighted in a different color. The
highlight color is by default blue but this can be changed to any color through Set Highlight Colour on the Edit menu.

The expansion buttons next to the lines of text can be used to show surrounding lines of text as shown below.

The number of surrounding lines can be set via the Configuration dialog.

The file can be opened at the specified line by either double-clicking on the line or right-clicking on the line to bring up the context menu and selecting "Open in New Window...". To open the file with an external editor (e.g. Notepad++) select "Open in External Editor..." from the context menu. For more information see Editor Settings.

Note: When displaying file contents the line number of each line found within the file is also displayed. This line number is estimated by counting end of line markers within the file and therefore if the file contains non-text information then the line numbers may not be accurate.

Text Tab

To view the hits in context of the actual file use the Text tab. The Text tab embeds the Internal File Viewer into the Contents View for faster previewing of files:
To open the file in a larger window choose 'Open in New Window...' option from the context menu or use the Ctrl+Enter key combination.

Note: By default FileLocator Pro will open the file in Text tab when double-clicking on a hit in the Hits tab. This default behaviour can be changed in the Editor Settings page.

**Thumbnails Tab**

When searching for pictures, or other graphical files, the Thumbnail tab provides a preview of the selected files.
Reports Tab

The reports tab provides an easy way to export, print, or summarize search data.
More information on FileLocator Pro’s reporting feature is available in the Reports topic.

**Hiding/Docking the View**

If displaying of content information is not important then it is often more efficient to hide the contents view, especially with very large file selections. To hide the contents view either select ‘Hide Contents View’ from the Contents View context menu or select the ‘Window->Contents View->Hide’ menu option.

To display the contents view below the file list view either select ‘Dock Below’ from the Contents View context menu or select the ‘Window->Contents View->Dock Below’ menu option.

**Printing**

The Hits tab is the printable area of the application and prints whatever the user has selected in the File List view. To print this view click Print or Print Preview from the File menu.

1.5 **Internal File Viewer**

The Internal Viewer is a read-only display of the found file with the search hits highlighted.
Secondary Search
- Allows additional searches of the file to be performed by entering text in the edit box.

Location Bar
- Provides an overview of the location of the lines shown in the File Contents in relation to the rest of the file.

File Contents
- Displays the file opened at the line that was selected in the Contents View with the found text automatically highlighted.

Content Menu

Additional operations are available through the context menu (right-click menu):
Available commands:

**Word Wrap**
Toggles word wrap on and off.

**Copy**
Copies the selected text (shown in pale green) into the clipboard. If no text is highlighted then the word at the current cursor position is copied. If the cursor is not on a valid word then the whole line is copied.

**Open in External Editor**
Opens the file at the current line in the external editor specified in Editor Settings.

**Open in Visual Studio**
Opens the file at the current line in Visual Studio (if Visual Studio is installed on the machine).

**Search Again**
Runs the original search again for the highlighted search text.

**New Search**
Creates a new search window based on the original search but for the highlighted search text.

**Find**
Performs a secondary search on the currently selected text. If no text selected then the search uses the word at the current cursor position.

**Find Next**
Moves to the next highlighted hit.

**Find Previous**
Moves to the previous highlighted hit.

**Highlight Original**
Toggles the highlighting of the original search hits.

**Highlight Current**
Toggles the highlighting of the secondary search hits.

**Set Font**
Selects the font used by the viewer. The default font is Courier New.

**File**
Displays the Explorer shell menu for the file.

**Highlighting**

When a file is first opened the original found text is highlighted. If a secondary search is
performed then that is also highlighted but in a different color. Highlighting can be switched on and off by either using the context menu or the short cut combinations Ctrl+Shift+O for original hits and Ctrl+Shift+C for secondary hits.

Where hits from the original and secondary search overlap the hit is highlighted in red.

**Navigation**

To move to each of the highlighted hits either use the context menu or press F3 (or Shift+F3 to move backwards). Navigation is always to the next highlighted match independent of whether that was from the original or secondary search. Therefore, to only move through the secondary search hits turn off the highlighting for the original search.

### 1.6 Search Navigation

Using search navigation it is possible to browse and/or reuse previous searches. Much like the forward and back buttons on a web browser the search navigation buttons navigate backwards or forwards through searches.

The number of searches available for browsing is determined by the Search Navigation settings in the History Settings.

### 1.7 Favorites

Searches that are performed frequently can be saved as Favorites. Favorites are saved searches that can be quickly loaded into the search panel for easy movement between different search types.

To access the Favorites functionality click the Favorite button on the toolbar (or press Ctrl+D):
Adding a Favorite

To add a new favorite click the Add Favorite toolbar button:

which will open the Add a Favorite dialog:
There are two values to associate with the favorite:

**Description**: A short meaningful description of the favorite

**Tags**: (Optional) Tags that can be used to help group favorites and aid favorite filtering

### Managing Favorites

When you click on a favorite it will be loaded into the current search window. To load the favorite into a new search window open the favorite's context menu and click 'Open in New Window'.

To filter the number of favorites displayed enter search terms in the 'Search' box. Any favorites that include all the terms in either the Description or Tags (or combination of both) will be displayed.
Importing Favorites

Favorites are simply saved searches, ie SRF files, with just a little extra meta data for the description and tags. Therefore you can import existing SRF files as favorites by copying them into the Favorites folder. To open the Favorites folder click on the Open Favorites Folder toolbar button:

1.8 Reports

FileLocator Pro’s reporting feature provides a quick way to export, print and summarize search information. There are four main reports: File List Report, Contents Report, Keywords Summary Report and Keyword by File Report. All the reports can be customized to include/exclude different sections and columns.

File List Report

The File List Report is very similar to the File List View and is only available in a Tabulated style. The report only outputs file information, ie it does not output any of the found content.

Contents Report

The Contents Report is for reporting on the found content. In the Standard style the output looks similar to the output displayed in the Hits tab.
The report can also display information in a Tabulated style, which is better suited if you need to export the information to a spreadsheet application.

### Keyword Summary Report

Keyword statistics are displayed in the Keyword Summary Report. Each keyword is displayed along with the total number of occurrences of that keyword found during the search. If the keyword includes wildcard characters then the statistics are broken down into each separate keyword the
keyword pattern matches. The keyword breakdown can be disabled by removing the **Keyword Hit** column.

### Keyword by File Report

While the Keyword Summary Report displays combined keyword hit statistics across the whole search the Keyword by File Report breaks down the keyword statistics on a file by file basis.

### Report Options

To customize the information shown in each report click the **Options** button (shown highlighted below).
The Report Options lists the available columns for each report and which headers to display for the report. The options shown below are for the Contents report.

1.9 Sessions, Workspaces and Search Criteria

FileLocator Pro allows search data to be exported in a number of different ways but while the Export Results and Reports functionality is useful for exporting to common formats, such as Text, CSV, and HTML, these formats can't be used to reload search data back into the application. For that FileLocator Pro has three different save options: Search Criteria, Sessions, and
Workspaces.

**Search Criteria**

The simplest save option (and the one used by the Favorites functionality) is to save just the Search Criteria using the **File -> Save Criteria** menu option. The resulting SRF file can be used to load FileLocator Pro's search criteria fields.

Note: The SRF file also contains the configuration settings at the time of the save but these are not normally re-applied when the SRF file is loaded. However, by using the command line switch '-pc' the current configuration can be reset to configuration settings at the same of the save.

**Sessions**

A single search tab is referred to as a Session and can be saved using the **File -> Save Search** menu option. The resulting FLSX file contains the search criteria and search results for not just the current search but also the search history for that search tab (if specified).

![Save Search Session](image)

**Workspaces**

A Workspace consists of all the search Sessions and can be saved use the **File -> Save Workspace** menu option. The resulting FLWX file contains the search criteria and search results for all the specified search sessions.
1.10 **Index Manager**

The Index Manager application controls the indexes available for searching.

1. **Index List.** Shows a summary of all available indexes. Operations can be performed on each index using the main or context menus.

2. **Index Details.** Shows details for the currently selected index.
Index Operations

Various operations are available for indexing via the toolbars, menus, and keyboard short-cuts:

<table>
<thead>
<tr>
<th>Operation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit Index</td>
<td>modify the index parameters</td>
</tr>
<tr>
<td>Remove index</td>
<td>remove the index from the list or completely delete the index</td>
</tr>
<tr>
<td>Add New Index</td>
<td>create a new index or reference an existing index</td>
</tr>
<tr>
<td>Update index</td>
<td>rescan the indexed files look for any changes</td>
</tr>
<tr>
<td>Recreate Index</td>
<td>delete the index and re-create from scratch</td>
</tr>
<tr>
<td>Cancel indexing</td>
<td>Cancel the indexing process currently in operation and rolling back to the previous index state.</td>
</tr>
</tbody>
</table>

1.10.1 Create/Edit Index

To add an existing index click the Add Index button in the Index Manager and select Create a new index option.
Index Name and Store

Index name  The main identifier for the index.
Store  The folder where the index data is stored.

Index Content

These settings decide what is included in the index:

Documents/PDF/Text Files  Includes common document types, such as Word, Excel, PDF etc. and regular text files.
Outlook PST/MSG Files  Includes emails from within PST, OST and MSG files. To index the attachments of the emails check the Email attachments option.
Specific files

Other file types that might not be included in the options above. For example to include two extra file types ALT and ALT2 you would add:

`.alt;*.alt2`

Or, if you wanted to ONLY index DOC files you would uncheck the Documents/ PDF/Text Files option and add:

`*.doc`

Enable case sensitive searching

By default case-sensitive searching is switched off, since case sensitive searching requires the index to include the case-sensitive variants of the same word and therefore increases the size of the index. You can enable case-sensitive searching by checking this option.

Include file names for non-content file types

Includes the file names of all the other files which were found during indexing but didn't have their content indexed. This allows for files to be found by name without requiring their content to also be indexed.

Index Locations

These settings decide which locations will be scanned for valid index content:

- **Standard document locations**: Includes the standard document locations such as Desktop, My Documents, My Music, My Pictures etc.
- **Specific locations**: Other locations to scan for indexable content. To include multiple locations separate them with a semi-colon, e.g.

  `M:\Documents;S:\Archive`

1.10.2 Shared Indexes

Indexes can be shared among multiple users. To add an existing index click the Add Index button in the Index Manager and select **Reference an existing index** option.
Then select the location the index is stored:

**Important**

When performing index based searches FileLocator Pro uses the index to initially identify valid files but then re-accesses the file when displaying the results to the user. Therefore, for an index to be shared successfully among multiple users the index must use a location that is available to all users and mapped in the same way.

For example, to index the mapped network folder S:\IndexFiles all users of the index must have the same mapping for S: \ and be able to access all files included in the index otherwise the user will see results but no hits, e.g.

