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## Introduction

The File Investigator Engine is the core program that identifies a file by its contents rather than filename extension. You might assume that it has to be slow if it opens every file, but it is almost as fast as any other program that just reads the disk directory. Most applications only look at a file's extension when identifying or loading it. If the file has the wrong extension or the application just doesn't recognize the extension, then you are out of luck. Unless you have an application that uses the File Investigator Engine.

This engine also extracts valuable information out of many different types of files. Information like: image resolutions, sound file sampling rates, document titles, and much more. It then provides general information about that particular file type/format.

The MS Windows version of this engine is a Dynamic Link Library (DLL). [File Find](#), [Properties](#) and [Directory](#) applications are bundled with the current version of the engine. Future upgrade versions of the engine will include more file type patterns to recognize more file formats.

A few [File Investigator Preview](#) DLLs are also included with the engine. When you select the Preview tab in the Properties dialog, one of these DLLs will display a preview of the file. For Microsoft multimedia files (.AVI, .WAV, .MID, .RMI), the Multimedia Previewer DLL will give you the ability to play the file. For text files and files that include embedded text, the Text Previewer DLL will display the file. The File Find program can also make use of the Hexadecimal Previewer DLL to display files. These DLLs are similar to the plug-in programs provided for Internet browsers. They process a file in the background, while you are viewing other details in the dialog. The file data, image, etc. is gradually displayed in a preview window, as the file is being processed.

There are many uses for this kind of software. One is to identify a file that a friend or colleague gave you that Windows doesn't recognize. The Properties dialog can help you correct a wrong file extension (on the [Details](#) tab) or tell you where to find software to view, edit and/or convert the file (on the [Background](#) tab).

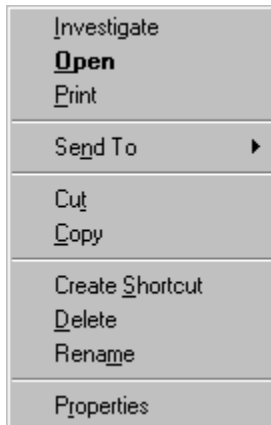
A second use is to quickly look at a file's details when searching for a specific file, without having to wait for an edit program to open and load the entire file.

## How to use File Investigator

The File Investigator programs run on MS Windows 95/98/2000 & NT 4.0.

**Context menu:**

Right click on any file or folder. File Investigator will appear on the local menu.



**Desktop:**

Drag and drop any file onto the File Investigator (Drag & Drop) icon on your desktop.



Investigator File Find icon.

or Double click on ,or drag and drop any folder onto, the File



**Windows command prompt:** Run FIWDIR [path]filespec

**DOS prompt:** Run FIPROP [path]filename [/Q]

or Run FIFIND [path]

The FIPROP.EXE program returns an error level that indicates which type of file it identified. This same index value is provided in the last column of the file types list on the Setup tab of Properties, and the last column of the File Find list view.

Adding the /Q parameter tells FIPROP.EXE not to display anything on the screen and quit/exit as soon as the file has been identified.

## **File Investigator Programs**

File Find and Properties dialog user interface (UI) programs, a Directory console program (Windows command line) and a few file viewer Dynamic Link Librarys (DLLs) are bundled with the File Investigator engine. The File Investigator File Find program is used to identify many files at a time, and search for files by their contents. The File Investigator Properties program is used to provide background information on a selected file. Which should eliminate hours wasted trying to find files or finding a way to read a mysterious file that is required before they can go on with their work. File Investigator Directory program combines all of the functionality found in File Investigator File Find with the command line user interface provided by the MS DOS DIR command. Future upgrade versions of the engine will include more file type patterns to recognize more file formats.

The File Investigator Text Preview DLL is provided to help people find text embedded in a file. This can help to identify a file's format type when the engine doesn't recognize it yet. It can also help to see the content of a document without waiting for a word processor to start up then open the file.

The File Investigator Hexadecimal Preview DLL is provided to help programmers view the raw header of files as hexadecimal values.

The File Investigator Multimedia Preview DLL is provided to play Microsoft multimedia files (.AVI, .WAV, .MID, .RMI).

## **File Investigator Properties for Windows**

This program was designed to exercise the File Investigator Engine on a single file, and provide a familiar user interface (UI). The UI is similar to the Properties Dialog that MS Windows 95/98/2000/NT 4.0 uses.

It provides four tabs:

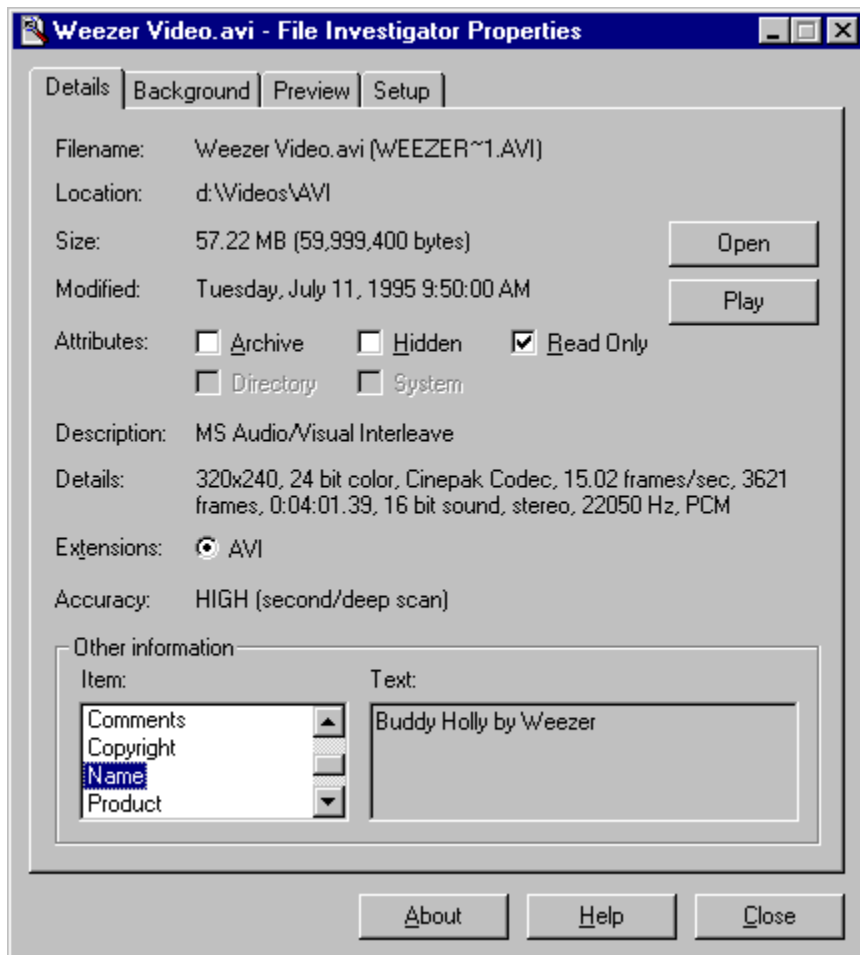
**Details**

**Background**

**Preview**

**Setup**

## Details Tab



This tab displays all of the changeable attributes of the file and the information that the File Investigator Engine was able to extract from the file.

<b>Filename</b>	Displays the long (Windows) filename, as well as the DOS filename in parenthesis if it is different.
<b>Location</b>	Displays the Path/Directory/Folder that the file is in.
<b>Size</b>	Displays the size of the file in Kilo Bytes and bytes in parenthesis.
<b>Modified</b>	Displays the date that the file was last updated/written to.
<b>Attributes</b>	Displays the Archive, Hidden, Read Only, Directory and System attributes.
<b>Description</b>	Displays the name of the file's format/type.
<b>Details</b>	Displays the number values that were extracted from the file along with their respective units.
<b>Extensions</b>	Displays the file extensions that File Investigator recommends to use with that file format.
<b>Accuracy</b>	Displays a rating of how accurate File Investigator was at identifying that file.
<b>Other information</b>	Displays a list of text strings that File Investigator found in the file.

### Attributes

**Archive** Indicates whether the file needs to be backed up.

<b>Hidden</b>	Can be toggled on/off. Indicates whether to hide the file from most software.
<b>Read Only</b>	Can be toggled on/off. Indicates whether to protect the file from being modified or deleted.
<b>Directory System</b>	Can be toggled on/off. Indicates whether the file is really a folder/directory. Indicates whether the file belongs to the operating system.

### **Extensions**

Displays the file extensions that File Investigator recommends to use with the file being investigated.

A file extension is an abbreviated word added to the end of a file's name to identify its format or type on IBM PC Compatible operating systems (MS DOS, MS Windows, OS/2, etc.). Most software requires a file to have the correct extension before it can be opened. Files often lose their correct extension when they are copied over the Internet, from one operating system to another (ex: Mac to PC), or over modems. When you select an extension that the file is not using, then the file is immediately renamed to use the new extension.



