IDOL KeyView

Software Version 12.12

XML Export SDK Java Programming Guide

MICRO FOCUS

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- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
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Contents

Part I: Overview of XML Export

This section provides an overview of the Micro Focus IDOL KeyView Export SDK and describes how to use the Java implementation of the API.

- Introducing XML Export
- Getting Started

Chapter 1: Introducing XML Export

This guide is for developers who want to incorporate Micro Focus KeyView XML conversion technology into their applications using a Java development environment. It is intended for readers who are familiar with XML and Java.

Overview

XML Export is part of the KeyView Export SDK. It enables you to convert virtually any document, spreadsheet, presentation, or graphic into well-formed, valid XML which is validated against a predefined Document Type Definition (DTD). With XML Export, you control the content, structure, and format of the XML output using either easily customized templates, or the flexible and robust APIs.

The main purpose of XML Export is to apply an XML vocabulary to the data structures in a document so that content and metadata can be indexed and subsequently searched in context.

Data structures in a source document can be:

- metadata (title, author, subject, and so on)
- document components (headers, footers, footnotes, endnotes, captions, bookmarks, and so on)
- tagged text (chapters, sections, bulleted lists, and so on)
- table components (sheet names, rows, columns, cell ranges, and so on)
- presentation components (notes, slide titles, slide descriptions, and so on)

Although viewing is not the main purpose of XML Export, Extensible Stylesheet Language (XSL) style sheets or Cascading Style Sheets (CSS) can be used to display the XML data.

The Export SDK is part of the KeyView suite of products. KeyView provides high-speed text extraction, conversion to web-ready HTML and well-formed XML, and high-fidelity document viewing.

Features

- Dynamically convert word processing, spreadsheet, presentation, and graphics files into well-formed, valid, and 1.0-compliant XML. The XML output is validated against a predefined DTD named the "`Verity.dtd`".
- Export supports over 300 formats in 70 languages.
- Convert files either in-process or out of process. Out-of-process conversion ensures the stability and robustness of the calling application if a corrupt document causes an exception or causes the conversion process to fail.
- You can extract files embedded within files by using the File Extraction API, and then convert them by using the Export API.
- Use redirected input/output. You can provide an input stream that is not restricted to file system access.
- Export automatically recognizes the file format being converted and uses the appropriate reader. Your application does not need to rely on file name extensions to determine the file format.
- Create heading levels in the output file either by using the structure in the source document or by allowing Export to automatically generate a structure based on document properties, such as font or font attributes.
- Use callbacks to control aspects of the conversion process, such as file naming and the insertion of scripts.
- Insert predefined XML markup at specific points in the output stream.
- Apply XSL or Cascading Style Sheets (CSS) to improve the fidelity of the output.
- Map paragraph and character styles in word processing documents to any markup that you specify in the output.
- Control the resolution of rasterized vector graphics to optimize storage requirements or image quality.
- Select the target format for converted graphics, including GIF, JPEG, CGM, PNG, WMF, and SVG on Windows, and JPEG and SVG on Unix and Linux.

Platforms, Compilers, and Dependencies

This section lists the supported platforms, supported compilers, and software dependencies for the KeyView software.

Supported Platforms

The Java XML Export SDK is supported on the following platforms.

- CentOS 7 x86, x64, and AArch64
- IBM AIX L6.1 PowerPC 32-bit and 64-bit
- IBM AIX L7.1 PowerPC 32-bit and 64-bit
- macOS 10.13 or later on 64-bit Apple-Intel architecture
- macOS 11 or later on Apple M1.
- Microsoft Windows Server 2012 x64
- Microsoft Windows Server 2016 x64
- Microsoft Windows Server 2019 x64
- Microsoft Windows 8 x86 and x64
- Microsoft Windows 10 x64
- Oracle Solaris 10 SPARC
- Oracle Solaris 10 x86 and x64
- Red Hat Enterprise Linux 7 x64
- Red Hat Enterprise Linux 8 x64
- SuSE Linux Enterprise Server 12 x64
- SuSE Linux Enterprise Server 15 x64

Supported Compilers

The following table lists the supported compilers for the Java XML Export SDK.