1.10.3 Command line utility

Indexes can be updated/recreated via the console application:
flpidx.exe -name [index name] | -path [path to index store] | -recreate | -update | -verbose | -help

-name [index name]
Name of the index to perform the operation on.
-path [path to index store]
Path to the location of the index store
-recreate
Re-create the index
-update
Update the index with changes found
-help
Show help information
-verbose
Show detailed information of files being indexed

Examples:
To update the 'Emails' index the command line would be:
```
flpidx.exe -name "Emails" -update
```
To recreate the index stored in 'C:\Indexes\Shared' the command line would be:
```
flpidx.exe -path "C:\Indexes\Shared" -recreate
```

1.11 Hints & Tips

**Searching for multiple file types**
You can search multiple files by using regular expressions or DOS expressions. E.g. Searching the file types .cpp, .h, .c, .INL the regular expression would be:
```
\.(cpp|h|c|INL)$
```
OR, alternatively as a DOS expression it would be:
```
*.cpp;*.h;*.c;*.INL
```

**Excluding file types**
Prefix DOS expression with NOT: to exclude certain file types from being searched. For example, you can search everything but COM and EXE files by setting the file name to the DOS Expression:
```
NOT:*.exe;*.com
```

**Searching multiple locations**
FileLocator Pro can search multiple folder paths. In the 'Look In' field separate each folder with a semi-colon e.g.
```
c:\winnt;c:\tmp
```

**Using expressions in the Look In field**
Expressions are supported on folder paths, to use the feature use the expression drop down list next to the Look In edit field. The expression
is not processed on the whole path but on the path parts, e.g. c:\usr\dev\.*\release

would match all folders called "release" two levels down from the "c: \usr\dev" folder.

Launching FileLocator Pro from Windows Explorer

FileLocator Pro can be integrated with the Windows Shell through the Shell Extensions settings. For example, while browsing files and folders in Windows Explorer you can launch FileLocator Pro by right-clicking on the folder and selecting 'FileLocator Pro...’ from the folder’s context menu or using the short-cut key combination Ctrl+F.

Common searches

Save your most common search criteria as a SRF file and put a shortcut to the file on the Start menu. Then when you open the shortcut FileLocator Pro will start up with your most common search options.

Note: Make sure that FileLocator Pro is associated with SRF files in the Shell Integration settings.

Specifying default values via the command line

You can specify the initial values for FileLocator Pro through command line parameters. There is even an option to switch off the GUI (Graphical User Interface) and save the results directly to a file, useful when integrating FileLocator Pro with other applications. To see a list of valid command line parameters go to the "Help->Command Line Parameters" dialog (or run FileLocatorPro.exe -h).

Performance effect of word wrapping

Word wrapping is expensive, especially when trying to display a lot of contents. If the Contents View display is slow consider switching Word Wrapping off.

Performance effect of Contents View

If you are selecting a large number of files and do not need to see the search contents of those files it is much quicker to turn the 'Contents View' off, through the "Window->Contents View->Hide" menu option.

Performance effect of deferred searching

FileLocator Pro deferred searching works in a two phase process. The first phase collects a list of files that match the File name criteria. The second phase searches the contents of the files found in the first phase. If many files are found in the first phase FileLocator Pro may use a significant amount of memory resources maintaining the list of files.

Therefore there is an option Immediate in the Search Settings to instruct FileLocator Pro to search the contents of the file as soon as the File name is matched, avoiding the maintenance of an internal file list. The only drawback to immediate searching is that FileLocator Pro cannot display a progress meter. Use this feature for more memory efficient contents searching of a large group of files (i.e. > 1,000,000), normally this option is NOT required.

FileLocator Pro will automatically switch to immediate searching if it
detects a very large search.

Note: The multi-phase searching option is compromise of these two methods and is now the default search method.

**Searching Unix and Mac files**

Unix and Mac text file formats use a different sequence to mark the end of a line. Windows and DOS use the character sequence CR-LF (Carriage Return - Line Feed) but Unix only uses LF and Mac only uses CR. To instruct FileLocator Pro to look for alternative EOL (End of Line) sequences go to the Configuration settings (via the menu option "Tools->Configuration") and select Character Processing.

**Testing regular expressions**

Test your regular expressions through the "Tools->Regular Expression Tester" menu option.

More information can be found online at the Mythicsoft Knowledge Base: http://www.mythicsoft.com/kb.

1.12 **Questions/Comments?**

More information is available at the Mythicsoft Questions and Answers site: http://qa.mythicsoft.com/

Or please feel free to contact us with any questions or comments at: http://www.mythicsoft.com/filelocatorpro/support

Or via email: support@mythicsoft.com

If you would like to purchase a registration code please visit the web site: http://www.mythicsoft.com/filelocatorpro/buy

Thank you for using FileLocator Pro.
Configuration

Part II
2 Configuration

FileLocator Pro stores all its configuration information in XML files located, by default, in the Mythicsoft AppData folder defined in the Folder Settings. The configuration information can be changed by clicking on the Configuration button on the tool bar or by selecting the 'Configuration...' option from the 'Tools' menu.

Configuration Window

The configuration information is presented as tree view of configuration groups and individual settings for each group.

For more information visit the help page for each group:
- General Settings
- Expression Settings
- Editor Settings
- Advanced Settings
2.1 General Settings

General settings are broken up into the following configuration groups:
- History
- Display
- Search
- Email
- Character Processing
- Shell Integration
- Sounds/Alerts
- Localization
- Colors
- User Interface

2.1.1 History Settings

History settings control which information FileLocator Pro remembers about previous searches.

To clear the current history click the 'Clear History...' button. To clear the history every time FileLocator Pro exists check the 'Clear all history on exit'.
## Remember

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options settings</td>
<td>When checked FileLocator Pro restores options settings from the last FileLocator Pro session, such as expression type, match case settings etc.</td>
</tr>
<tr>
<td>Window size</td>
<td>When checked FileLocator Pro restores the Window positioning from the last FileLocator Pro session.</td>
</tr>
<tr>
<td>Column sort order</td>
<td>When checked FileLocator Pro remembers the column sort order between searches.</td>
</tr>
<tr>
<td>Load last search on startup</td>
<td>When checked FileLocator Pro loads, on startup, the criteria used for the last successful FileLocator Pro search. This option effectively overrides the 'Options settings' since the last search will include all the options.</td>
</tr>
</tbody>
</table>

### Maximum List Sizes

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search Navigation</td>
<td>The maximum number of searches shown in the search navigation list. Searches are not remembered across FileLocator Pro sessions so the list is always initially empty.</td>
</tr>
<tr>
<td>Drop Down Lists</td>
<td>The maximum number of items shown in the criteria drop down list boxes, e.g. Filename, Containing text, and Look in. These items are remembered across FileLocator Pro sessions so the list from the previous session will be used to initialize the list of the new session.</td>
</tr>
<tr>
<td>Recent Files</td>
<td>The number of files shown in the Recent Files list on the File menu.</td>
</tr>
</tbody>
</table>

### 2.1.2 Display Settings

Display settings control how FileLocator Pro displays results.
Display Lines

Max displayed lines per file  
Limits the number of lines that will be returned per file, to avoid errant searches on very large file consuming too much memory. The default is 10,000 lines.

Limit the maximum characters displayed per line  
When checked, limits the number of characters displayed in the Contents View for each line (the abbreviated line is centered around the found text on the line).

If not checked the full line, as defined in the Character Processing Settings, is displayed.

Surrounding lines

Sets the number of surrounding lines stored for each found line. Surrounding lines are shown in the Contents View pane and can be seen by clicking on the ‘+’ expand icon next to the found line.

The settings only effects new searches so old searches will continue to display the surrounding lines previously recorded.

File path display preference

When FileLocator Pro displays file paths there are several display options for when the path
doesn't fit in the available space. For example, the sample path:

C:\Program Files\Mythicsoft\FileLocator Pro\FileLocatorPro.exe

if display space was limited should be displayed as:

<table>
<thead>
<tr>
<th>Truncation method</th>
<th>File List View</th>
<th>Contents View</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't truncate</td>
<td>C:\Program Files\Mythicsoft...</td>
<td>C:\Program Files\Mythicsoft\FileLocator Pro\FileLocatorPro.exe</td>
</tr>
<tr>
<td>Truncate start</td>
<td>...Mythicsoft\FileLocator Pro</td>
<td>...soft\FileLocator Pro\FileLocatorPro.exe</td>
</tr>
<tr>
<td>Truncate middle</td>
<td>C:...soft\FileLocator Pro</td>
<td>C:...FileLocator Pro\FileLocatorPro.exe</td>
</tr>
<tr>
<td>Truncate end</td>
<td>C:\Program Files\Mythicsoft...</td>
<td>C:\Program Files\Mythicsoft...\FileLocatorPro.exe</td>
</tr>
</tbody>
</table>

2.1.3 Search Settings

Search settings define how FileLocator Pro searches files.
Search Method

When searching the contents of files FileLocator Pro can operate in one of three modes:

- **Multi-phase (default)**: As files are discovered they are added to a queue for immediate search. Files are continually added to the queue and concurrently files are pulled from the queue (in the order they were added) for content searching.

- **Immediate**: As files are found they are immediately searched. The search does not progress to matching the next file until there is a free content searching thread.

- **Deferred**: As files are discovered they are added to a queue. Once this queuing/discovery phase has finished the files are content searched. This has the benefit that accurate content searching progress can be shown because the full list is known.

  Note: Prior to version 8 this was the default search method.

The **Calculate Hit Count** option specifies whether or not FileLocator Pro displays the number of hits found within each file in the Hit column in the File List View. When this option is switched OFF FileLocator Pro may search files in 'Just In Time' (JIT) search mode.
JIT searching only searches enough of the file to decide whether or not it is a valid result and not necessarily the whole file. The last search position in the file is recorded and the file is only completely searched when the full results are required for display or export. This can be useful for searching very large files where the full results aren't necessarily required.

**Containing Text**

To include the file name and/or path in the content search use the **Include file name in content search** or **Include folder path in content search** options, otherwise only the content of the file is used for searching.

### 2.1.4 Email Settings

Email Settings control how FileLocator Pro searches through email repositories, such as MSG and PST files.

The options are:

- **Include parent message name in attachment name**
  - If this option is checked an attachment prefixes the parent message's name to it's name, e.g. An attachment name "Welcome.png" would be named something like "RE:Hello from Mythicsoft - File: Welcome.png".
  - This is useful if you want to search by the parent message name AND attachment name at the same time.
Add separate message body text attachment
With this option checked each message has a separate .txt file attachment with the message body text. This is useful if you want to extract the message body as a text file from a group of emails.