## Accuracy

Displays a rating of how accurate File Investigator was at identifying a file. 100% certainty is impossible, because text files and headerless binary files can mimic any file format.

<b>High</b>	The file was identified from the pattern database, then scanned deeper to confirm the result. (99% certainty)
<b>Medium</b>	The file was scanned once and identified from the pattern database. (75% certainty)
<b>Low</b>	Only the file extension was matched. (25-50% certainty, depending on the number of file types that use the extension)
<b>None</b>	The file was not identified.

## Platforms

Lists the computers/operating systems that this file is associated with.

<b>Amiga</b>	Commodore 32 bit computer system that uses GEM Desktop for a graphical user interface.
<b>Atari</b>	Atari 8 bit computer system (models: 400, 800, xxxx XL) with a command line user interface or a 32 bit computer system (models: xxx ST) that uses GEM Desktop for a graphical user interface.
<b>IBM OS/2</b>	International Business Machines Operating System. The 32 bit successor to IBM PC DOS. Originated by a joint venture with Microsoft.
<b>IBM PC Compatible</b>	A computer that is designed to work with the same software as the original IBM PC computer.
<b>Macintosh</b>	Apple 32 bit computer system with a graphical user interface.
<b>MS Windows 3.x</b>	Microsoft 16 bit graphical user interface, designed to run on top of a MS/PC DOS operating system. Runs on IBM PC Compatibles. Versions 1.x and 2.x are too old to be supported.
<b>MS Windows 95/98/NT</b>	The 32 bit (95/98 is 16/32 bit) successor to MS Windows 3.x. Windows 95/98 still runs over a version of MS DOS that it includes. Windows NT is an operating system that includes the 3.x (NT v3.xx) or 95/98 (NT v4.xx) graphical user interface.
<b>MS/PC DOS</b>	Microsoft/Personal Computer Disk Operating System. The successor to the CP/M operating system. Command line based system similar to UNIX operating systems.
<b>Sun OS</b>	An operating system designed to run on UNIX computer systems. Uses a Command line and/or Motif graphical user interface.
<b>UNIX</b>	A type of command line operating system that is available from many different companies to run on specific types of computers. They are not necessarily compatible with each other.
<b>Unknown</b>	Either the file was not identified or it is unknown where the file format comes from.

## Storage

Lists the method(s) used to store the data in the file format.

<b>Archive</b>	One or more files stored, and possibly compressed, in a single new file.
<b>Binary</b>	Data is stored in patterns of ones and zeros, unrecognizable to text editors or viewers.
<b>BitMap/Raster</b>	An image stored as colored dots.
<b>Digital Audio</b>	A sound stored as numbers sampled from an analog wave form in very small time increments.

<b>Music Notes</b>	A musical segment stored as numbers or commands that represent standard musical notation.
<b>Text</b>	Data is stored using common letters and numbers to represent words and/or values.
<b>Translated</b>	Data is converted to a different format for a different computer system, language or for transporting the file.
<b>Unknown</b>	Either the file was not identified or details about its format are not totally known to the File Investigator Engine.
<b>Vector</b>	An image stored as commands for drawing colored lines and geometric shapes.

## Content

Lists the type(s) of data that are normally stored in a file of that format/type.

<b>Animation</b>	Series of images meant to be displayed as a movie.
<b>Database</b>	Organized list of data.
<b>Database Hybrid</b>	Database that contains more types of data than just letters and numbers.
<b>Document</b>	Text file that includes formatting information.
<b>Font</b>	Instructions for displaying and/or printing letters in a specific style.
<b>Game Data</b>	Saved game or game demo file.
<b>Graphic Image</b>	Picture.
<b>Graphic Metafile</b>	Picture that includes text.
<b>Hypertext</b>	Text file that contains links to jump around in the file easily.
<b>Hypermedia</b>	Multimedia file that contains links to jump around in the file easily.
<b>Icon</b>	Small picture meant to represent a specific type of file or a program option.
<b>Library of Functions</b>	Collection of compiled program parts meant to be used by a separate program.
<b>Macro</b>	Series of commands/mouse movements/keyboard keys collected to automate an often performed task.
<b>Program Data</b>	Data required for a specific program to function properly.
<b>Program Executable</b>	Program that can be executed/run.
<b>Raw Printer Data</b>	Print job that was saved to a file, rather than sent directly to a printer.
<b>ROM/RAM Image</b>	Program or data segment that was captured from a ROM chip or a computer's RAM. Often saved to a file to flash to other EPROM (Erasable Programmable Read Only Memory) or EEPROM (Electronic EPROM) chips.
<b>Shortcut/Link</b>	File that points to a different area on a computer disk, and performs a specific action.
<b>Sound</b>	Set of commands or digital samples that can be used to produce sound from a computer.
<b>Sound Metafile</b>	Sound file that includes other type of information, like text, images, etc..
<b>Source Code</b>	Text file that contains commands that perform a specific task, when compiled and linked or interpreted.
<b>Spreadsheet Template</b>	Matrix of cells that hold text or number values. File that guides a program in creating and formatting a specific type of document.
<b>Text</b>	File that contains letters and numbers with enough formatting to indicate where lines end, tabs are placed and pages end.
<b>Text Hybrid</b>	Text file that contains more types of data than just letters and numbers.
<b>Unknown</b>	The content of the file is unknown, because it is an archive, directory/folder or could not be identified.
<b>Virtual Environment</b>	Instructions for constructing a moving image that mimics a real world setting.

**Virus**

File that has been infected with a virus.

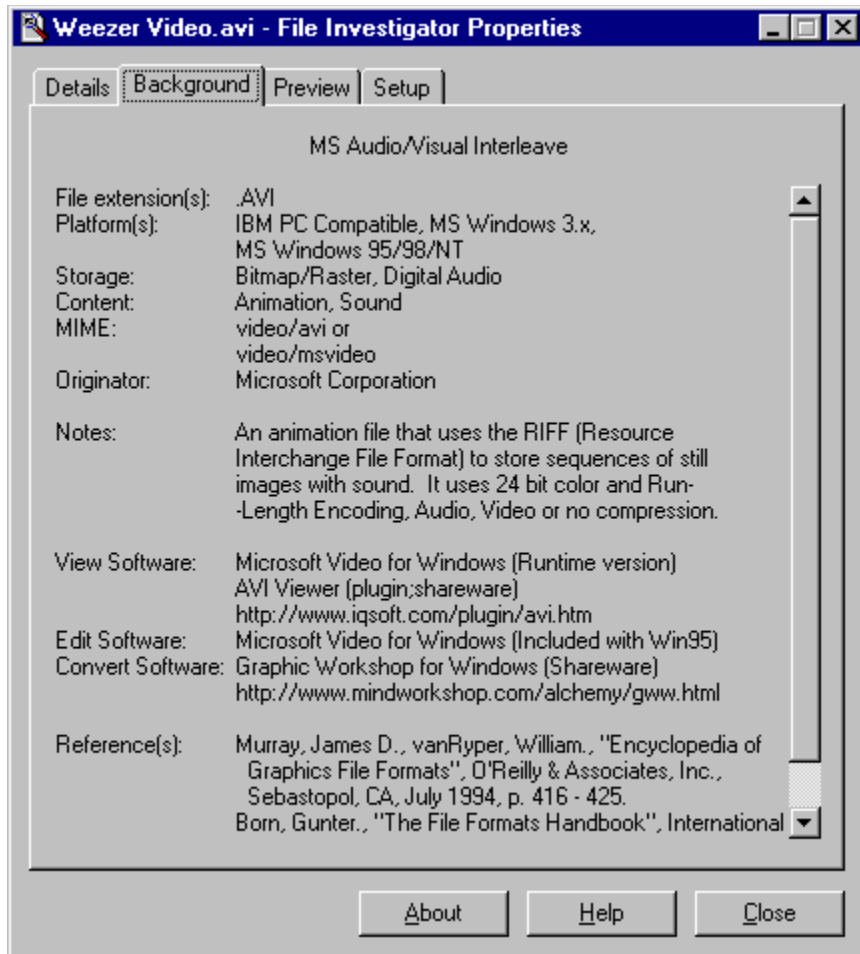
**Other Information**

Displays a list of text strings that File Investigator found in the file. On the left, there is a scrollable list of string titles. When a title is highlighted, the text string is displayed on the right.

**Common titles:**

Artist  
Author  
Comments  
Company  
Compiler  
Compressor  
Copyright  
Date Created  
Description  
Display Name  
File Name  
File Version  
Instrument  
Internal Name  
Keywords  
Lyric  
Mac Creator  
Mac Type ID  
Miscellaneous  
Name  
Product  
Product Version  
Program Name  
Software  
Source  
Subject  
Text  
Title

**Background Tab**



This tab displays all of the information that the File Investigator Engine has on the file format/type.