Component	Compiler
Java components	Java 7 to 17

Software Dependencies

To run KeyView on Windows requires the Microsoft Visual C++ 2019 redistributables to be installed. The redistributables are provided in the `vcredist` folder of the KeyView SDK but you can download the latest installers from Microsoft to get the latest security, reliability, and performance improvements.

To run KeyView OCR and RMS decryption on 64-bit Linux requires `libstdc++.so.6` and `libgcc_s.so.1` from GCC 5.4. For your convenience, these are provided in the `bin` folder of your KeyView installation.

NOTE: If you are running KeyView out-of-process then the `servant` and `WKOOP.exe` executables must be able to link to `libstdc++.so.6` and `libgcc_s.so.1`.

- If these are installed in a system folder, like `/lib64`, KeyView will find them automatically.
- If you prefer you can add the path of the folder containing these libraries to the environment variable `LD_LIBRARY_PATH`.

If you are running KeyView in-process:

- If your application is already linking to `libgcc_s` and `libstdc++` from GCC 5.4 or later, KeyView will use them as well and no further action is needed.
- If your application is linking to earlier versions of `libgcc_s` and `libstdc++`, Micro Focus recommends that you upgrade those binaries to those from GCC 5.4 or later.
- If your application is not linking to `libgcc_s` and `libstdc++` you must ensure those binaries are available in the same way as described in the instructions, above, for running KeyView out-of-process.

If older versions of `libgcc_s` and `libstdc++` are provided (but at least those from GCC 4.8) then most features will continue to work, but PDF Export, Optical Character Recognition, and RMS Decryption will not.

Some KeyView components require specific third-party software:

- Java Runtime Environment (JRE) or Java Development Kit (JDK) version 7 to 17 is required for the Filter and Export Java APIs and for graphics conversion in the Export SDK.
- Outlook 2002 or later is required to process Microsoft Outlook Personal Folders (PST) files using the MAPI-based reader (`pstsr`). The native PST readers (`pstxsr` and `pstnsr`) do not require Outlook.

  NOTE: You must install an edition of Microsoft Outlook (32-bit or 64-bit) that matches the KeyView software. For example, if you use 32-bit KeyView, install 32-bit Outlook. If you use 64-bit KeyView, install 64-bit Outlook.

  If the editions do not match, KeyView returns `Error 32: KVError_PSTAccessFailed` and an error message from Microsoft Office Outlook is displayed: `Either there is a no default mail client or the current mail client cannot fulfill the messaging request. Please run Microsoft Outlook and set it as the default mail client.`
- Lotus Notes or Lotus Domino is required for Lotus Notes database (NSF) file processing. The minimum requirement is 6.5.1, but version 8.5 is recommended.

Windows Installation

To install the SDK on Windows, use the following procedure.

To install the SDK

1. Run the installation program, `KeyView`*`ProductName`*`SDK_`*`VersionNumber_OS`*`.exe`, where *`ProductName`* is the name of the product, *`VersionNumber`* is the product version number, and *`OS`* is the operating system.

   For example:

   `KeyViewExportSDK_12.12_Windows_X86_64.exe`

   The installation wizard opens.

2. Read the instructions and click **Next**.

   The License Agreement page opens.

3. Read the agreement. If you agree to the terms, click **I accept the agreement**, and then click **Next**.

   The Installation Directory page opens.

4. Select the directory in which to install the SDK. To specify a directory other than the default, click  , and then specify another directory. After choosing where to install the SDK, click **Next**.

   The Pre-Installation Summary opens.

5. Review the settings, and then click **Next**.

   The SDK is installed.

6. Click **Finish**.

UNIX Installation

To install the SDK, use one of the following procedures.

To install the SDK from the graphical interface

- Run the installation program and follow the on-screen instructions.

To install the SDK from the console

1. Run the installation program from the console as follows:

   `./KeyViewExportSDK_`*`VersionNumber_Platform`*`.exe --mode text`

   where:

`VersionNumber`	is the product version.
`Platform`	is the name of the platform.

2. Read the welcome message and instructions and press `Enter`.

   The first page of the license agreement is displayed.

3. Read the license information, pressing `Enter` to continue through the text. After you finish reading the text, and if you accept the agreement, type **`Y`** and press `Enter`.