Remove HTML markup from message body
If the message body contains HTML this option will remove the markup from the HTML to try and present cleaner text.

2.1.5 Character Processing Settings

Character processing settings control how FileLocator Pro handles information found in files.

End of Line (EOL) Identifiers

Defines which other EOL identifiers FileLocator Pro should use. Normally a Windows text file will use a CRLF (carriage return 0x0d, line feed 0x0a) combination to indicate the end of a line. However, other operating systems use different standards, usually either a stand alone CR or a stand alone LF character.

Maximum characters per line - sets the limit to the line length if an EOL character is not found. Lines that exceed the maximum line length are broken into separate lines, although the line number for the line stays the same.

Special
Convert to 7-bit chars - when checked FileLocator Pro only uses the first 7-bits of each data character. Some early word processors reserved the 8th bit of each character for formatting purposes, which if not removed causes problems when searching the data. This setting causes the 8-th bit of every character to be ignored.

2.1.6 Shell Integration Settings

Shell integration settings control how FileLocator Pro integrates into the Window shell.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate with FileLocator Pro file types</td>
<td>Associates FileLocator Pro with the FileLocator Pro files types:</td>
</tr>
<tr>
<td></td>
<td>- SRF the default extension for FileLocator Pro's saved result file.</td>
</tr>
<tr>
<td></td>
<td>- FLSX the default extensions for FileLocator Pro's saved session file.</td>
</tr>
<tr>
<td></td>
<td>- FLWX the default extensions for FileLocator Pro's workspace file.</td>
</tr>
</tbody>
</table>

When set double-clicking on a file of any of those file types will launch FileLocator Pro opening the specified file.

Add to a Folder's context menu | Adds FileLocator Pro to the context menu of folders and drives. This provides a convenient way to launch FileLocator Pro for a given folder through right-clicking on the folder and selecting 'FileLocator Pro...' from the context menu.

Add to a File's context menu | Adds FileLocator Pro to the context menu of all files. This provides a
context menu

A convenient way to use FileLocator Pro to search a limited selection of files through right-clicking on a selection of files, and selecting ‘FileLocator Pro...’ from the context menu.

Replace default Explorer Search

Launches FileLocator Pro, instead of Windows Search, when Ctrl+F or F3 is pressed in Windows Explorer.

Enable HotKey launch

Enables launching of FileLocator Pro using the key combination WinKey + Alt+F or WinKey + Alt+F3.

Note: Hotkey support is enabled through the use of a small lightweight application called FLProHotKey that is added to the system start-up list.

UAC Note: Since changing shell settings requires administrative privileges, FileLocator Pro launches a separate application, FLProShellAdmin.exe, to actually make the shell changes. FLProShellAdmin.exe requires privilege escalation and therefore displays a UAC escalation request if UAC is enabled.

2.1.7 Sounds/Alerts Settings

Sounds and Alerts configuration optionally provides additional visual or audible notifications for different FileLocator Pro events.

File Found
Play sound
Specifies the wave file to play if a file is found.
Show task bar notification message
Specifies whether or not to show a notification window by the task bar showing how many files have been found when a file is found.
Repeat for every file found
Causes the sound and task bar notifications to occur for every file found and not just the first file found (the default).

Search Finished
Play sound
Specifies the wave file to play when the search finishes.
Show task bar notification message
Specifies whether or not to show a notification window, by the task bar, showing that the search has finished and how many files were found during the search.

2.1.8 Localization Settings

Localization settings specify which language should be used for the user interface.

2.1.9 Color Settings

Color settings for FileLocator Pro can be configured here.
Keyword Hits

Keyword hits can have a specific fore color, have bold weight, and/or be underlined. Each keyword for Boolean searches will also be assigned one of ten different color background colors, e.g.

```
Thanks to all FileLocator Pro users for providing such great feedback and helping to keep FileLocator Pro a top quality product.
PDF Functionality is implemented through using the XPDF program. This program is available free of charge and distributed through the GNU license. All appropriate documentation, e.g. license, man pages etc., for XPDF is included in the xpdf sub-folder of
```

Each color can be changed by clicking on the color and selecting a different color:
Text Tab highlighting

The text tab will use the keyword hits background colors but has separate settings for the forecolor, font weight, and italic options.

2.1.10 User Interface Settings

User Interface settings control the FileLocator Pro 'Look and Feel'.

![FileLocator Pro Configuration](image)

**Default**

FileLocator Pro is configured to use the Standard Theme and a tabbed user interface.

**Classic**

FileLocator Pro is configured to look and behalf like FileLocator Pro version 5.x, which uses the Classic Theme and an MDI user interface.

**Custom**

User specified theme and option to use tabbed searching or not.
To change the default file opening settings use the Editor Settings.

**Default contents tab**

This option specifies which tab should be shown when a result is selected in the File List View.

2.2 **Expression Settings**

Expression settings control the various matching rules for each of FileLocator Pro’s expression engines. This section is broken into:

- Boolean Expression Settings
- DOS Expression Settings
- Regular Expression Settings
- File Hash Settings

2.2.1 **Boolean Expression Settings**

Boolean expression settings are used to control how the operators LIKE and NEAR behave.

![FileLocator Pro Configuration](image)

**LIKE Sensitivity**

The LIKE operator can be configured for different sensitivity when matching search terms to
similar words. The possible settings are:

- **Very similar**: Only slight differences in words are accepted, e.g. a single character out of place.
- **Similar**: A wider range of similar words will be matched, e.g. for larger words multiple characters can be out of place.
- **Approximate**: Words only need a very approximate similarity to the search term to match.

**NEAR Distance**

By default the NEAR operator requires related search terms to be within 100 characters of each other. This can be changed to a user defined limit. The lower the limit then the closer the terms need to be to each other and vice versa.

Please see Boolean Expressions for more information on how to use Boolean Expressions.

**Expression Parsing**

When pasting an expression into FileLocator Pro from a 3rd party application, such as Microsoft Word, the quotes may appear stylized, e.g. “Tower London” OR “Canary Wharf”. The **Process stylized quotes as normal quotes** option instructs FileLocator pro to convert those quotes into the standard quotes FileLocator Pro uses to separate expressions, e.g. "Tower London" OR "Canary Wharf".

**2.2.2 DOS Expression Settings**

DOS expression settings specify whether the DOS expression matching rules will follow strict DOS matching rules.
When set to 'Strictly conforming syntax' the DOS matching rules will force a boundary check at the beginning and end of the expression if a wildcard character is found. e.g.

the expression locator* would NOT match the filename filelocatorpro.exe since it doesn't begin with the term 'locator', instead the search term would need to be set to *locator*.

When the option has been switched off it is still possible to specify the boundary check using the '<' and '>' characters, e.g.

the expression <locator*> is equivalent to Strict DOS expression locator*

Please see Expression Types for more information about DOS Expressions.

2.2.3 Regular Expression Settings

Regular expression settings defines the regex syntax to use when searching. This can either be the Perl compatible regular expression syntax or the Classic regular expression syntax. See Expression Types for more information.
When searching for text in foreign languages it can often be useful to 'Collate character ranges' which allows characters outside the standard a-z range to be included in the range, e.g. to include the è in *Années* when using the range *\[a-z\]*

**Multi-line Regular Expressions**

The Max lines per match sets the maximum number of lines over which a single multi-line regular expression match can be made, and therefore the maximum number of lines FileLocator Pro needs to hold in memory when performing multi-line regular expression matching.

**2.2.4 File Hash Settings**

File Hashing Settings specifies which hashing algorithms FileLocator Pro should use when searching for a given file hash.
2.3 Editor Settings

FileLocator Pro allows you to open files using the built-in viewer or external editors. These options specify which viewer should be used:

- Default Editor
- External Editor
- Internal Viewer

2.3.1 Default Editor

FileLocator Pro by default uses its built-in file viewer to display a read-only view of a file's contents. However, it is possible to change the default viewer to an external 3rd party editor by specifying the path name and command line parameters for the external editor. Also, FileLocator Pro supports opening files in Microsoft's Visual Studio.
**Visual Studio Version**

If you have more than one version of Visual Studio installed you can pick which version you'd like to use via the drop down list.

**2.3.2 External Editor**

To use an external editor specify the full path to the editor application and then, in the field below, any command line parameters to be passed to the editor when it is launched. To pass the file name and line number in the command line use the variables $(FILEPATH) and $(LINENUM).
Common Editor Defaults - contains the preset settings to quickly set the command line parameters for a few well known editors. To use these defaults simply select the editor from the drop down list.

2.3.3 Internal Viewer

You can change the Tab size for the Internal Viewer.
2.4 Advanced Settings

Advanced settings are broken up into the following configuration groups:
- File Lists
- Folders
- Junction Points
- Threads/Priority
- XSLT Processor

2.4.1 File Lists

File Lists indicate whether or not a criteria value can be loaded from a text file.
Example: File name list

If the File name criteria allows file lists (the default setting) then instead of specifying:
* .c;*.cpp;*.h;*.hpp;*.inl;*.res;*.rc

the user could specify:
=C:\FileLists\CodeFiles.txt

with CodeFiles.txt containing something like:
*.c
*.cpp
*.h
*.hpp
*.inl
*.res
*.rc

adding each expression on a new line.

Example: Containing text list

To search for a list of keywords from a file switch on 'Containing Text' file lists and then specify the full path to the keyword file in the 'Containing text' criteria field on the Main tab:
=C:\FileLists\Keywords.txt
with Keywords.txt containing something like:
Telephone
Email
Contact

adding each keyword on a new line.

2.4.2 Folder Settings

Folder Settings specify the location that FileLocator Pro stores its configuration, log, favorites, and temporary files.

The default locations are:
$\{ApplicationData\}\logs\
$\{ApplicationData\}\config\
$\{ApplicationData\}\Favorites\n$\{TempFolder\}\n
The $\{ApplicationData\}$ macro evaluates to the ApplicationData folder defined by Windows. On Windows 7 this is commonly:
C:\Users\<id>\AppData\Roaming\Mythicsoft\FileLocatorPro

Other macros available include $\{FileLocatorProFolder\}$ or $\{InstallFolder\}$ which evaluates to the installation location of FileLocator Pro, e.g.
C:\Program Files\Mythicsoft\FileLocator Pro
This can be very useful when installing FileLocator Pro to a USB drive so that all configuration information is kept on the USB drive and not stored in the computer.

The information changed in this dialog is stored in the master.xml file located in the root of the FileLocator Pro installation folder.

$(TempFolder) evaluates to the default temp folder for the user.

2.4.3 Junction Points

NTFS Junction Points are links to other folders on the system. They are similar to symbolic links only stronger, ie. referring to a junction point is for most intents and purposes the same as referring to the folder itself.