<b><u>File extension(s)</u></b>	File extensions commonly used for that file type/format.
<b><u>Platform(s)</u></b>	A list of computer and operating systems that the file type/format is known to work on.
<b><u>Storage</u></b>	A list of the methods used to store data in that file type/format.
<b><u>Content</u></b>	A list of the types of data that are usually stored in a file of that file type/format.
<b><u>MIME</u></b>	One or more Internet identification text strings commonly used with that file type/format.
<b><u>Originator</u></b>	The name of the company and/or individual who created the format. Sometimes an originating date is also displayed, in parenthesis.
<b><u>Notes</u></b>	Description of the type(s) of information that the format is capable of storing. Occasionally includes other background information.
<b><u>View Software</u></b>	List of programs that you can use to view this type of file. "(Shareware)" indicates that the program is free, and "(Purchase)" means that the software must be paid for. A URL (Internet web site) is provided for most software.
<b><u>Edit Software</u></b>	List of programs that you can use to edit or open this type of file. "(Shareware)" indicates that the program is free, and "(Purchase)" means that the software must be paid for. A URL (Internet web site) is provided for most software.
<b><u>Convert Software</u></b>	List of programs that you can use to convert this type of file to a different file format. "(Shareware)" indicates that the program is free, and

**Reference(s)**

"(Purchase)" means that the software must be paid for. A URL (Internet web site) is provided for most software.

A list of books and documents that were used in researching the format or file type. They should be helpful to a programmer who needs to write software that uses the format.

**MIME**

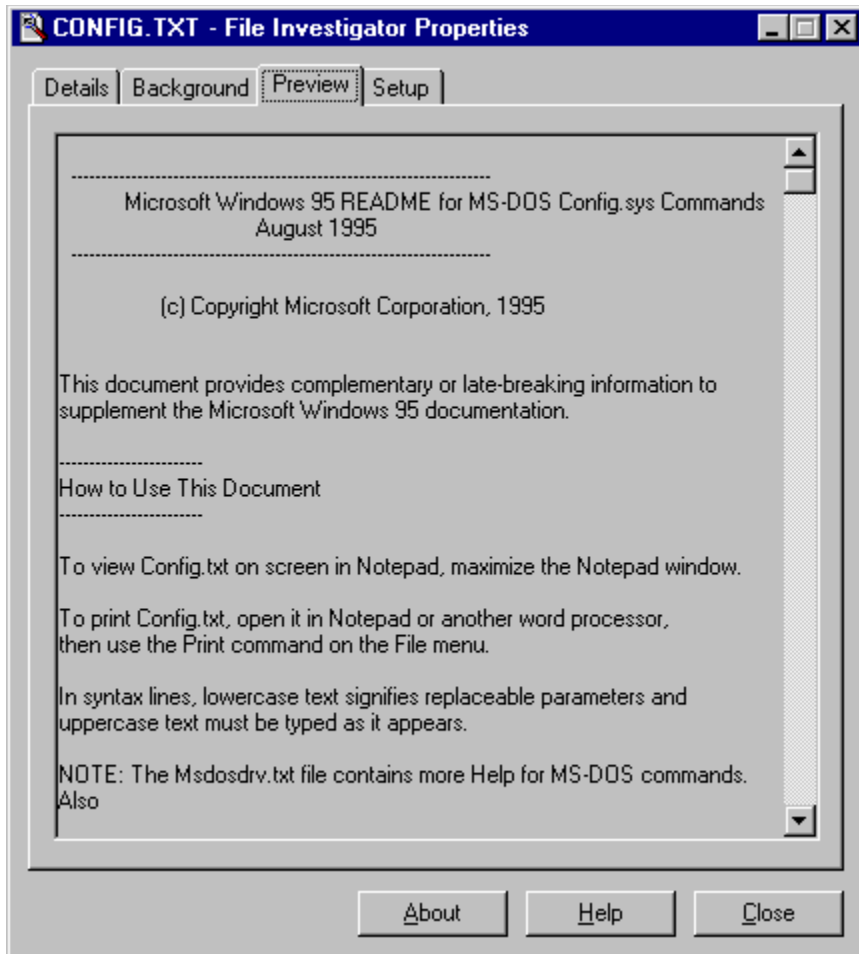
A Multipurpose Internet Mail Extension (text string) that is used in Internet email messages and HTML web pages to identify a specific type of file as an attachment or embedded object. Also known as a Multimedia Internet Message Extension.

The MIME structure `<type/subtype>*[attribute1=value1;attribute2=value2;...]` describes what type of data and what subtype or format it is stored in. The attributes and values act as optional parameters describing how to handle the file. Often type and subtype names begin with 'x-' to indicate that they are not yet a part of the MIME standard.

## Preview Tab



File Investigator Multimedia Previewer

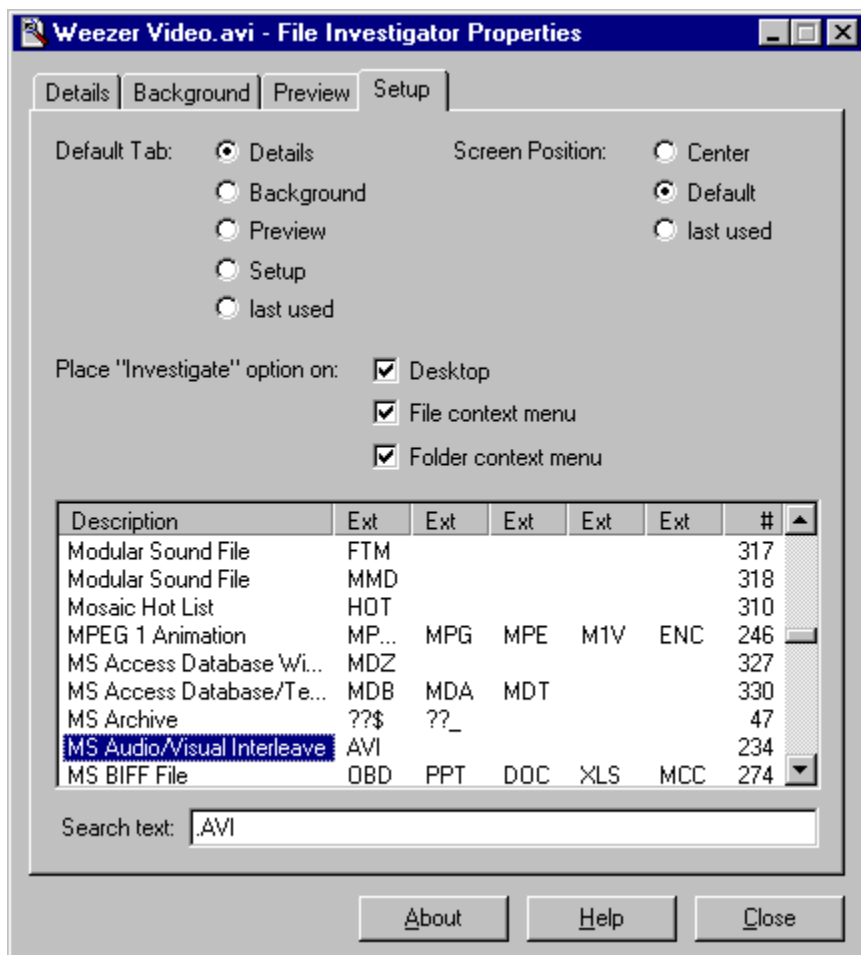


File Investigator Text Previewer

This tab uses a preview program to display the contents of the file. The File Investigator Multimedia Previewer provides a player for Microsoft multimedia files (.AVI, .WAV, .MID, .RMI). FI Text Previewer provides all other types of files with a scrollable window that displays any text strings found in the file. More preview programs will soon be available from the RobWare Internet web site. Click the **Web Site** button in the File Investigator Properties About box to visit the web site.



## Setup Tab



This tab provides configuration settings and displays a scrollable list of the file formats/types that the File Investigator Engine recognizes.

### Settings

<b>Default Tab</b>	<b>Details</b>	The Details tab will be the first to appear. (default)
	<b>Background</b>	The Background tab will be the first to appear.
	<b>Preview</b>	The Preview tab will be the first to appear.
	<b>Setup</b>	The Setup tab will be the first to appear.
	<b>last used</b>	The last tab that you used will be the first to appear.
<b>Screen Position</b>	<b>Center</b>	The dialog box will appear in the center of the screen.
	<b>Default</b>	The dialog box will appear where Windows decides to place it.
	<b>last used</b>	The dialog box will appear in the same screen location that it was last used at.
<b>Place “Investigate” option on</b>	<b>Desktop</b>	A “File Investigator (Drag & Drop)” icon will be placed on the Windows desktop. When you



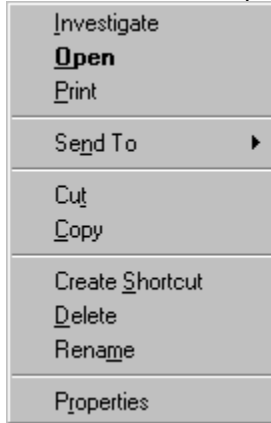
### File context menu

drag a file from a Windows application and drop it on this icon, File Investigator will investigate it. An “Investigate” option will appear on the context menu when you aim the mouse pointer at a file and click the right mouse button.