   You are asked to choose an installation folder.

4. Type an absolute path or press `Enter` to accept the default location.

   The Pre-Installation summary is displayed.

5. If you are satisfied with the information displayed in the summary, press `Enter`.

   The SDK is installed.

Package Contents

The Export installation contains:

- Libraries and executable files necessary for converting source documents into high-quality, well-formed XML (see Files Required for Redistribution, on page 247).
- The include files that define the functions and structures used by the application to establish an interface with Export (see the `include` directory for XML Export).
- The Java API implemented in the `com.verity.api.export` package contained in the `KeyView.jar` file.
- Several sample programs that demonstrate Export's functionality.
- Sample images that can be used as navigation buttons and background textures in your output.
- Template files that enable you to set conversion options without modifying at the API level. They can be used to generate a wide range of output, from highly-stylized user-defined XML to stripped-down, text-only output suitable for use with an indexing engine.
- The predefined DTD, `Verity.dtd`, used to validate all XML output.
- Sample style sheets: `wp.xsl` (for word processing documents), `ss.xsl` (for spreadsheets), and `pg.xsl` (for presentation graphics).

License Information

Your license key controls whether you have the full version of the KeyView SDK, or a trial version. It also determines whether the following advanced features are enabled:

- Advanced character set detection with the character set detection library (`kvlangdetect`).
- Advanced document readers:

    - Microsoft Outlook Personal Folders (PST) readers (`pstsr`, `pstnsr`, and `pstxsr`)
    - Lotus Notes database (NSF) reader (`nsfsr`)
    - Mailbox (MBX) reader (`mbxsr`)
- Processing of documents protected by Microsoft RMS encryption.

If you obtain a new license key from Micro Focus, you must update the licensing information that you pass to KeyView. See Pass License Information to KeyView.

Enable Advanced Document Readers

To enable advanced readers, you must obtain an appropriate license key from Micro Focus and pass the license key to KeyView as described in Pass License Information to KeyView.

If you are enabling the MBX reader in an existing installation of Export, in addition to updating the license key, change the parameter `208=eml` to `208=mbx` in the `formats_e.ini` file.

Pass License Information to KeyView

To provide license information to KeyView, do one of the following:

- Provide the license information through the API. Micro Focus recommends using this approach.
- Provide the license information as a text file named `kv.lic`. In earlier versions of KeyView, license information had to be stored in a file and included in the `bin` folder with the KeyView libraries. The ability to provide license information as a file has been deprecated and might be removed in future. You should no longer include license information in your application as a file. Micro Focus recommends that you pass license information to KeyView through the API instead.

If you have an evaluation version of KeyView and purchase a full version of the SDK, or you are adding a document reader (for example, the PST reader), you must update the license information that you pass to KeyView.

To provide license information through the API

- In the C API, provide license information when you initialize KeyView by calling `fpInitWithLicenseData()`.
- In the Java API, provide license information to KeyView when you instantiate the `XmlExport` object.

To provide license information as a file

1. Open or create the license key file, `kv.lic`, in a text editor. The file must be saved in the same directory as the KeyView libraries, and must contain your organization name and license key.

   ```
   COMPANY NAME
   XXXXXXX-XXXXXXX-XXXXXXX-XXXXXXX
   ```

2. Replace the text *COMPANY NAME* with the company name that appears at the top of the License Key Sheet provided by Micro Focus. Enter the text exactly as it appears in the document.
3. Replace the characters *XXXXXX-XXXXXXX-XXXXXXX-XXXXXXX* with the appropriate license key from the License Key Sheet provided by Micro Focus. The license key is listed in the **Key** column in the **Standalone Products** table. The key is a string that contains 31 characters, for example, `2TQD22D-2M6FV66-2KPF23S-2GEM5AB`. Enter the characters exactly as they appear in the document, including the dashes, but do not include a leading or trailing space.
4. The finished `kv.lic` file looks similar to the following:

   ```
   Autonomy
   24QD22D-2M6FV66-2KPF23S-2G8M59B
   ```

5. Save the file.

Directory Structure

The following table describes the directories created during the XML Export installation. The variable *install* is the path name of the Export installation directory (for example, `/usr/autonomy/KeyviewExportSDK` on UNIX, or `C:\Program Files\Autonomy\KeyviewExportSDK` on Windows). On UNIX, the XML Export directory is named `/xmlexpt`.