By default FileLocator Pro will search junction points, apart from junction points that have the System and Hidden attributes (which normally identify system junction points).

2.4.4 Memory Manager Settings

If FileLocator Pro detects that it’s consuming large amounts of memory it can truncate the search results to reduce the amount of memory required. The Memory Manager Settings allow you to customize the point at which truncation occurs or to switch off the functionality altogether.
2.4.5 Threads/Priority Settings

Thread/Priority settings effect how FileLocator Pro uses the CPU.
**Concurrent threads**

By default FileLocator Pro searches files using a single thread for each CPU core, which is usually the most efficient configuration. However, it is possible to specify a different number of search threads by unchecking the 'Auto Manage' option and specifying the thread count.

Warning: If a machine has a single slow hard drive increasing the number of search threads may slow FileLocator Pro down since the concurrent searches could cause the hard drive to continually seek between the different file disc sector locations. More often than not file searching is I/O bound rather than processor bound.

**Process priority**

FileLocator Pro can be instructed to change its process priority depending upon the current state of the application:
- Foreground - the application has current user input focus.
- Background - the application does not have current user input focus but has not been minimized.
- Minimized - the application has been minimized.

By default the priority for all states is 'Normal', which is the standard setting for Windows applications. The alternative priorities are:
- High - the application process is given a higher priority than Normal processes but the priority is still below processes with real-time priorities.
- Low - the application process is given a lower priority than Normal processes but still receives
a reliable time-slice from the CPU.

2.4.6 XSLT Processor Settings

Save Results provides an option to run an XSL transform to provide custom formatting. FileLocator Pro uses MS XML Core Services to provide the transform functionality but the actual DOM Prog Id can be configured here.

2.5 Extensions

By default FileLocator Pro opens files in their raw binary format. While this works well for text based formats other formats, such as ZIP files or MS Office files, do not work as well. Extensions help FileLocator Pro in processing non-text based formats so that their underlying data is correctly retrieved and searched.
Extensions are organized by:
- IFilters - filters based around Microsoft's indexing service filter specification.
- UTF-8 Default Format - file types that should, by default, be treated as UTF-8.
- Compressed Document Formats - file types that are stored as ZIP files.
- FileLocator Pro Extensions - filters based around Mythicsoft's in house filter specification.

### 2.5.1 IFilters

Microsoft Indexing Service uses filters, much like FileLocator Pro extensions, to interpret given file types into easily searchable text. FileLocator Pro can use these indexing service filters, without the need to run the indexing service, to help convert files into easily searchable text.
The list of currently installed IFilters is shown in the IFilter settings tab. To use the IFilter activate it via the Enhanced File Search settings in the Options tab.

A list of free IFilters can be found using a simple Internet search.

By default IFilters for HTML/XML based file types are not used because many users want to be able to search the tags within an HTML document not just the text. However, if you want to search just the text of HTML/XML files you can include the IFilters by checking the Include IFilters for HTML/XML based file types.

The IFilter Search Priority determines which type of extension should be used for processing a file if both an IFilter AND a FileLocator Pro specific processing extension are registered. By default IFilters are Secondary, ie they will only be used if a FileLocator Pro specific extension is not found or could not load the given file.

### 2.5.2 UTF-8 Default Format

If FileLocator Pro is unable to detect a file's encoding (through the BOM or XML header) it needs to estimate the best encoding to try.

**Auto detect UTF-8 files**

With the auto-detect feature active FileLocator Pro will read the first 2KB of the file to see if any specific UTF-8 character sequences can be found. If they are found it reads the file as UTF-8 otherwise it defaults to reading the file as ASCII text. However, it is possible to override this behaviour and specify UTF-8 as the default format for given file types.
2.5.3 Compressed Document Raw Data Reader

When a document extension, such as DOC, is not active FileLocator Pro still tries to read the raw data of the file. Some file types, however, such as Microsoft Office and Open Office use ZIP to compress the document's data prior to storage, which requires FileLocator Pro to first unzip the document file before searching the raw data.
2.5.4 **FileLocator Pro Extensions**

Extensions help FileLocator Pro in processing non-text based formats so that their underlying data is correctly retrieved and searched.
The screenshot shows the configuration for the ZIP extension, which is used to read files in the ZIP format. The configuration shows that the ZIP extension should be used for all files with a .zip or .jar extension but could be changed to include any other zip based formats.

Safe Mode

An extension is normally run in the same process space as FileLocator Pro since it is the fastest way for FileLocator Pro to communicate with the extension. However, running the extension in the same process space does mean that if the extension has a catastrophic failure it can crash FileLocator Pro. To avoid crashing FileLocator Pro troublesome extensions can be run in 'Safe Mode', which causes them to run in their own process space, but it does mean that using the extension may cause FileLocator Pro to run slightly slower.

Indexing Service Filter

While FileLocator Pro provides extensions for some well known file types, e.g. DOC, XLS etc, it is sometimes faster to use Indexing Service Filters if they are available. The 'Use Indexing Service Filter' check box instructs FileLocator Pro to try and find an Indexing Service Filter and use that instead of the FileLocator Pro extension if one exists.

Note: Using an indexing service filter does not require the indexing service to be switched on merely that the filter is installed on the machine.

Exclude file type from content searches when not active

Some file formats, such as ZIP, do not include useful searchable binary data within them so there is little point in searching through the file if the extension has not been activated. To avoid wasting
time searching through such file formats set the 'Exclude' flag.

**Custom Extensions**

User defined extensions using an external program to convert a given format into text will also be listed. Instructions on how to add user defined extensions can be found in the Custom Extensions topic.
Advanced features

Part III
3 Advanced features

More information on advanced features:
- Command line
- Expression types
- Boolean Expressions
- Scripting
- Look In
- Persistent Search Filters
- Unicode Support
- Search within Search
- Outlook PST Archive Searching
- MSG File Searching

3.1 Command Line

FileLocator Pro's start up values can be altered through information passed in the command line. If an output file is specified then the actual User Interface is not displayed and the results are streamed directly to the file. Alternatively, there is also a console version of the program which displays information on the console instead of through the Windows user interface.

Windows application:

```
   -os | -r | -d [folder name] | -c [containing text] | -f [file name] | -cm | -fm | -s | -fd | -fx | -cr | -pa | -po | -ma
```

Console application:

```
   -os | -d [folder name] | -c [containing text] | -f [file name] |
```

Parameters:

- **-a?** Attributes: -aa=Archive, -ac=Compressed, -ae=Encrypted, -ai=Index, -af=Folder, -ah=Hidden, -ao=Offline, -ar=ReadOnly, -asys=System, -asp=Sparse
- **-c** Text to search for in specified files (i.e. the Containing Text field)
- **-ce?** Contents expr type: -ceb=Boolean, -cex=Regular Expression, -cee=Plain Text, -che=Boolean RegEx, -cex=Whole Word, -che=File Hash
- **-cf** Contents expression spans file (only valid with Boolean expressions)
- **-cm** Match case when contents searching
-d Directory(s) to search (i.e. the Look In field), use -dw for current working directory
-f File names to search for
-fe? File name expr type: -fed=DOS, -fex=Regular Expression, -feb=Boolean, -fee=Plain Text, -feh=Boolean RegEx, -few=Whole Word
-fm Match case when comparing file names
-fx File name shows the file names to exclude
-le? Look In expr type: -leb=Boolean, -lex=Regular Expression, -lee=Plain Text
-m Modified after date value, pass "now" as the date to use the current date and time
-mb Modified before date value, pass "now" as the date to use the current date and time
-o Output filename (runs the search without showing the FileLocator Pro GUI streaming results directly to the file)
oa Append to output file
-oc Output content lines
-oe? Output encoding: -oea=ASCII, -oe8=UTF-8, -oeu=Unicode, -oe8nb=UTF8 (no BOM), -oeub=Unicode (big endian)
-of? Output format: -oft = Text (default), -ofc = CSV, -ofb = Tab, -ofbs = Tab (Spreadsheet), -ofx = XML, -ofh = HTML, -ofsx = Search Session
-ofrs:? Output report style: -ofrs:standard, -ofrs:tabulated
-ofxslt Output custom format XSL Transform
-ol Maximum number of found lines per file to output
-os Output surrounding lines of text
-pa Always use command line parameters when creating new or opening existing searches
   Note: This option can be used to force a criteria value to be preset to a certain value whenever the user creates a new search, regardless of the previously used value.
-pc Overwrite configuration with configuration stored in saved search criteria file.
   Note: Configuration settings, such as active compressed file types (e.g. Zip) or character processing settings, are not normally loaded from the SRF file. This option forces the loading of the configuration settings from the SRF file, effectively setting FileLocator Pro to the identical state it was in when the SRF file was saved.
-po Override values from file when loading from file AND specifying command line parameters
-r Start search immediately (implied by -o option)
-re? Regular expression type: -rep=Perl syntax, -rec=Classic syntax
-resetui Resets the user interface to the default size and position, ie toolbars, menu, docked windows etc. are reset to the installation defaults.
-s Search subfolders
-view Open a file in the Internal Viewer (use -viewline and -viewcol to specify line and column)

-h or -? Show the help dialog
To switch an option off append 'n' to the flag, e.g. 
\texttt{FileLocatorPro.exe -fmn} \textit{Switches OFF match case when comparing files}

Examples:

To launch FileLocator Pro with the Look In field pre-filled with "C:\Documents and Settings\user\My Documents" the command line arguments would be:

\texttt{FileLocatorPro.exe -d "C:\Documents and Settings\user\My Documents"}

To run a search looking for files that match *.sys in the folder C:\WINDOWS without launching the usual user interface but instead streaming the results directly to an output file the command line arguments would be:

\texttt{FileLocatorPro.exe -d "C:\WINDOWS" -f "*.sys" -o "c:\temp \results.txt"}

To launch FileLocator Pro with Search subfolders switched off and Match case on contents searching switched on the command line arguments would be:

\texttt{FileLocatorPro.exe -cm -sn}

\textbf{Indexing Utility}

Indexes can be updated/recreated via the console application:

\texttt{flpidx.exe -name [index name] | -path [path to index store] | -recreate | -update | -verbose | -help}

- \texttt{-name [index name]} Name of the index to perform the operation on.
- \texttt{-path [path to index store]} Path to the location of the index
- \texttt{-recreate} Re-create the index
- \texttt{-update} Update the index with changes found
- \texttt{-help} Show help information
- \texttt{-verbose} Show detailed information of files being indexed

Examples:

To update the 'Emails' index the command line would be:

\texttt{flpidx.exe -name "Emails" -update}

To recreate the index stored in 'C:\Indexes\Shared' the command line would be:
3.2 Expression Types

FileLocator supports the following expression types:
- Boolean
- Boolean RegEx
- Whole Word
- Fuzzy
- DOS
- Exact match
- Regular expression
- File Hash

Boolean Expressions

Boolean expressions combine individual search phrases using the AND, OR, NOT, LIKE and NEAR operators. For more information see Boolean Expressions.