### Folder context menu

An “Investigate” option will appear on the context menu when you aim the mouse pointer at a folder/directory and click the right mouse button.

Context menu example:



### File Formats List

<b>Description</b>	The name of the format.
<b>Ext</b>	Up to five of the most common extensions used for the format.
<b>#</b>	The File Investigator Engine index number used for the format. This can be used as a reference for the error level that FIPROP.EXE returns when it quits/exits.

Note: If you double click the left mouse button on a format description, then you will be switched to the Background tab to view more information about that format.

### Search text

Type in part of a format description name, and the list will jump to the closest match. If you add a period in front of the text, only the file extensions will be included in the search. Adding a # symbol in front of the text will limit the search to only the Index # column at the right. The search text is not case sensitive.

## File Investigator Directory for Windows

This program provides a DOS Directory command line user interface (UI) with full access to all of the information that the File Investigator Engine provides. There is no limit to the number of files that can be scanned with this program. If you are used to using the DIR command at a DOS prompt, you can now simply type FIWDIR and enjoy far more functionality.

### Requirements:

MS Windows 95/98/2000 or NT 4 must be running, because this is a Windows program.  
The RobWare directory must be added to the PATH.

To make sure that DOS can always find the FIWDIR.EXE command, you need to add a directory to the path. When you installed File Investigator, you were prompted for a destination directory. The default is C:\Program Files\RobWare. You need to edit your C:\AUTOEXEC.BAT file and add the following line to the end of that file.

```
SET PATH=%PATH%;C:\Program Files\RobWare
```

If you installed to a different directory, then you will be typing that directory name on the line instead.

If you are using Windows NT, then you will want to add the PATH variable to the Environment tab that you see when you right click on the My Computer icon and select Properties. The PATH variable needs to be assigned the following value, or have the following value added if the variable already exists.

```
C:\Program Files\RobWare
```

## User Interface

Running the following command will display all of the program's options.

### FIWDIR /?

```
File Investigator Directory for Windows 95/98/2000 & NT    version 1.50  
Copyright (C) 1997-99 Robert C. Zirnstein Jr. & RobWare; ALL RIGHTS RESERVED
```

```
Summary:      This utility identifies files by analyzing their content, and is  
              used in the same way as the DOS DIR command. It provides extra  
              information for each file, found during the analysis.
```

```
Usage:        FIWDIR [drive:][path][filename] [options]  
  
              [drive:][path][filename]  
              Specifies drive, directory, and/or files to list.
```

```
Formats:      567 types of files can be identified.
```

```
Versions:    Directory          1.50  
              Engine            1.50  
              Properties        1.50  
              Text Previewer    1.50  
              File Find         1.50  
              Multimedia Previewer 1.50  
              Hexadecimal Previewer 1.50
```

### DISPLAY OPTIONS

```
/P           Pauses after each screenful of information.  
/W           Uses wide list format.  
/On         List files in sorted order:  
sortorder  N By name (alphabetic)           S By size (smallest first)  
              E By extension (alphabetic)    D By date & time (newest first)
```

G Group directories first - Prefix to reverse order  
 n By column n  
 /D Does not scan directories for directory, file and size totals.  
 /B Uses bare format (no heading information or summary)  
 /Vn Verbose mode: (Use /LO for a list of column widths)  
 level 0 Changes all column widths to 0 characters.  
 D Uses column widths that show Descriptions and Details.  
 M Uses the maximum column widths.  
 m=n Changes the width of column m to n characters.  
 /Ln Displays a list of File Investigator values:  
 lists A Accuracy levels F Formats P Platforms  
 C Contents O Columns S Storage methods  
 /C Separate values with commas and surround values with quotes.  
 /T Separate values with tabs rather than spaces.  
 /4 Displays years with 4 digits.  
 /SUM Calculates the 32 bit Checksum value for each file.

#### FILTER OPTIONS

/An Shows files with specified attributes:  
 attributes D Directories R Read-only files H Hidden files  
 S System files A Files ready for archiving - Prefix meaning not  
 /S Displays files in specified directory and all subdirectories.  
 /Fn Shows files with specified format details:  
 details A Accuracy levels F Formats S Storage methods  
 C Contents P Platforms  
 /I Only shows files with invalid extensions.  
 /CAyyyymmddhhmmss Shows files created after mm/dd/yyyy hh:mm:ss.  
 /CByyyymmddhhmmss Shows files created before mm/dd/yyyy hh:mm:ss.  
 /MAyyyymmddhhmmss Shows files modified after mm/dd/yyyy hh:mm:ss.  
 /MByyyymmddhhmmss Shows files modified before mm/dd/yyyy hh:mm:ss.  
 /EAYyyymmdd Shows files accessed after mm/dd/yyyy.  
 /EByyyymmdd Shows files accessed before mm/dd/yyyy.  
 /GTn Shows files with a size greater than n bytes.  
 /LTn Shows files with a size less than n bytes.  
 /CT"string" Shows files containing text "string".  
 /CS Forces the /CT command to be case sensitive.  
 /E Don't use file extensions to identify files as a last resort.

#### EXAMPLES

FIWDIR  
 Displays all of the files in the current directory.

FIWDIR C:\WINDOWS\\*. \* /S  
 Displays all of the files in the C:\WINDOWS directory and every directory below it in the directory tree.

FIWDIR C:\WINDOWS\\*.TXT;\*.EXE;\*.INI  
 Displays all of the files in the C:\WINDOWS directory that have the extension TXT, EXE or INI.

FIWDIR /W /P  
 Displays the files in the wide list format and pauses after each screen is displayed.

FIWDIR /D /OS  
 Displays the files without scanning directories for totals and sorts the files by size. (Note: Only the files in each directory are sorted with each other.)

FIWDIR /B /O-S  
 Displays the files, sorted by size in descending order.

FIWDIR /VD /C  
 Displays the Filename, Description and Details for each file, and surrounds the values with quotes separated by commas. This output format is used to import the list into a database program.

FIWDIR /LF  
 Displays a list of the file formats that are supported.

```

FIWDIR /4 /T
  Displays the files, with four digit years, and separates the values with
  tabs. This output format is used to import the list into a database
  program.

FIWDIR /AA /A-R
  Displays the files that have their Archive attribute set and are not
  Read-Only.

FIWDIR /FF=4
  Displays only Graphics Interchange Format (.GIF) type files. (Format #4)

FIWDIR /FA=2H
  Displays only files identified with Medium or higher accuracy.
  Without the 'H', the files must match the accuracy level exactly.

FIWDIR /FA=1L
  Displays only files identified with Low or lower accuracy.
  Without the 'L', the files must match the accuracy level exactly.

FIWDIR /I /GT100
  Displays only files that have invalid extensions, and are greater in size
  than 100 bytes.

FIWDIR /MA19920205131215
  Displays only files that were modified after February 5, 1992 at 1:12:15pm.

FIWDIR /CT"My Speech"
  Displays only files that contain the text "My Speech".

FIWDIR /E
  Does not use the file extension to identify a file when all other methods
  fail.

FIWDIR >C:\OUTPUT.TXT
  Pipes all of the directory output to the text file C:\OUTPUT.TXT.

FIWDIR /SUM /V9=23 /V21=8
  Calculates the 32 bit Checksum value for each file, and resizes the columns
  to display these values.

```

## Example Output

Running the following command will display Filenames, Descriptions and Details. The details column is much wider than what is displayed here, so some values are not displayed in this example.