The variable *OS* is the operating system for which the SDK is installed. For example, the `bin` directory on a standard 32-bit Windows installation would be located at `C:\Program Files\Autonomy\KeyviewExportSDK\WINDOWS\bin`.

XML Export Installed Directory Structure

Directory	Contents
*install**OS*\bin	Contains the libraries, executables for the sample programs, the Java program (`kvraster.class`), the Java applet (`kvvector.jar`), the format detection file, `formats_e.ini`, the license key file (`kv.lic`), and a number of other supporting files.
install\javaapi\ini	Contains the template files used with the Java API.
install\javaapi\javadoc	Contains the Javadoc for the Java API.
install\javaapi\sample	Contains the source files and sample programs for the Java API.
install\testdocs	Contains sample word processing, spreadsheet, and presentation graphics files that can be used to test XML Export's options. You might also find this directory useful when testing your own applications.
install\XML Export\guide	Contains the *XML Export C Programming Guide* and *XML Export Java Programming Guide* in HTML and PDF format.
install\XML Export\include	Contains the header files (`adinfo.h`, `kvxml.h`, `kvcharset.h`,

XML Export Installed Directory Structure, continued

Directory	Contents
	`kverrorcodes.h`, and , and `kvtypes.h`) for the C API.
install\XML Export\programs\cnv2xml	Contains the C source code files for a sample program that creates a single XML file. The executable for this sample program is in the `bin` directory.
install\XML Export\programs\ cnv2xmloop	Contains the C source code for a sample program that creates a single XML file out of process.
install\XML Export\programs\ini	Contains the template files used to set the conversion options in the C API.
install\XML Export\programs\metadata	Contains the C source code and supporting files for a sample program that creates a valid XML file containing only the document's metadata.
install\XML Export\programs\pdfini	Contains the template file used to extract custom metadata from PDF documents.
install\XML Export\programs\tempout	The default output directory for converted files. Contains the KeyView DTD, sample style sheets, and character entity files. These files are required for viewing the converted XML files.
install\XML Export\programs\tstxtract	Contains the C source code and supporting files for a sample program that demonstrates the File Extraction interface.
install\XML Export\programs\ xmlcallback	Contains the C source code and supporting files for a sample program that demonstrates how user callbacks can dynamically shape the XML conversion.
install\XML Export\programs\xmlini	Contains the C source code and supporting files for a sample program that uses template files to set the conversion options.
install\XML Export\rel_ notes	Contains the *XML Export Release Notes* in HTML and PDF format.

Definition of Terms

The following are specialized terms used throughout the guide.

anchor	XML markup that defines both anchors and hyperlinks. An anchor is a named place in a document to which other documents can form a link. Anchors use the XML anchor tags (`<a xmlns:xlink= xlink href=> </a>`) to facilitate navigation within a document.

	The major browsers do not currently support linking in XML documents.
block	All source document content (including subheadings) associated with Heading Level 1. Export identifies and/or generates blocks from the input stream for the implementation of the your XML markup.
block chunk or chunk	All source document content associated with Heading Levels 2 through 6. Chunks are subdivisions of blocks. You can supply specific XML markup for the different levels of block chunks.
callback	A function optionally supplied by your application and called from the Export API. For example, callbacks allow your application to monitor the progress of the conversion process dynamically.
stream	Transmission of a file's content between memory and disk in a continuous flow.
token	The vehicle for conveying specific types of information to and from the API during the conversion process. Tokens are placeholders for markup that appears in the output. See Export Tokens, on page 239.