Boolean RegEx Expressions

Boolean RegEx expressions are a special type of Boolean expression that allow regular expressions to be combined using the AND, OR, and NOT operators. For more information see Boolean Expressions.

Whole Word Expressions

Whole Word expressions match the search phrases exactly as typed ignoring partial word matches. Since Whole Word expressions are a special type of Boolean expression individual search phrases can be combined using the AND, OR, and NOT operators. For more information see Boolean Expressions.

Fuzzy Search

Fuzzy search expressions match the approximate search terms, in exactly the same way as the LIKE operator for Boolean Expressions. Since Fuzzy search expressions are a special type of Boolean expression individual search phrases can be combined using the AND, OR, and NOT operators. For more information see Boolean Expressions.

DOS Expressions

DOS expressions are usually used to specify groups of files. Use a semi-colon to specify multiple groups, e.g.
The expression `*.cpp;*.h` searches for files that end with `.cpp` or `.h`

The characters '<' and '>' can be used to match the beginning and end of a file name, e.g.

The expression `<file*` only matches files that begin with the term `file` and NOT files that simply have the term `file` in them.

For more information see DOS Expressions.

**Plain Text**

Plain text matching will match the text as entered (ie literally).

**Regular Expression**

FileLocator Pro can be configured to use Perl compatible regexp syntax or the Classic FileLocator Pro syntax in the Options tab. Basic regular expression can be built using the Expression Wizard

Classic syntax

FileLocator Pro's classic regexp syntax is based on the most commonly used regular expression elements, more information can be found in the Quick Start section.

Perl compatible syntax

Perl compatible regexp syntax is based around the Boost regular expression engine and includes not only the functionality of the 'classic' regular expression engine but also additional Perl style expression enhancements detailed here: [http://www.boost.org/doc/libs/release/libs/regex](http://www.boost.org/doc/libs/release/libs/regex).

**File Hash**

If the content type is set to File Hash then each file is put through a number of hashing algorithms (as defined in the File Hash Settings). The resulting hashes are returned as lines in a text file with each hash on a new line. The specified Containing text value is matched against each hash in the list.

**3.3 Boolean Expressions**

FileLocator Pro's Boolean expression engine supports Web style search expressions using the AND, OR, NOT, NEAR, REGEX, and LIKE operators. FileLocator Pro can be configured to match the expression across the whole file (default) or on a line by line basis in the Options Tab.

Line by Line example

The expression `work AND document` searches for lines that include the words `work`
and document. Since FileLocator Pro implicitly assumes an AND the expression can alternatively be written as work document.

The expression work OR document searches for lines that include either 'work' or 'document'.

The expression work NOT document searches for lines that include 'work' but not 'document'.

Whole file example

The expression work AND document searches for files that include the words work and document. The words can occur on the same line or on different lines throughout the file.

The expression work NOT document searches for files that include work but not document anywhere in the file.

Note: the operators AND, OR, and NOT must be written in capital letters otherwise they are assumed to be search terms.

Quotes can be used to search for literal phrases, e.g.

"work document" searches for the exact phrase work document.

Brackets can be used to specify phrase grouping, e.g.

The expression work AND (document OR letter) searches for lines that include work and either document or letter.

LIKE Operator

If the spelling of the search term is unsure, or possibly misspelled in the search text, the LIKE operator can be used to specify an approximate search term. For example,

LIKE necessary

will find necessary but also slight variations such as neccessary. The scale of the approximation can be changed in the Configuration settings.

NEAR Operator

To specify that two search terms should be near to each other in the search text use the NEAR operator. For example,

work NEAR document

will only match the two terms if they are within a certain number of characters of each other (the default maximum character distance is specified in the Configuration settings). The maximum
distance can be specified as part of the expression, e.g.

`work NEAR:20 document`

would search change the default maximum distance to 20 characters.

**REGEX Operator**

To specify that a term is a regular expression use the REGEX operator. For example,

`work AND REGEX "\d{5,6}"`

will match any document that has the term `work` and the regex `\d{5,6}` (i.e. a number with 5-6 digits) in it. To specify that terms should always be treated as regular expressions, i.e. without the need to use the REGEX operator, use the Boolean RegEx expression type (see below).

**LINES Operator**

The LINES operator limits the lines that are searched for the following expression. For example,

`LINES:3-5 (tower AND london)`

searches only lines 3, 4, and 5 for the expression `tower AND london`.

`LINES:10+ (tower AND london)`

searches all lines from line 10 and higher.

**Boolean Sub Expressions**

Boolean expressions are comprised of sub expressions. The sub expression type will depend on the Expression Type chosen.

- **Boolean (no wildcards)**

  Each phrase is matched exactly as typed but will match against partial words. e.g. `fish` will match against the words `fish`, `fishing` and `selfish`.

- **Boolean (with wildcards)**

  Allows wildcard characters '*' and '?'. '?' will match any single character and '*' will match zero or more characters until the end of the word. e.g. `fish*` will match against the words `fish`, `fishing`, and `selfish`.

  The wildcard setting also allows word boundary matching using the '<' and '>' characters to specify the beginning or end of the word, e.g.

  `<fish>` will match against only the whole word `fish` and not `fishing` or `selfish`. Similarly `fish>` would match both `fish` and `selfish` but not `fishing` since the word must end with `fish`. 
To search for the literal text fish* or fish> put the search term in quotes, e.g. "fish*" or "fish>"

Boolean RegEx Each phrase is treated as a regular expression. If the regular expression includes spaces or parenthesis use quotes to group the expression together. e.g. 
trout.* OR "fish(es|ing)"

Whole Word Each phrase is matched exactly as typed. e.g. 
fish will match against only the word fish and not fishing or selfish.

1 The wildcard setting is specified in the Options tab (the default is to allow wildcards).

Example: Boolean RegEx

By using the Boolean RegEx expression type regular expression searches can be combined using the operators AND, OR, and NOT. The regular expressions are evaluated on each line but the behaviour of the Boolean combination of those regex results, i.e. line by line or across whole file, is defined by the Boolean Expression settings in the Options Tab.

Line by Line example

The expression [0-9]+ AND document searches for lines that include both a number and the word document.

The expression "[a-z]+@[a-z]+" NOT ".(com|net)" searches for lines with email like text but not including .com or .net. Note the use of quotes to show the regular expression grouping (otherwise the brackets would have been treated as a boolean grouping).

Whole file example

The expression "((0-9)+\.)\{3\}([0-9])+" AND error searches for files with an IP address and the word error somewhere in the file but not necessarily on the same line.

Quotes are used to identify parts of the expression that are regular expressions.

Note: Due to the complex nature of the Boolean RegEx expression type searches using it are usually slower than with the other expression types. Therefore use of Boolean RegEx is only recommended when its specific capabilities are required.

3.4 DOS Expressions

DOS Expressions use the familiar wildcards * and ? to specify groups of files, e.g. *.pdf to specify a group of files with the PDF extension. However, FileLocator Pro extends the normal DOS expression functionality with some additional special characters:
<table>
<thead>
<tr>
<th>Character</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Matches zero or more characters</td>
<td>Tower*London - file/folder with Tower followed by London in their name.</td>
</tr>
<tr>
<td>?</td>
<td>Matches any single character</td>
<td>*.as?x - files with a four letter extensions that begin with AS and end X, e.g. Page.aspx or Home.ascx.</td>
</tr>
<tr>
<td>&gt;</td>
<td>End of file indicator</td>
<td>LA&gt; - file/folder must end in LA, eg. Parks in LA OR Details.SLA but not LAMP.</td>
</tr>
<tr>
<td>;</td>
<td>Expands search by adding another allowable name/group</td>
<td><em>.pdf;</em>.txt;*.doc - files with PDF, TXT and DOC extension.</td>
</tr>
<tr>
<td>:</td>
<td>Restricts search to only those with a specified name/group</td>
<td><em>.pdf;</em>.doc:London - PDF or DOC files that have London in their name.</td>
</tr>
<tr>
<td>NOT</td>
<td>Excludes a name/group from the search</td>
<td>NOT:<em>.dll;</em>.exe;*.sys - all files except DLL, EXE, and SYS files</td>
</tr>
<tr>
<td></td>
<td>Concatenate multiple search expressions</td>
<td>*.pdf:London</td>
</tr>
<tr>
<td>&quot;</td>
<td>Used to either quote semi-colon ';' character or specify word boundary</td>
<td>&quot;LA&quot; - file/folder with the word LA in their name, eg. LA Flight details.txt but not LAMP.txt.</td>
</tr>
</tbody>
</table>

**More Examples**

**Searching For**

<table>
<thead>
<tr>
<th>DOS Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Files/folders without any extension</td>
</tr>
<tr>
<td>Only files/folders with the specific name Area</td>
</tr>
<tr>
<td>PNG, JPG, or BMP files with the word France in them</td>
</tr>
<tr>
<td>MP3 files with the word Rolling AND Stone in them</td>
</tr>
<tr>
<td>PDF files with either the word London OR Tower in them</td>
</tr>
<tr>
<td>All files that are not EXE or DLL files with the word Flower in the name</td>
</tr>
<tr>
<td>Any TXT file with a semi-colon in it</td>
</tr>
</tbody>
</table>
3.5 Scripting

FileLocator Pro supports Active Scripting to customize the search engine's file name and contents matching algorithms.

When the user starts a search FileLocator Pro:
- Looks to see if any script is active
- Creates the Active Scripting engine for each script as specified by the Prog Id entered in the 'Engine' field.
- Loads the script into the scripting engine.

Once the script is loaded FileLocator Pro will then call a specific function inside the script depending on the script type:
- If the script is a 'File Name' script the function called is 'isValidFileName' and is passed the file path and name as parameters.
- If the script is a 'Containing text' script the function called is 'isValidLine' and is passed the line number and text as parameters.

Scripts are only called if the other search criteria is satisfied, i.e. file name or containing text expressions. The functions should return a boolean true or false value to indicate if the file or line is valid or not.

Examples:

Note: Please see the "Sample Scripts" sub-folder of the main FileLocator Pro installation folder for some provided sample scripts.