### FIWDIR /VD

File Investigator Directory for Windows 95/98/2000 & NT version 1.50  
 Copyright (C) 1997-99 Robert C. Zirnstein Jr. & RobWare; ALL RIGHTS RESERVED

Option(s) used:

File Specification: C:\Test\\*.\*

Volume in drive C is DRIVE C

Directory of C:\Test

Filename	Description	Details
Autoexec.Bat	Text File	ASCII Character Set
SUHDLOG.DAT	Data File	
CHECKS.XLS	MS Excel Worksheet/Add-In/Templ.	
EXCEL.ZIP	PK Zip Archive	Format v1.00
PHONE.RXD	Reflex Database	
REFLEXBU.ZOO	Zoo Archive	

Audio_ext.pdf	Adobe Portable Document Format	
ROB.CAL	Calendar Creator Plus Calendar	
ROB.FTW	MS BIFF File	
ComeWithMe.mp3	MPEG Music File	16 bit sound, stereo, 44100 Hz
FILEID.DOC	MS Word for Windows Document	
FID2.BMP	MS Windows Bitmap	543x402, 8 bit color
NOCCC.BAK	Backup File	
MOBILE0.WRI	MS Write Document	8.5x11"
CLUB.ARC	PK Pak Archive	
epoch.bmp	MS Windows Bitmap	521x305, 24 bit color
vettr.jpg	JPEG File Interchange Format	Format v1.02
lavalamp.gif	Graphics Interchange Format	50x120, 6 bit color, LZW
ADDRESS.PCX	PC Paintbrush Bitmap	1024x730, 8 bit color
WIND-LZW.TIF	Tag Image File Format (Intel)	638x420
My Money.mny	MS Money Data	
Engine.htm	HyperText Markup Language	
OUTAHERE.AU	DEC/NeXT/Sun/UNIX Sound	8 bit sound, mono, 8012 Hz
IMABLVR.CMF	Creative Music File	Format v1.00
MONSTER.SOU	Lucas Arts Sound (SOU)	8 bit sound, mono, 22222 Hz
KLAXON.SAD	Lucas Arts Sound (SAD)	8 bit sound, mono, PCM
BLUESY2.MID	Midi Sequencer Music	15 tracks
AFTRAIN.MOD	Amiga SoundTracker Music	31 instruments
DANCEOFT.RMI	MS Midi Music	11 tracks
ENTRTAIN.ROL	Ad-Lib Composer Music	95 tempo
CONGA.VOC	Creative Voice Sound	8 bit sound, stereo, 22324 Hz
CLAP4.WAV	MS Windows Wave Sound	16 bit sound, mono, 11025 Hz
FUN.SND	Wired For Sound	8 bit sound, mono, 11050 Hz
AKIRA17.FLI	AutoDesk Animator Flic	320x200, 17.60 frames/sec
CAPTURE.AVI	MS Audio/Visual Interleave	640x480, 24 bit color, mono
Northwind.lnk	MS Windows Shortcut/Link	
Test2	Disk Directory	0 directories, 18 files

36 file(s) 64,967,757 bytes  
1 dir(s) 3,766,796,288 bytes free

Running the FIWDIR command with no parameters gives the following output.

## FIWDIR

File Investigator Directory for Windows 95/98/2000 & NT version 1.50  
Copyright (C) 1997-99 Robert C. Zirnstein Jr. & RobWare; ALL RIGHTS RESERVED

Option(s) used:

File Specification: C:\Test\\*.\*

Volume in drive C is DRIVE C

Directory of C:\Test

Filename	Size	Modified	Description
Autoexec.Bat	364	09/05/99 04:45:54PM	Text File
SUHDLOG.DAT	5,166	02/07/99 08:50:32PM	Data File
CHECKS.XLS	26,660	03/01/98 05:00:36PM	MS Excel Worksheet/Add-In/Templ.
EXCEL.ZIP	21,739	05/16/92 08:39:38AM	PK Zip Archive
PHONE.RXD	18,476	06/05/91 03:08:40PM	Reflex Database
REFLEXBU.ZOO	37,914	10/25/89 04:14:12PM	Zoo Archive
Audio_ext.pdf	17,786	08/23/99 11:13:18PM	Adobe Portable Document Format
ROB.CAL	2,950	05/04/91 04:04:44PM	Calendar Creator Plus Calendar
ROB.FTW	700,416	06/18/99 09:16:50PM	MS BIFF File
ComeWithMe.mp3	5,847,719	04/30/99 11:16:38AM	MPEG Music File
FILEID.DOC	526,336	09/25/96 08:08:30PM	MS Word for Windows Document
FID2.BMP	219,766	08/25/96 05:09:06PM	MS Windows Bitmap
NOCCC.BAK	1,233	01/29/95 02:56:58PM	Backup File
MOBILE0.WRI	2,432	02/12/95 04:36:22PM	MS Write Document
CLUB.ARC	28,702	10/14/89 04:46:30PM	PK Pak Archive
epoch.bmp	477,074	05/15/98 12:22:16AM	MS Windows Bitmap

vettr.jpg	25,161	05/04/98	09:12:18PM	JPEG File Interchange Format
lavalamp.gif	27,122	04/11/98	11:09:06AM	Graphics Interchange Format
ADDRESS.PCX	45,128	11/01/94	03:01:28PM	PC Paintbrush Bitmap
WIND-LZW.TIF	211,976	07/31/90	06:09:54PM	Tag Image File Format (Intel)
My Money.mny	77,824	08/25/99	11:09:14PM	MS Money Data
Engine.htm	246	12/21/98	11:21:14PM	HyperText Markup Language
OUTAHERE.AU	8,920	11/30/95	10:25:52AM	DEC/NeXT/Sun/UNIX Sound
IMABLVR.CMF	6,251	03/01/91	03:41:42PM	Creative Music File
MONSTER.SOU	15,814,987	12/13/94	03:09:38PM	Lucas Arts Sound (SOU)
KLAXON.SAD	1,416	05/04/93	10:24:48AM	Lucas Arts Sound (SAD)
BLUESY2.MID	22,803	01/29/92	03:26:48PM	Midi Sequencer Music
AFTRAIN.MOD	62,058	03/30/91	11:24:14AM	Amiga SoundTracker Music
DANCEOFT.RMI	20,906	07/11/95	09:50:00AM	MS Midi Music
ENTRTAIN.ROL	19,997	09/21/91	08:50:14PM	Ad-Lib Composer Music
CONGA.VOC	42,931	12/21/93	01:00:00AM	Creative Voice Sound
CLAP4.WAV	77,260	07/20/95	12:00:00AM	MS Windows Wave Sound
FUN.SND	14,114	04/01/92	01:00:00AM	Wired For Sound
AKIRA17.FLI	986,400	05/08/92	04:30:40AM	AutoDesk Animator Flic
CAPTURE.AVI	16,777,216	03/12/99	10:08:18PM	MS Audio/Visual Interleave
Northwind.lnk	529	06/02/99	02:27:38PM	MS Windows Shortcut/Link
Test2	22,789,779	09/06/99	04:01:46PM	Disk Directory

36 file(s) 64,967,757 bytes  
1 dir(s) 3,766,796,288 bytes free

## File Investigator File Find for Windows

This program was designed to exercise the File Investigator Engine on a large number of files, and provide a familiar user interface (UI) to filter the list with. The UI is similar to the File Find Dialog that MS Windows 95/98/2000/NT 4.0 uses.

It provides four tabs:

### Name & Location

### Content

### Date Modified

### Text & Attributes

The List view provides details for each file found in the search.

At the bottom, the preview window uses the preview DLLs to display the file that is currently selected in the list view. The screen image below demonstrates the use of the Hexadecimal Previewer.

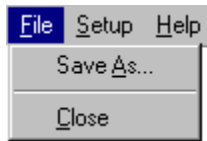
The screenshot shows the File Investigator File Find application window. The title bar reads "File Investigator File Find". The menu bar includes "File", "Setup", and "Help". The main window has four tabs: "Name & Location", "Content", "Date Modified", and "Text & Attributes". The "Name & Location" tab is active. The search criteria are: "Named: \*.com", "Look in: C:\dos", and "Include subdirectories" is checked. There are buttons for "Find Now", "Stop", and "New Search". Below the search area is a list of files with columns: "Filename", "Created", "Accessed", "Description", and "Other Information". The file "MAP.COM" is selected. Below the list is a hexadecimal preview window showing the file's content in hex and ASCII. The preview shows the start of a memory map file.

Filename	Created	Accessed	Description	Other Information
FORMAT.COM	06/28/99 22:13:22	06/28/99 00:00:00	DOS Program (Tiny)	Compiler: EXE2COM
LIST.COM	06/28/99 22:13:23	06/28/99 00:00:00	DOS Program (Tiny)	
MAP.COM	06/28/99 22:13:23	06/28/99 00:00:00	DOS Program (Tiny)	
NE.COM	06/28/99 22:13:23	06/28/99 00:00:00	DOS Program (Tiny)	Compressor: PK Lite
SYS.COM	06/28/99 22:13:24	06/28/99 00:00:00	DOS Program (Tiny)	
IPXDE220.COM	04/29/99 14:05:59	06/17/99 00:00:00	DOS Program (Tiny)	Compiler: NetWare Workstation Ge
IPXODI.COM	04/29/99 14:05:59	06/17/99 00:00:00	DOS Program (Tiny)	

```
000000  9C 55 56 8C CD 83 C5 10 8D B6 57 02 56 BE 26 00  UV I A W V % &
000010  56 CB 4D 45 4D 4F 52 59 24 20 4D 61 70 20 56 31  VEMEMORY$ Map V1
000020  2E 34 20 20 20 20 62 79 3A 20 20 44 6F 72 6E 20  .4 by: Dorn
000030  57 2E 20 53 74 69 63 6B 6C 65 20 20 20 20 20 20  W. Stickle
000040  20 30 34 2F 30 33 2F 38 35 20 20 20 20 20 20 20  04/03/85
000050  20 20 20 20 20 20 20 20 20 20 41 6C 6C 20 72 69  All ri
000060  67 68 74 73 20 72 65 73 65 72 76 65 64 90 C7 46  ghts reserved ÇF
000070  EE 00 00 C7 86 D6 FC 00 00 83 BE D6 FC 20 7C 03  i Ç Öü  Öü |
```

10 file(s) found

## Menus

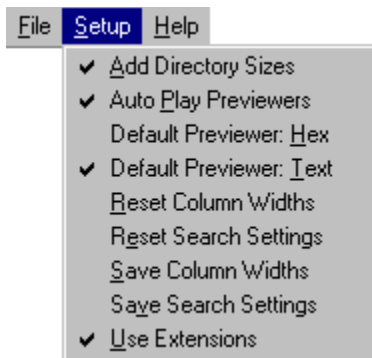


### Save As...

Displays a Save As dialog, to create a Comma delimited, Formatted Text (Space delimited) or Tab delimited file with the information in the list view. List columns that have been resized to zero width will not be saved.