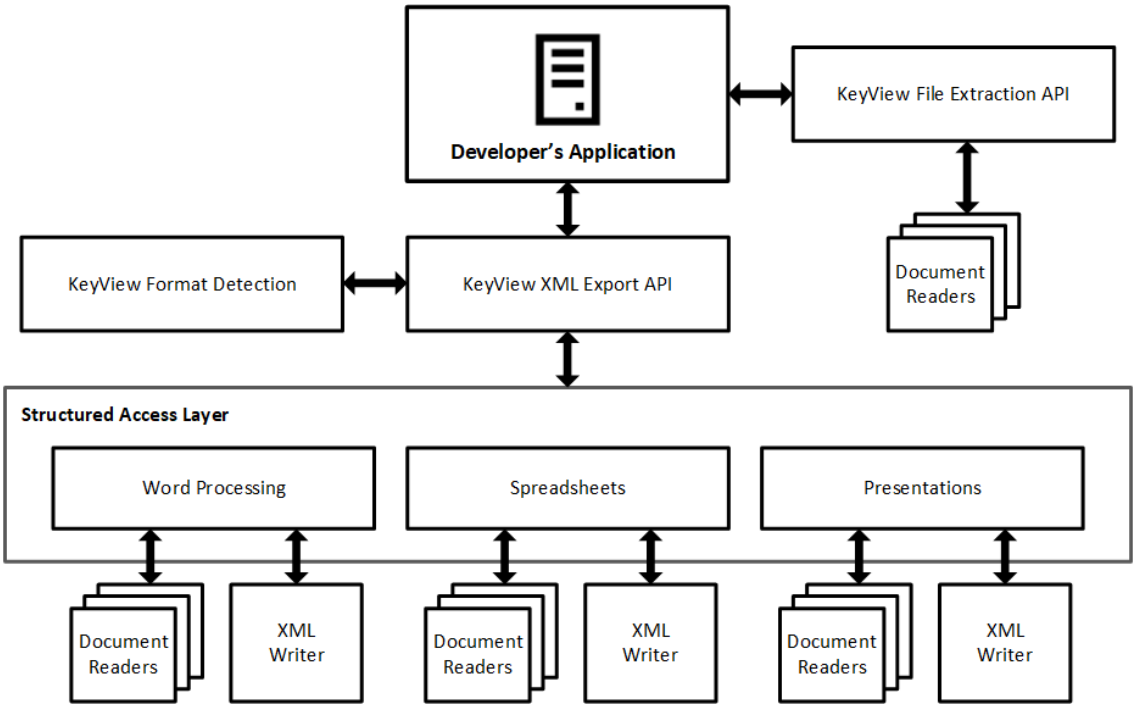
Chapter 2: Getting Started

This section provides an overview of the XML Export SDK and describes how to use the Java implementations of the API.

Architectural Overview

The general architecture of the KeyView XML conversion technology is the same across all supported platforms and is illustrated in the following diagram:

XML Export Architecture



Each component is described in the following table.

Architectural Components

Component	Description
Developer's Application	The developer's application interfaces directly with the XML Export API through either a C or Java implementation.
File Extraction API	The File Extraction API opens a file and extracts the file's subfiles so that the subfiles are available for conversion. See Use the File Extraction API, on page 41.
XML Export API	The XML Export API exposes the functionality of XML Export and controls all other XML Export modules during the conversion process.
Format Detection Module	The format detection module determines the file type of the source file, which enables the XML Export interface to load the appropriate structured access layer module and document reader. See File Format Detection, on page 242.
Structured Access Layer	The structured access layer contains three modules: one for word processing, one for spreadsheets, and one for presentations and graphics. Information from the format detection module determines which access layer module operates at this stage of the conversion. The structured access layer performs the following: 1. Loads the appropriate document reader. 2. Processes the data stream from the document reader. 3. Determines table of contents entries. 4. Sends the stream to the appropriate XML writer. 5. Accepts the XML stream from the XML writer. 6. Generates the XML output file with a table of contents, metadata, and the document's contents, and sends it to the XML Export interface.
Document Reader	Each document reader reads a specific file format and sends a text stream of the document to the structured access layer. Word processing readers return a *token stream* to the structured access layer. A token stream contains the document contents and messages (tokens) that precede the content and identify the type of information that follows them. Each reader is loaded as required by the structured access layer. See Document Readers and Writers, on page 250 for a complete list of document readers.
HTML Writers	Each XML writer accepts a text stream or token stream from the structured access layer and generates an equivalent XML stream that is sent back to the structured access layer. The structured access layer then generates the output file. See Document Readers and Writers, on page 250 for a list of format writers.