Read-only script

The following example shows a sample file name script to limit the files returned to those that have the Read-Only attribute specified. Note: Other attributes could be used, e.g. use the '32'
instead of '1' to find files with Archive attribute specified.

```javascript
var objFSO = new ActiveXObject( "Scripting.FileSystemObject" );

function isValidFileName( strPath, strFileName )
{
    var bIsValid = false;
    try
    {
        var objFile = objFSO.GetFile( strPath + strFileName );
        bIsValid = ( objFile.Attributes & 1 );
    }
    catch( e ) {}
    return bIsValid;
}
```

Note that `try...catch` blocks have been used to prevent exceptions being thrown back to the search engine. If an exception occurs and is not caught by the script the search will stop.

**Folders only script**

Another example shows how to locate only folders.

```javascript
var objFSO = new ActiveXObject( "Scripting.FileSystemObject" );

function isValidFileName( strPath, strFileName )
{
    var bIsValid = false;
    try
    {
        bIsValid = objFSO.FolderExists( strPath + strFileName );
    }
    catch( e ) {}
    return bIsValid;
}
```

**NOT expression script**

Here’s an example of how to implement NOT when contents matching using JScript's own regular expression engine (the NOT expression to be matched is entered in the 'Containing text' CustomParm field on the Scripting tab):

```javascript
// An example of a NOT expression, this time using JScript's built in Regular Expression object.

var regExp = new RegExp( SearchParms.ContainingTextCustomParm );

function isValidLine( nLineNum, strText )
{
    var bIsValid = true;
    try
    {
```
bIsValid = !regExp.test( strText );
}
catch( e ) {} 
return bIsValid;
}

Note how the regular expression object is created outside of the function body so that it is only created and compiled once for any given search, although it may be called many times.

Excluding directories

Another variation of the NOT expression (see above) is for excluding certain directories from a search. For example, to exclude the Windows directory from a search the NOT expression on the path is simply 'C:\Windows'. Here's an example of how to implement a NOT when path name matching (the NOT expression to be matched is entered in the 'File name' CustomParm field on the Scripting tab):

// An example of a NOT expression on a file's pathname
// using JScript's built in Regular Expression object.

var regExp = new RegExp( SearchParms.FilenameCustomParm );

function isValidFileName( strPath, strFileName ) {
    var bIsValid = true;
    try
    {
        bIsValid = !regExp.test( strPath );
    }
    catch( e ) {} 
    return bIsValid;
}

Note the use of two '\\' to represent a single '\' in 'C:\Windows' since the backslash character is the special escape character in regular expressions.

Search Parameters Object

Scripts can access almost all the other search criteria through the object 'SearchParms'. For example, the isValidFileName script could use the Custom Parm value entered in the Scripting tab like this:

var strCustom = SearchParms.FilenameCustomParm;

SearchParms provides access to the following criteria:

CurrentFileName (String) - Currently being processed file name.

CurrentFilePath (String) - Path of currently processed file.

ContainingText (String) - Value entered in the 'Containing text' field.
ContainingTextCustomParm (String) - Value entered in the 'Custom Parm' field for containing text script.

ContainingTextRegExp (Boolean) - Indicates if the regular expression on Containing text has been switched on.

EOLUnix (Boolean) - Indicates if EOL Unix option has been switched on.

EOLMac (Boolean) - Indicates if EOL Mac option has been switched on.

Filename (String) - Value entered in the 'File name' field.

FilenameCustomParm (String) - Value entered in the 'Custom Parm' field for file name script.

FilenameExcludeExp (Boolean) - Indicates if the 'Specifies NOT expression' has been switched on.

FilenameRegExp (Boolean) - Indicates if the regular expression on File name has been switched on.

LookIn (String) - Value entered in the 'Look in' field.

MatchFilenameCase (Boolean) - Indicates if the match case option for file name has been switched on.

MatchContentsCase (Boolean) - Indicates if the match case option for the containing text has been switched on.

ModifiedAfter (Date) - Value entered in the 'Modified After' field.

ModifiedBefore (Date) - Value entered in the 'Modified Before' field.

SearchContents (Boolean) - Indicates if the search is searching contents of files.

SearchOnePhase (Boolean) - Indicates if 'One Phase Searching' has been switched on.

SearchSubFolders (Boolean) - Indicates if the 'Search Sub Folders' has been switched on.

SizeMoreThan (Integer) - Value entered in the 'Size More Than' field.

SizeLessThan (Integer) - Value entered in the 'Size Less Than' field.

### 3.6 Look In

Often the Look In field simply specifies a single folder to search through. However, the Look In field can accept much more than just a single folder location.
Types of values accepted in the Look In field:

**Single folder**  
e.g. `c:\work\doc`

**Expression**  
Expressions can be specified for individual parts of the folder paths, i.e. The expression is not on the whole path but the path parts, e.g. the regular expression `c:\usr\dev\.*\release` would match all folders called "release" two levels down from the "c:\usr\dev" folder.

**Single file**  
e.g. `c:\work\doc\file.txt`

**Multiple files/folders**  
Multiple entries are separated with a semi-colon, e.g. `c:\work\doc;c:\work\email;c:\work\logs\special.log`

**Exclusion files/folders**  
An exclusion location is identified by an exclamation sign, e.g. to exclude the audit sub folder `c:\work\doc;!c\work\doc\audit`

**Location filters**  
Filters are expressions applied against the folder for each search item to allow groups of items to be easily targeted. A filter starts with either a plus or minus sign, e.g. to exclude all the Subversion source control sub folders (named ".svn") `c:\work\source;-.svn`

or, to include only the accounting sub folders while still excluding the Subversion sub folders `c:\work\source;+account;-.svn`

**Lookup Lists**  
A lookup list is a list of locations to search, each one put on a new line, retrieved from an external file. A lookup list is identified by an equal sign, e.g. `=c:\lookup\accountsource.txt`

and the contents of the accountsource.txt file could be something like: `c:\work\source  
c:\work\tools  
+account  
-.svn`
Macros identify common locations on a Windows machine. The macros are evaluated for the host system each time the search is run, which is useful if creating search criteria that may run across a number of different machines.

$(AdministrativeTools)
$(AllLocalDrives)
$(ApplicationData)
$(ApplicationDataDrive)
$(CommonAdminTools)
$(CommonApplicationData)
$(CommonDesktopFolder)
$(CommonDocuments)
$(CommonDocumentTemplates)
$(CommonFavourites)
$(CommonMyMusic)
$(CommonMyPictures)
$(CommonMyVideo)
$(CommonProgramFiles)
$(CommonProgramsGroup)
$(CommonStartMenu)
$(CommonStartup)
$(DesktopFolder)
$(DocumentTemplates)
$(Favourites)
$(Fonts)
$(InternetCache)
$(InternetCookies)
$(InternetHistory)
$(LocalApplicationData)
$(MyDocuments)
$(MyDocumentsDrive)
$(MyMusic)
$(MyNetwork)
$(MyPictures)
$(MyPrinters)
$(MyVideo)
$(Profile)
$(ProgramFiles)
$(ProgramsGroup)
$(Recent)
$(SendTo)
$(StartMenu)
$(Startup)
$(SystemFolder)
$(WindowsFolder)
$(WindowsInstallDrive)

Application specific macros for identifying the folder and drive of the FileLocator Pro EXE:
Environment variables

Any environment variable set up for the computer/application can be used in the Look In field, e.g.

`%TEMP%;%CLASSPATH%`

could be used to search all the folders indicated by the TEMP and CLASSPATH environment variables setup for the computer.

Persistent Search Filters

When a filter is so common that it should be used for every search, such as excluding source code meta data files, it can be setup as a persistent search filter.

A persistent search filter can be any valid Look In value and when active is appended to the Look In value for every search. More information is available on the Persistent Search Filters page.

3.7 Persistent Search Filters

Location filters are often used to include or exclude certain search locations for a given search. Some filters are so common that they are desired for every search, e.g. excluding source code meta data folders. Persistent Search Filters allow the definition of such common search filters which (while active) are applied to all searches.

When one or more persistent search filters are active a red check mark is shown on the filter button:
Clicking on the filter button opens the Persistent Search Filters dialog showing the list of filters and their active status:

To change a filter double-click on the filter or to add a new one click the 'Add...' button.
A search filter is normally a location filter, such as `-archive`, but can actually be any valid Look In value. Multiple values can be semi-colon separated, e.g. `-.svn;-archive`

All active search filters are appended to a search's Look In value at time of search.

### 3.8 Unicode Support

**File System Unicode Support**

FileLocator Pro is built with the Windows Unicode libraries and therefore supports searching of the file system with full Unicode support.

**Content Searching Unicode Support**

Content searching of files processed by extensions (such as IFilters) supports Unicode searching if the underlying format supports Unicode.

Text file searching supports Unicode if the file can be identified as Unicode, either by a Byte Order Marker (BOM) or an XML encoding declaration at the beginning of an XML file. The Unicode types supported are UTF-16LE, UTF-16BE, and UTF-8.

Binary searching of non-identifiable file types, such as EXE etc., is carried out using an ASCII search unless otherwise specified in the UTF-8 Default Format settings.

### 3.9 Search within Search

Sometimes it is preferable to limit subsequent searches to the result list or a subset of the result list. FileLocator Pro supports searching file subsets through two menu options:

File - Search Result List  Searches all files listed in the result list.
File - Search Current Selection

Searches all files that are currently selected in the result list.

Search within search works by creating a new search and pre-filling the Look In field with all the files to be searched.

3.10 Outlook PST Archive Searching

FileLocator Pro is able to search through all PST archives from the older Outlook 97 right up to the latest versions. Also, since FileLocator Pro 'understands' the actual underlying file format it doesn't require Outlook to be installed and can also bypass the password protection and encryption present on most PST files. However, since FileLocator Pro is not dedicated to searching only PST files it can appear a little confusing as to how PST searching works. The overwhelming temptation is to use the file name field to identify the PST archive, e.g. *.pst, instead of the item within the PST archive, such as an email, that you are looking for.

FileLocator Pro basically treats each individual Outlook item, i.e. an email, contact, calendar item etc., within a PST file as a separate file. The 'file name' for each item is dependant on the item type, e.g. for email messages the email's subject is used as the file name. So to search a PST file follow these steps:

1. Specify the location of the PST files (or a specific PST file) in the 'Look in' field

The location can include Outlook folders within the PST files.

2. Switch on PST Searching in the Options Tab

Without the PST format switched on the PST archive is treated as a normal file and simply searched using its binary content. If the 'Search attachments' option is checked then the
attachments for each email are also searched, otherwise only the main email body is searched.

3. Use the 'File name' field to search by email subject and 'Containing text' to search by email content.

![Search result for email subject](image)

Each result is shown as a text file, which can be copied or dragged to another location. The results can also be explored using the Internal Viewer just like normal results.