### Close

Exits from the application.



### Add Directory Sizes

A check mark indicates that each directory entry in the list will add the total size of all of the files and directories inside it.

### Auto Play Previewers

A check mark indicates that previewers that include a play button will automatically start playing once a file is selected in the list view. So far, the Multimedia Previewer is the only one that uses this setting.

### Default Previewer: Hex

A check mark indicates that the Hexadecimal Previewer will be used for files that don't have a previewer associated with their file format.

### Default Previewer: Text

A check mark indicates that the Text Previewer will be used for files that don't have a previewer associated with their file format.

### Reset Column Widths

Resets the list columns to the factory default widths.

### Reset Search Settings

Resets the tab pages to the factory default settings.

### Save Column Widths

Saves the current list column widths, to be used each time the application is started.

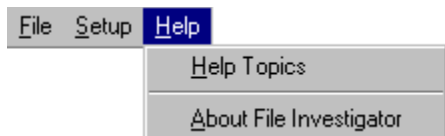
### Save Search Settings

Saves the current settings in the tab pages, to be used each time the application is started and when the New Search button is pressed.

### Use Extensions

A check mark indicates that the engine will identify a file by it's extension as a last resort, if the file can't be identified.





**About File Investigator**

Displays the versions of the files used with this application.

**Help Topics**

Displays help for File Investigator.

**Buttons**

**Find Now**

Starts the search with the settings on the tab pages.

**Stop**

Stops the search as soon as the current file is finished being identified.

**New Search**

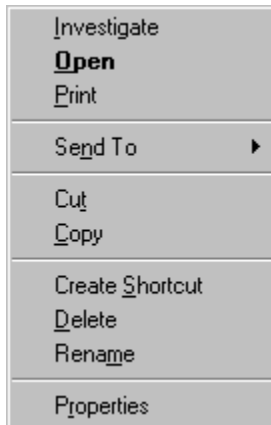
Erases the list of files found, and resets the tab pages to the settings saved with the Setup / Save Search Settings menu option. If that menu option was not used, the tab pages will be set to factory defaults.

The columns in the list view are resizable. If columns get hidden, then they can be pulled back apart or select the Setup / Reset Column Widths to reset them to the factory defaults.

Double clicking the left mouse button on a file tells Windows to open the file. Double clicking the right mouse button on a file brings up the File Investigator Properties dialog, with information about the file.

Clicking on the title of any column will sort the whole list by that column in ascending order. Another click to the same column title will sort the list by that column in descending order.

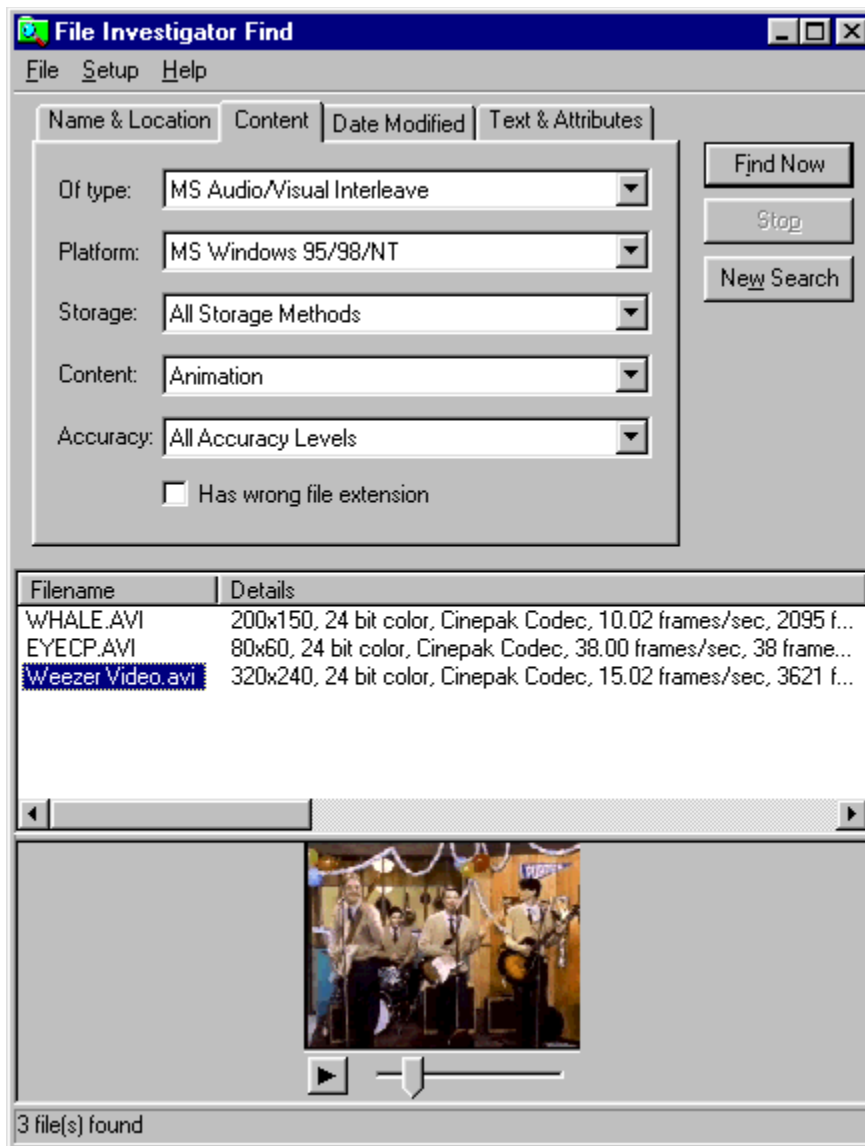
## Name & Location Tab



This tab provides fields to select the filenames to search for and the directories to search in.

- Named** Enter the file specification / wild cards that you want to use for the file search. If left empty, then '\*. \*' is used.
- Look in** Enter the folder / directory to search in.
- Browse...** Click this button for a list of directories to choose from.
- Include subfolders** Place a check in this box if you want to recursively search for files inside each directory.

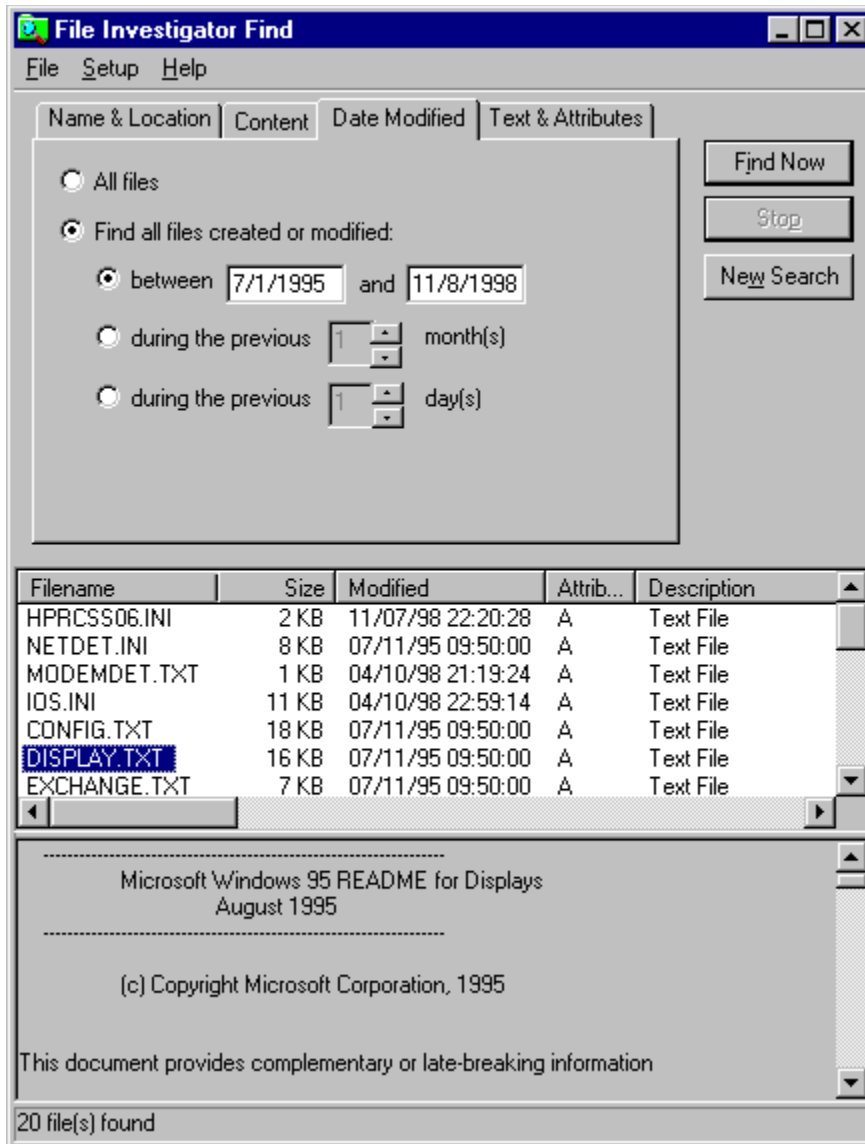
## Content Tab



This tab provides drop down lists to select the contents to filter the file search with.