Enhance Performance

KeyView is designed for optimal performance out of the box. However, there are some parameters that you can adjust to improve performance specifically for your system.

File Caching

To reduce the frequency of I/O operations, and consequently improve performance, the KeyView readers load file data into memory. The readers then read the data from the cache rather than the physical disk. You can configure the amount of memory used for file caching through the `formats_e.ini` file. Generally, when you increase the memory, performance improves.

By default, KeyView uses a maximum of 1 MB of memory for each thread. If the file data is larger than 1 MB, up to 1 MB of data is cached and the data beyond 1 MB is read from disk. The minimum amount of memory that can be used for file caching is 64 KB.

To determine a reasonable value, divide the maximum amount of memory you want KeyView to use for file caching by the total number of threads. For example, if you want KeyView to use a maximum of 50 MB of memory and have 10 threads, set the value to 5 MB.

To modify the memory allocated for file caching, change the value for the following parameter in the `[DiskCache]` section of the `formats_e.ini` file:

```
DiskCacheSize=1024
```

The value is in kilobytes. If this parameter is not set or is set to **0** (zero), the minimum value of 64 KB is used.

The `formats_e.ini` file is in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

Convert Files

KeyView Export SDK enables you to *convert* many different types of documents to XML. Converting is the process of extracting the text from a document without the application-specific markup, and applying XML markup. The conversion process can also include the following:

- Extracting subfiles to expose all subfiles for conversion. See Subfile Extraction, on page 28.
- Setting conversion options to determine the content, structure, and appearance of the XML output. See Set Conversion Options, on page 29.
- Extracting the file's format to detect a file's format, and report the information to the API, which in turn reports the information to the developer's application. See Extract File Format Information, on page 68.
- Extracting metadata (document properties) from a file. See Extract Metadata, on page 63.
- Converting character sets to control the character set of both the input and the output text. See Convert Character Sets, on page 69.

- Implementing callbacks to control the conversion while it is in progress. See Use Callbacks, on page 37.

You can use one of the following methods to convert documents:

- Use the Java implementation of the API. See Use the XML Export API, on page 31 and the Javadoc in the directory *install*\javaapi\javadoc, where *install* is the path name of the Export installation directory.
- Use the Java sample programs. See Sample Programs, on page 97.

> **NOTE:** Micro Focus strongly recommends that you convert documents *out of process*. During out-of-process conversion, Export runs independently from the calling application. Out-of-process conversions protects the stability of the calling application in the rare case when a malformed document causes Export to fail. Convert Files Out of Process, below.

Convert Files Out of Process

Export can run independently from the calling application. This is called *out of process*. Out-of-process conversions protect the stability of the calling application in the rare case when a malformed document causes Export to fail. You can also run Export in the same process as the calling application. This is called *in process*. However, it is strongly recommended you convert documents out of process whenever possible.

The Export out-of-process framework uses a client-server architecture. The calling application sends an out-of-process conversion request to the Service Request Broker in the main Export process. The Broker then creates, monitors, and manages a Servant process for the request—each request is handled by one independent Servant process. Data is exchanged between the application thread and the Servant through TCP/IP sockets. The source data is sent to the Servant process as a data stream or file, converted in the Servant, and then returned to the application thread. At that point, the application can either terminate the Servant process or send more data for conversion.

Multiple conversion requests can be sent from multiple threads in the calling application simultaneously. All requests sent from one thread are processed by the Servant mapped to that thread. In other words, each thread can only have one Servant to process its conversion requests.

Any standard conversion errors generated by the Servant are sent to the application.

> **NOTE:** Currently, the main Export process and Servant processes must run on the same host.

The following are requirements for running Export out of process:

- Internet Protocol (TCP/IP) must be installed
- Multithreaded processing must be supported on the operating system platform
- The user application must be built with a multithreaded runtime library

The following methods run in-process or out of process:

- convert
- convertTo
- getSummaryInfo

> **NOTE:** When converting out of process, these methods must be called after the call to start an out-of-process session and before the call to end an out-of-process session.

Other XML Export methods and the File Extraction methods always run in-process.