**Searching multiple PST files**

The above example shows how to search through a single PST file but FileLocator Pro can search multiple PST files in a single search. Instead of specifying a single PST file in the Look In field simply specify the folder (or the root of the sub-tree) where the PST files are located. To ensure that only pst files are searched add the location filter +.pst, e.g.

```plaintext
C:\Folder\Email;+.pst
```

To export the email and/or attachments to separate files you can copy/paste or drag/drop the required files to a location in Explorer or use the Bulk Copy feature.

### 3.11 MSG File Searching

MSG file searching is activated through the Options tab.
When activated FileLocator Pro treats MSG files as containers of other files, i.e. MSG files become 'virtual' folders. If the 'Search attachments' option has been checked each attachment will appear as a subfolder to the MSG file (the .msg file itself represents the email body).

To export the email and/or attachments to separate files you can copy/paste or drag/drop the required files to a location in Explorer or use the Bulk Copy feature.

**Example 1: Searching MSG files by Subject and Contents**

The example below shows how the 'File name' field is used to search the email Subject while the 'Containing text' field is used to search the email body. Note that the File name field has been switched to Boolean search for more flexible searching.

**Example 2: Searching MSG files for image attachments**

This example uses the 'File name' field to search for attachments that are either PNG, JPG, or BMP files. Note the use of a Location Filter to restrict the results to only those files that are attachments of .msg files, i.e
Important: Make sure that Search attachments has been checked in the Options Tab.

3.12 Export Results

For exporting results FileLocator Pro provides both the Reports functionality and the File -> Export Results menu option. The Export functionality has three main sections:

- Bulk Copy
- Export Search Results
- Save Session/Workspace

**Bulk Copy**

Bulk Copy allows the user to copy found files to a folder or a ZIP file.
There are various options that effect how the files are copied:

**Files to copy**

- **All files**: All files currently in the results are exported.
- **Selected files only**: Only the currently selected files are exported.

**Folder structure**

- **Flat**: All files are copied to the same folder without any folder structure.
- **From root**: Files are copied into a copy of the source folder structure taken from the root folder for each file.
- **From first common folder**: Files are copied into a copy of the source folder structure taken from the first common folder for all files.

**Existing file**

- **Overwrite**: Overwrite any files that have the same name in the destination folder.
- **Append with sequence number**: Do not overwrite existing files, instead append a sequence number to the file to give it a unique name in the destination folder.
- **Don't copy**: Don't copy the file if an existing file with the same name is already in the destination folder.
Email items

Copy only individual found items

Copy each item from the results as separate individual files.

(applies only to emails)

Copy parent MSG file

If an item in the results is a child item of a message (e.g. an attachment) this option forces the parent MSG file to be copied instead of the found child item. If multiple child items have the same parent MSG file only one file is copied.

Copy file attributes

Copy the file attributes and file times.

Export Search Results

The Export Search Results option allows the results, i.e. the file names and/or the found text, to be saved either to the clipboard or to a specified file.

The results can be saved in a variety of formats:

Comma separated table of results (best format for saving results for subsequent
separated (CSV)

HTML

Tab separated

Text

XML

**Custom formatting**

For advanced formatting XSL transforms can be used to customize the output format. XSL transforms are a text based language for defining data transformations and can be used to convert FileLocator Pro’s XML data into a desired format. Sample transforms are included in the Sample Transform subfolder and include:

- **Contents_NoLineNumbers.xsl**
  Exports just the found contents with no other information included, such as file data or line numbers.

- **FileName_Only.xsl**
  Exports just the file name without any path information, each file is exported on a separate line.

- **FullName_FileSizeBytes.xsl**
  Exports the full file name (ie with path) along with the size in bytes of the file.

- **Hash_Separated.xsl**
  Exports the file name information separated by the '#' character.

- **Hits_Only.xsl**
  Exports just the hits found in a search, i.e. without any file information or extra found text information. Useful for regular expression searches to output text that matches a given expression, e.g. extracting telephone numbers, or email addresses. This transform differs from **Unique_Hits_Only.xsl** in that it will output all hits of the found text, ie it will output duplicate hits.

- **HTMLTransform.xsl**
  Exports the data in a format very similar to the standard HTML export.

- **Unique_Hits_Only.xsl**
  Exports just the hits found in a search, i.e. without any file information or extra found text information. Useful for regular expression searches to output text that matches a given expression, e.g. extracting telephone numbers, or email addresses. This transform differs from **Hits_Only.xsl** by only outputing the unique hits, i.e. it only outputs the value of the hit once regardless of how many times it may actually be found.

- **xcopy.xsl**
  Generates XCOPY statements to copy from one drive to another preserving folder structure.

  For each file an XCOPY command is generated with only the drive letter replaced in the source path. e.g.
C:\folder1\folder2\filename1.txt

generates:
    xcopy "C:\folder1\folder2\filename1.txt" "E:\folder1\folder2\*"

NOTE: The XSL file needs to be edited to change target from E: to desired target drive. Does not work with UNC paths, e.g. \server1\folder1\folder2

Save Session/Workspace

The session/workspace saving option is another method of saving Sessions and Workspaces.

3.13 Custom Extensions

While FileLocator Pro can search many popular formats there are many other niche formats that it doesn't know how to convert to text format for searching. However, FileLocator Pro does provide a way to integrate an external program for converting the given format into text.

Example

Say, for example, a company called ThirdParty has a program that converts files of type .ABC to text, and is run:

    "C:\Program Files\ThirdParty\SomeApp.exe" "E:\Files\intro.abc" "E:\Out\intro.txt"
To enable FileLocator Pro to use the program to read .ABC files follow these steps:

**Step 1. Create an XML file to add the format**

Using an editor, like NotePad, create an XML file using the format shown below, replacing the highlighted entries with the appropriate values, e.g.

```xml
<?xml version="1.0"?>
<InterpreterConfig xmlns="http://www.mythicsoft.com/FileLocator">
  <displayname>ABC</displayname>
  <uniquename>http://www.mythicsoft.com/abcformat</uniquename>
  <progid>Extensions(ConvertToTextCommand)</progid>
  <setup>"C:\Program Files\ThirdParty\SomeApp.exe" "$InputFile" "$OutputFile"

<filetypes><filetypes>abc</filetypes>
<filetype>textconverter</filetype>
<active>no</active>
<safemode>no</safemode>
<useisfilter>no</useisfilter>
<nonreglibrary>extensions.dll</nonreglibrary>
</filetypes>
</InterpreterConfig>
```

Save the file, e.g. abc.xml.

**Step 2. Copy the XML file into the plugin cfg folder**
Step 3. Activate the extension

Make sure **Office/PDF documents** is checked in the **Enhanced/PDF documents** section of the Options tab.

Step 4. Test the extension

Run a simple search using a small group of test files.
Wizards

Part IV
4 Wizards

To help the user with some of FileLocator Pro's complex features two wizards are available:
- Search wizard (Basic interface only)
- Expression wizard (Advanced interface only)

4.1 Search Wizard

Search Wizard walks the user through entering the basic search criteria with examples and performance tips.

The user is presented with three pages asking for the following pieces of information:
- Name of the file.
- Contents of the file.
- Location of the file.

On the final page if the ‘Start the search automatically’ check box is checked the search will begin when the user clicks Finish.

4.2 Expression Wizard (Expr Wiz)

Expression Wizard walks the user through creating a basic regular expression. The Expression Wizard can be used for building expressions to search for either the file name or the file contents.

Note: The term 'string' is used as a generic term referring to either the file name or file contents. Basically a string is any word or group of words which, if you think about it, is exactly what a filename is.

First page (Introducing the Expression Wizard)

The first page of the wizard is just an introduction for the Expression Wizard with notes for the particular type of expression being built (i.e. a note for file name and a different note for file contents).

Second page (Create the Expression)

The second page is where all the work takes place. It should look something like this:
Shown above is an example expression for a file name and will find any file name that includes the phrase 'MyFile' followed by any character followed by any number and finally ending with '.txt', i.e. a text file. Therefore it would find files such as 'Dave_MyFile54.txt' or 'MyFile_Num2.txt' but would not find the files 'MyFile.txt', 'A_MyFile34a.txt', or 'MyFile34.doc'.

If you think back to how regular expressions work the layout of the Expression Wizard should become apparent. A regular expression is built out of a number of 'entries'. There is one beginning entry, multiple main body entries, and one final end entry. Each entry has a specific type:

- **Don't know.** The value of the entry is unknown. e.g. The beginning of the file name may be unknown.
- **Any character.** Matches to any single character.
- **The character.** Matches to a character entered by the user in the Text field.
- **Any one of these characters.** Matches to any one of the characters entered by the user in the Text field.
- **Any character except these.** Matches to any character except the ones entered by the user in the Text field.
- **The phrase.** Matches to the specific phrase entered by the user in the Text field.
- **Space(s).** Matches to a space.
- **Any numeric character.** Matches to any numeric character, i.e. 0-9.
- **Any text character.** Matches to any alphabetic character, i.e. a-z.
Once the user has specified the entry type and the text, if required for the entry type, then the user needs to specify the number of occurrences of that entry:

- Zero or once. The entry type may or may not be there but if it is then it maps to one occurrence.
- Zero or many times. The entry type may or may not be there but if it is then it can map to one or more occurrences.
- Once only. The entry type must be there and is mapped to only one occurrence.
- Once or many times. The entry type must be there and can map to many occurrences.

The Expression Wizard does not currently provide all the functionality of regular expressions. However, if the user knows how to construct their own regular expressions they can enter the any part of a regular expression by adding an entry of type 'The phrase' and putting the regular expression in the Text field.

The entries can be rearranged using drag and drop.

Third page (Warning: Special characters entered)

When the user has finished entering the regular expression the user can normally press Finish to feed the regular expression back to the main search window. However, if the user has entered any special characters (i.e. characters that have special meaning in a regular expressions) in the Text field for any entry then the Finish button actually changes into a Next button and the user is warned that special characters were entered. The user then has two choices, either to have FileLocator Pro convert the special characters so that they will not be treated as special (default) or to leave the expression as it is because the user specifically entered special characters.

In the screen shot shown above you can see that this is exactly what happened with the example. The '.' in '.txt' is the wildcard character and therefore instead of a Finish button there is a Next button. If you look at the resulting expression you'll see that the '.' has been prefixed with the '\' escape character. This happened automatically because of the default action, which is to convert the special characters so that they are not treated as special. This page (i.e. the third page) allows the user to turn that default action off.
Regular Expressions

Part V
5 Regular Expressions

FileLocator Pro provides extensive regular expression support using either a Perl compatible syntax or a classic syntax.