- Of type** Filters by the description that File Investigator uses to describe a file's format/type.
- Platform** Filters by computer and operating systems that the file type/format is known to work on.
- Storage** Filters by the method used to store data in that file type/format.
- Content** Filters by the type of data that is stored in each file.
- Accuracy** Filters by the rating of how accurate File Investigator was at identifying each file.
- Has wrong file extension** Place a check in this box if you only want to see files that have the wrong file extension.

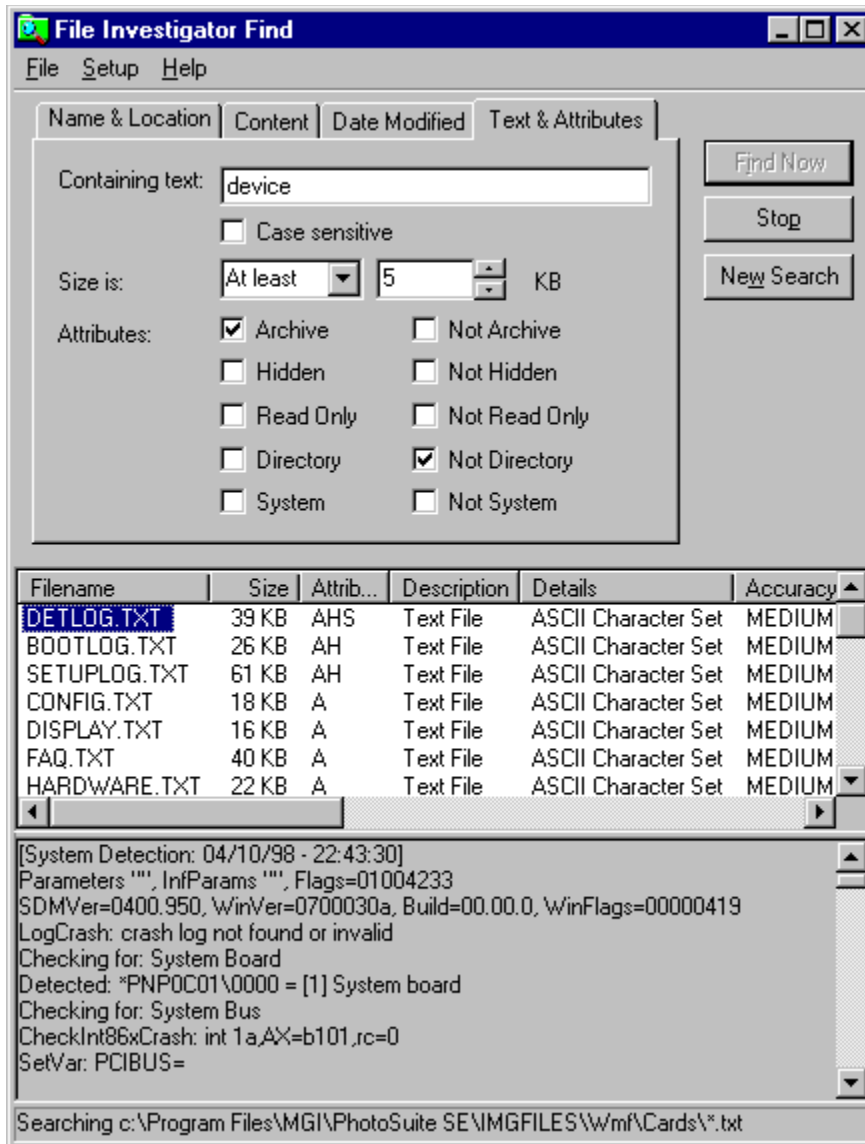
### Date Modified Tab



This tab provides radio buttons and fields to select the date range to filter the file search with.

- All files**            Select this option to turn off date filtering.
- between**            This option allows you to enter the exact dates to include files in.
- month(s)**           This range is between x months ago and today.
- day(s)**             This range is between x days ago and today.

### Text & Attributes Tab



This tab provides fields to select a phrase to look for and a size to filter the file search with. Then, there are a series of check boxes to select what attributes each file must or must not have.

- Containing text** Enter a phrase that each file must contain inside. Warning: this can slow the search down substantially.
- Case sensitive** Place a check in this box if you want to require each file to contain the exact phrase that you type, with each character in the same case.
- Size is** Select At least or At most in the list box, then change the size to the limit that you want all files to be filtered by.
- Attributes** Place a check in each box that you want to require of each file. Ex: Archive means that every file must have the archive bit turned on. Not Archive means that every file must have the archive bit off. No check mark means that the archive bit won't be used in the filtering process.

### Upgrade File Investigator

You are free to use and distribute the shareware version as long as you include all of the original files

packaged in the original F1150SW.EXE or F1150SW.ZIP archive file. The shareware version is for personal use only. Companies must upgrade it immediately. By upgrading, you will receive the latest MS Windows 95/98/2000/NT version of File Investigator and notifications of future releases.

To upgrade over the Internet, visit [HTTP://www.RobWare.com](http://www.RobWare.com), by pressing the **Web Site** button in the Help/About box of the File Find and Properties programs.

If you prefer to send a check by mail:

If possible, visit the RobWare web site for the latest versions and shipping options.

Make the check payable to **RobWare**.

The prices are in **US dollars**.

Print and fill out this order form.

Mail to: **RobWare**  
**40 Massier Lane**  
**Foothill Ranch, CA 92610-2300**  
**USA**

**Site license:** Entitles the company to receive one copy of the distribution package and duplicate it for the specified number of licenses.

**File Investigator Standard** \_\_\_\_\_ copies x \$20 = \_\_\_\_\_  
Includes **File Find, Properties** and **Directory** for Windows  
Identifies 567 file formats.

**File Investigator Basic to Standard Upgrade** \_\_\_\_\_ copies x \$15 = \_\_\_\_\_  
Requires the purchase of the Basic (Properties) version.  
Includes **File Find, Properties** and **Directory** for Windows  
Identifies 567 file formats.

**File Investigator Basic** \_\_\_\_\_ copies x \$10 = \_\_\_\_\_  
Includes **Properties** for Windows  
Identifies 567 file formats.

**File Investigator 1.10 for DOS** \_\_\_\_\_ copies x \$10 = \_\_\_\_\_  
Includes **Directory** and **Properties** programs.  
This software was written in August 1997 and does not  
provide the level of accuracy that the Windows versions do.  
(DOS DIR command with the abilities of File Find.)  
Identifies 300 file formats.

Mail the 3½" floppy disk (optional) add \$5 = \_\_\_\_\_

Total payment = \_\_\_\_\_

Instructions for downloading the new version from the web site will be emailed to you, once your payment is received.

PLEASE PRINT CLEARLY

Date: \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

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City, State, Zip: \_\_\_\_\_

Country: \_\_\_\_\_

E-Mail address: \_\_\_\_\_

How did you hear about File Investigator?

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Comments:

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## Adding/Improving File Types

If you discover that the File Investigator Engine can not identify, incorrectly identifies, or leaves out details for a type of file that you use, then feel free to notify RobWare. There is an email link on the RobWare Internet web site. Click the **Web Site** button in the File Investigator Properties About box to visit the web site.

File Investigator File Find

File Setup Help

Name & Location | Content | Date Modified | Text & Attributes

Named: \*.com

Look in: C:\dos [Browse...]