Perl compatible syntax

Perl compatible regexp syntax is based around the Boost regular expression engine and includes not only the functionality of the 'classic' regular expression engine but also additional Perl style expression enhancements detailed here:
Boost: Perl Regular Expression Syntax

Classic syntax

FileLocator Pro’s classic regexp syntax supports the most commonly used regular expression elements, which is the subject of this section. To continue go to the Quick Start section.

5.1 Quick Start

FileLocator Pro includes a regular expression engine as one of its Expression Types. Regular expressions (some times shortened to regexp) provide a concise language to describe exactly what to search for. In very basic terms you can split an expression into two parts:
- what you are looking for
- the number of occurrences you want to find of it.

Let's say I want to find all files named abc, abbc, abbbc, abbbbc etc. So basically I want to find all files that begin with 'a' followed by one or more 'b' then followed by 'c'. The expression would be: 

ab+c

Breaking that apart we read:
- find one occurrence of 'a'
- find at least one occurrence of 'b' (the '+' indicates 'one or more')
- find one occurrence of 'c'

The characters that specify the number of occurrences are: 
+ one or more
* zero or more
? zero or one

So ab?c would find any file named abc or ac (i.e. there can be zero or one 'b').

A very important regexp character is the period '.' (the wildcard character) because it matches to ANY character. So a.c would match to aac, abc, acc, adc, aec,afc, a1c, a6c etc. And if we combine that with an occurrence character we can start producing some useful expressions:
dave.*vest

breaks down to:
- find one occurrence of 'd'
- then one occurrence of 'a'
- then one occurrence of 'v'
- then one occurrence of 'e'
- then zero or more occurrences of ANY character
- then one occurrence of 'v'
- then one occurrence of 'e'
- then one occurrence of 's'
- then one occurrence of 't'

and so matches to 'davevest', 'dave vest', 'dave is wearing a vest'.

There are other regexp characters and tricks on the following pages. More detail on regular expressions.

### 5.2 What is a regular expression?

A regular expression is a way of describing a group of words (referred to as a 'string'). It allows a user to build a complex set of rules to describe exactly what characteristics the string should have. While this documentation uses the word string you can think of a string as either a filename when searching for a filename using regular expressions, or as text in a document when using a regular expression to search the contents of files.

The simplest regular expression is a sequence of letters, numbers, or both. Such a regular expression matches any string that contains that sequence. For example:

```
The regular expression 'foo' matches any string containing 'foo'. So if you wanted to find a file with the letters 'fred' in it the regular expression would simply be 'fred'.
```

This is obviously a very simple example but you can express complicated rules. For example:

```
To find a file that begins with 'July' or 'August' followed at some point by 'Document' or 'Documents' followed at some point by a number and has a '.doc' extension the expression would be: "^(July|August).*Documents?.*[0-9]+.*\.(doc)\$"
```

This expression would find:
- JulysPrivDocuments_23.doc
- August Documents Num5a.doc
- etc.

Don't worry if the expression above looks confusing because it is. That is why FileLocator Pro includes an Expression Wizard to guide you through building regular expressions using common English terms.

For more information please read regular expression basics.

Note: You can test out your expression against the FileLocator Pro regular expression engine through the 'Tools' -> 'Regular Expression Tester...' menu option.
5.3 Regular expression basics

Regular expressions use special characters (also known as regular expression operators) to specify rules for strings. A summary of these characters are:

- ^ Beginning of string
- $ End of string
- . Any character
- [ Start of character list
- ] End of character list
- ( Start of expression group
- ) End of expression group
- | ORs two expressions
- \ Escape character
- * Preceding expression occurs zero or more times
- ? Preceding expression occurs zero or one times
- + Preceding expression occurs one or more times
- { Start of bounded repeat
- } End of bounded repeat

5.4 *, ?, + (Occurrence characters)

Specifies the number of occurrences of the preceding character or group. In a regular expression there are four possible choices when trying to specify how many occurrences the regular expression should match to:

- Zero or one, the '?' character.
- Zero or many, the '*' character.
- One or many, the '+' character.
- Exactly one, the character itself not followed by any occurrence character.

For example:

If you entered the filename as the expression 'complaint ?doc' it would find all files that had the word 'complaint' followed by zero or one space followed by 'doc'. Therefore it would find files such as 'my complaint.doc.doc' and 'mycomplaineddoc.txt', but would NOT find files such as 'my complaint_doc.doc' or 'my complaints doc.doc'.

If you entered the filename as the expression '"my,"doc$' it would find all files that began with the word 'my' followed by zero or more characters ending with 'doc' (note the use of '"' beginning of string, ',' any character, and '$' end of string special characters). Therefore it would find files such as 'my_note.doc', 'my_owndoc', and 'my_specialfile.doc' but would NOT find 'my_note.txt', 'thisis_my_note.doc'.

If you entered the filename as the expression '_file[0-9]+' would find all files that had the word '_file' followed by one or more numbers (note the use of [''] and ']') character list
special characters). Therefore it would find files such as 'my_file245.doc' and 'the_file0023.txt' but would NOT find 'a_file_34.txt' or 'some_file 009.txt'.

### 5.5 \ (Escape character)

Escape character is used to suppress the special meaning of other special characters.

For example:

The expression 'Cost$' will match a string ending with 'Cost' whereas the expression 'Cost$' will match a string that contains 'Cost$'. As you can see the escape character suppressed the special meaning of the '$' end of string character.

The expression 'file.txt' will match a string that contains 'file' followed by any character followed by 'txt', whereas the expression 'file\.txt' will match a string that contains 'file.txt'. This time the escape character suppressed the meaning of the special character '.' any character.

Finally, the expression to actually search for the '\' character is preceded with the '\', i.e. suppress the escape character, e.g. to search for '3\4' use the expression '3\4'.

### 5.6 | (Expression OR)

Use the | when either one expression or another will do.

For example:

Both the expressions '(stabilised|stabilized) condition' and 'stabilised condition' will match 'stabilised condition' and 'stabilized condition'.

'(1|2|3) (person|people)' will match '1 person' and '2 people' and '3 people' but will not match '4 people' (it will also match '2 person' etc.). Note: this expression could have also been expressed using a character list.

### 5.7 (...) (Expression group)

Parentheses are used for grouping in regular expressions as in arithmetic. They are often used with the '|' OR functionality to group alternatives.

For example:

The expression '12 Mar(ch)? 2000' would find the string '12 March 2000' and '12 Mar 2000'. Note the use of the '?' zero or more occurrence character.
If you entered the filename as the expression "^myfile\.(txt|doc)$" it would find any file that whose name was 'myfile.txt' or 'myfile.doc'. Note the use of the '^' beginning of the string character, the '\' escape character to treat the '.' in '.txt' literally, and the '$' end of the string character.

5.8  […] (Character lists)

Specifies a list of characters that are valid in the string. Characters can be listed individually or a range of characters can be indicated by giving two characters and separating them by a '-'. For example, '[abc]' will match any of the characters 'a', 'b', or 'c'; this is the same as '[a-c]', which uses a range to express the same set of characters.

You can match the characters not within a range by complementing the set. This is indicated by using a '^' as the first character in the list (note: this is the same character as the beginning of string character). For example, '[^5]' will match any character except '5'.

Multiple ranges are allowed. E.g., the list '[A-Z0-9]' is a common way to express the idea of "all alphanumeric characters." To include one of the characters '!', ']' or '^' in a character list use the '\' escape character.

For example:

The expression '[0-9]+' will find any number in a string (note the use of the '+' occurrence character).

The expression '[0-9]+/[0-9]+/[0-9]+' is a expression that could be used to search for dates within a string. Although it does not check the validity of the date it is unlikely that any other string would be match that pattern.

5.9  . (Wildcard character)

Matches any single character. It is used to specify an unknown portion in the string. Because the period is used in almost all Windows file names it is very common to forget that it has a very special meaning in regular expressions. If the user wishes to use the period literally in a search it must be preceded by the '\' escape character. For example:

If you entered the filename as the expression 'mydoc.doc' it would find any file that had 'mydoc' followed by any character followed by 'doc'. Therefore although it would find 'mydoc.doc' it would also find 'mydoc1.doc' and 'mydocXdoc'. If you wanted to just search for 'mydoc.doc' the expression would be 'mydoc\.doc'.

Example:

If you entered the filename as the expression "^mydocument\.\txt$" it would find any file that began with 'mydocument' followed by exactly any two characters and ended with '.txt' (note the use of the '^' beginning of the string character, and the '\' escape character to treat the '.' in '.txt' literally, and the '$' end of the string character). Therefore it would find files such as 'mydocument_1.txt' and 'mydocument1a.txt' but would not find files such as
The expression 'my.*\..txt' would find any file that includes 'my' followed by any number of characters followed by '.txt' (note the use of '*' to specify zero or more occurrences). Therefore it would find files such as 'my_examples.txt' and 'this is my file.txt.doc' but would not find files such as 'myfile.doc' and 'm_y_file.txt'.

5.10 $ (End of string)

Matches the end of a string (to match the beginning of a string use '^').

For example:

If you entered the filename as the expression 'complaint\.doc$' it would find all files that ended with 'complaint.doc' (note the use of the '\' escape character for the '.'). Therefore it would find files such as 'bank_complaint.doc' and 'my_complaint.doc' but would not find files such as 'some_complaint.txt' or 'some_complaint_2.doc'.

5.11 ^ (Beginning of string)

Matches the beginning of a string (to match the end of a string use '$').

For example:

If you entered the filename as the expression '^win' it would find all files that began with the name 'win'. Therefore it would find files such as 'winhelp.exe' and 'windows_questions.txt' but would not find files such as 'Copy of winhelp.exe' and 'some_winfile.txt.'

5.12 \{n,m\} Bounded repeats

Whereas the '+' or '*' characters will repeat the previous section as much, or as little, as required it is possible to specify a specific number of required repeats using the '{' and '}' characters.

- a{n} matches 'a' repeated exactly n times
- a{n,} matches 'a' repeated n or more times
- a{n,m} matches 'a' repeated between n and m times inclusive.

For example,

[0-9]{4,6} matches any number between 1000 and 999999

5.13 Other Examples

AND
Although the regular expression engine does not directly support the concept of the boolean AND operation it can, in a limited way, be simulated. e.g.

To search for a line containing 'error' AND 'log' the expression would be '((error.*log)) (log.*error)'. Basically the different possible combinations have been combined, i.e. find 'error' followed by 'log' OR find 'log' followed by 'error'. While this works for a small number of words it does become infeasible with a larger number of words.

Obviously the simplest way to specify an AND style expression is to use the Boolean expression engine.

**Email addresses**

Regular expressions are great for validating or searching for patterns such as email addresses. The following regular expression should match most email addresses:

```
\b[A-Z0-9._%+-]+@[A-Z0-9.-]+\.[A-Z]{2,4}\b
```
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