Include subdirectories

[Find Now] [Stop] [New Search]

Filename	Created	Accessed	Description	Other Information
FORMAT.COM	06/28/99 22:13:22	06/28/99 00:00:00	DOS Program (Tiny)	Compiler: EXE2COM
LIST.COM	06/28/99 22:13:23	06/28/99 00:00:00	DOS Program (Tiny)	
MAP.COM	06/28/99 22:13:23	06/28/99 00:00:00	DOS Program (Tiny)	
NE.COM	06/28/99 22:13:23	06/28/99 00:00:00	DOS Program (Tiny)	Compressor: PK Lite
SYS.COM	06/28/99 22:13:24	06/28/99 00:00:00	DOS Program (Tiny)	
IPXDE220.COM	04/29/99 14:05:59	06/17/99 00:00:00	DOS Program (Tiny)	Compiler: NetWare Workstation Ge
IPXODI.COM	04/29/99 14:05:59	06/17/99 00:00:00	DOS Program (Tiny)	

```

000000  9C 55 56 8C CD 83 C5 10 8D B6 57 02 56 BE 26 00  UViA|TWV%&
000010  56 CB 4D 45 4D 4F 52 59 24 20 4D 61 70 20 56 31  VEMEMORY$ Map V1
000020  2E 34 20 20 20 20 62 79 3A 20 20 44 6F 72 6E 20  .4 by: Dorn
000030  57 2E 20 53 74 69 63 6B 6C 65 20 20 20 20 20 20  W. Stickle
000040  20 30 34 2F 30 33 2F 38 35 20 20 20 20 20 20 20  04/03/85
000050  20 20 20 20 20 20 20 20 20 20 41 6C 6C 20 72 69  All ri
000060  67 68 74 73 20 72 65 73 65 72 76 65 64 90 C7 46  ghts reserved|CF
000070  EE 00 00 C7 86 D6 FC 00 00 83 BE D6 FC 20 7C 03  i ç|Öü |%Öü |
  
```

10 file(s) found

While some of the file formats that the FI Engine recognizes were added using reference materials, most had to be reverse engineered. In order to be reverse engineered, the format has to be analyzed for recognizable information related to what is already known about a specific test file. For example, another program may reveal that the file has 800x600 dots, 5 pages or was created for Letter size paper. The file has to be searched, with a hexadecimal viewer, for values that may represent this information. Many test/example files are needed, so that new algorithms can be tested for accuracy.

If you would like a file type/format to be added to File Investigator, or improved, here is a list of what you can provide to help:



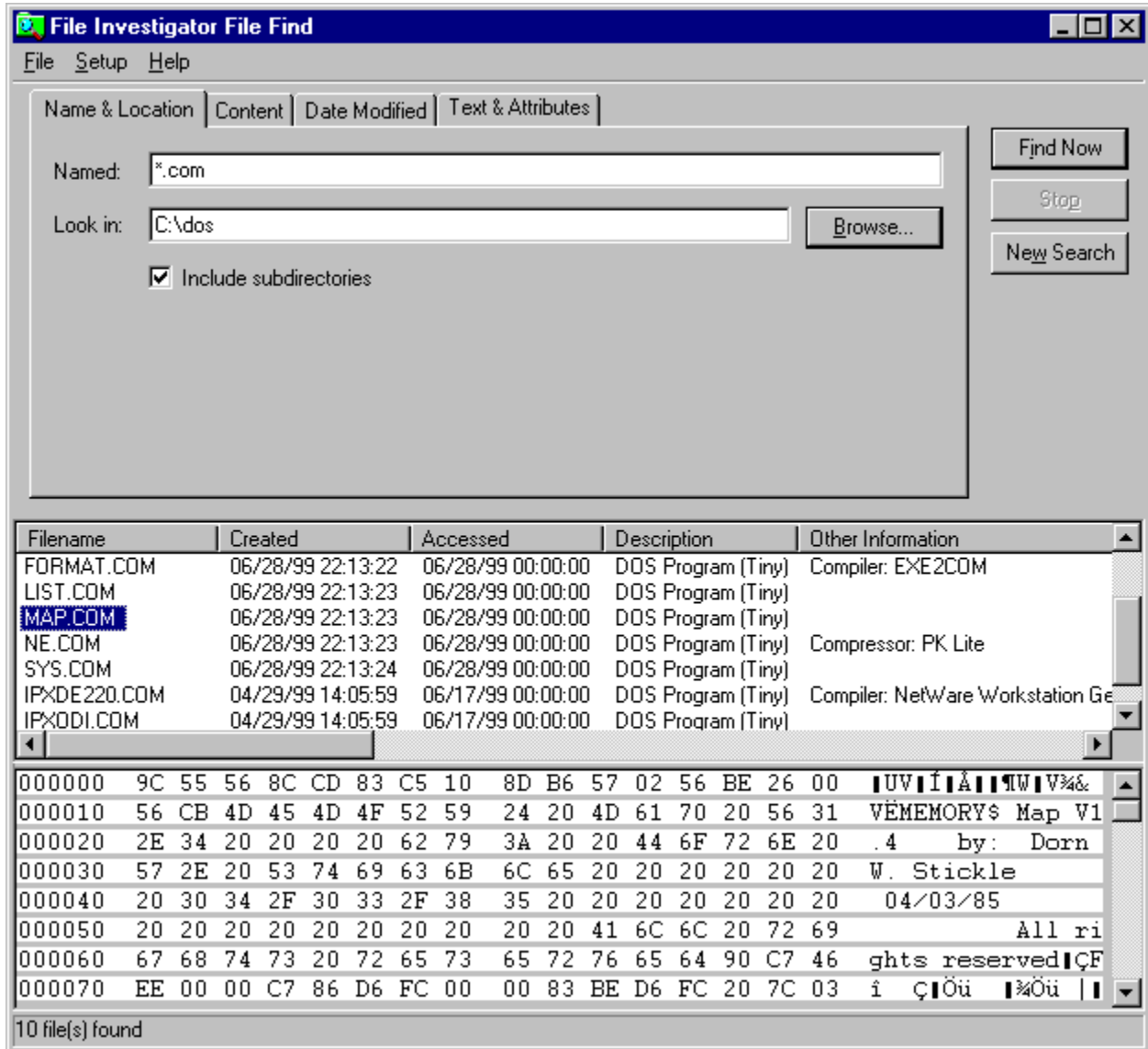
Version of your File Investigator (from About box)  
Name of software that creates, edits, converts and/or views the format  
Address and/or web site for the software company  
Specification document for the format  
Name of reference book that describes the format  
Example files  
Details for each file (ex: number of pages, resolution, etc.)  
Create each file with just one setting changed (ex: page size, etc.)

While you probably won't be able to provide everything on the list, the more the better. When possible, please send the information/files by email.

## Troubleshooting

If you do not find a solution to your problem below, then feel free to contact RobWare by email. An email link is provided on the web site. Please include the version numbers of the software (provided in the About box.)

Click the **Web Site** button in the File Investigator Properties About box to visit the web site.



The Technical Support email address is [Support@RobWare.com](mailto:Support@RobWare.com).

### File Investigator Icon/Investigate option

**Problem :** I need to remove the 'Investigate' option from the context menu, without uninstalling File Investigator.

**Solution:** Run File Investigator Properties and select the Setup tab. You will find check boxes for the Desktop icon, File and Folder context menus. Removing the check from each

box will remove that option from the desktop or context menu.

**Problem :** After installing File Investigator, I can no longer use my DOS version of File Investigator.

**Cause:** File Investigator for Windows replaces the MS Windows Registry entries that the DOS version used. They were just temporary, until the Windows version was finished. FIPROP.EXE was also replaced by the Windows version, if you installed it to the disk directory that the DOS version was in.

**Solution:** Install the DOS version to a different directory than the Windows version, or download an update of the DOS version that does not effect the MS Windows Registry.

### **MS Windows Shortcut/Link**

**Problem :** When I right click my mouse on a MS Windows Shortcut/Link file, the 'Investigate' option does not appear on the file context menu.

**Cause:** If the 'Investigate' option were used on a .LNK file from the context menu, then the operating system sends the original file name to File Investigator rather than the shortcut's filename. For this reason, the 'Investigate' option is removed from the context when used on .LNK files.

**Solution:** Drag and drop the shortcut icon to the File Investigator icon on the desktop.

### **Screen size**

**Problem :** The File Investigator File Find dialog is larger than my screen.

**Cause:** Applications grow in size when you use a large screen font. The FI File Find dialog is designed to work on screens using 800x600 or larger resolutions.

**Solution:** Use the Start/Settings/Control Panel/Display/Settings tab to change the Font size to Small Fonts or set the Desktop area to a larger resolution.

### **Uninstall**

**Problem :** After uninstalling, the disk directory and FISETUP.EXE file are still there.

**Cause:** MS Windows will not allow a program to delete itself while it is running. The FISETUP.EXE program is used to uninstall the software. MS Windows also will not allow a disk directory to be removed when there is still a file in it.

**Solution:** The File Investigator uninstaller notifies MS Windows that the disk directory and FISETUP.EXE file still need to be removed. The next time you reboot your computer, MS Windows will try to remove both of them

**Note:** MS Windows 95/98 is not able to remove the disk directory after rebooting.