Configure Out-of-Process Conversions

Although most components of the out-of-process conversion are transparent, the following parameters are configurable:

- File-size threshold/temporary file location
- Conversion time-out
- Listener port numbers and time-out
- Connection time-out and retry
- Servant process name

These parameters are defined internally, but you can override the default by defining the parameter in the `formats_e.ini` file. The `formats_e.ini` file is in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

To set the parameters, add the following section to the `formats_e.ini` file:

```
[KVExportOOPOptions]
TempFileSizeMark=
TempFilePath=
WaitForConvert=
WaitForConnectionTime=
ListenerPortList=
ListenerTimeout=
ConnectRetryInterval=
ConnectRetry=
ServantName=
```

Each parameter is described in the following table.

The default values for these parameters are set to ensure reasonable performance on most systems. If you are processing a large number of files, or running Export on a slow machine, you might need to increase some of the time-out and retry values.

Parameters for Out-of-Process Conversion

Parameter	Description
`TempFileSizeMark` unit = megabytes default=10	The *file-size threshold*. If the input file received by the Servant is larger than this value, temporary files are created to store the data. The directory in which the temporary files are stored is defined by the `TempFilePath` parameter. If the file received is smaller than this value, the data is stored in memory in the Servant. This applies only when the input is a stream.
`TempFilePath` type = file path default = current working directory	The directory in which temporary files are stored. Temporary files are created when the input file surpasses the file-size threshold (`TempFileSizeMark`). If the Servant cannot access the file path, an error is generated. This applies only when converting in stream mode.
`WaitForConvert` unit = seconds default = 1800 range = 30~3600	The length of time to wait for a Servant to convert a file. If the conversion is not completed within the specified time, the error code "`Wait for child process failed`" is generated.
`WaitForConnectionTime` unit = seconds default = 180 range = 15~600	The length of time to wait for the Servant to connect to the application thread after the application has sent a conversion request to the Broker. If the Servant does not connect within the specified time, the error code "`Wait for child process failed`" is generated. If there are many Servant processes running simultaneously, you might need to increase this value.
`ListenerPortList` type = integer default = 9985, 9986, 9987, 9988, 9989	The TCP/IP port number used for communication between the calling application and the Servant. You can specify a single port number, or a series of numbers separated by commas.
`ListenerTimeout` unit = seconds default = 10 range = 5~30	The length of time to wait for the Servant listener thread to get a process ID from the Servant after the connection is established. If the ID is not obtained within the specified time, the error code "`Wait for child process failed`" is generated. During this time, no other Servant can connect with the application.
`ConnectRetryInterval` unit = microseconds default = 0.1 range = 50000~500000	The length of time to wait after a Servant has failed to connect to the application before it retries the connection. A Servant might be unable to connect because the application is waiting for another Servant to send a process ID. To calculate the *total retry interval*, the value set here is added to the platform-specific TCP retry value (on Windows, this is 1 second).

Parameters for Out-of-Process Conversion, continued

Parameter	Description
`ConnectRetry` type = integer default = 120 range = 30~600	The number of attempts the Servant makes to connect to the calling application. This value and the total retry interval determine the total delay time. The total delay is calculated as follows: `ConnectRetryInterval` + `platform-specific_TCP_retry_value` * `ConnectRetry` For example, if the `ConnectRetryInterval` is set to 2 seconds, and the Export process is running on Windows (the default TCP retry value on Windows is 1 second), the total delay would be: 2 + 1 * 120 = 360 The Servant would attempt to connect to the application every 3 seconds for 120 attempts for a total of 360 seconds.
`ServantName` type = string default = servant	The name of the Servant process. To move the Servant to another location, enter a fully qualified path.

Run Export Out of Process—Overview

To convert files out of process

1. If required, set parameters for the out-of-process conversion in the `formats_e.ini` file. See Configure Out-of-Process Conversions, on page 24.
2. Instantiate an `XmlExport` object.
3. Define the conversion options.
4. Initialize an out-of-process session.
5. Convert the input and/or call other functions that can run out of process.
6. Shut down the out-of-process session.
7. Repeat Step 3 to Step 6 for additional files.
8. Terminate the out-of-process session and the Servant process.
9. Shutdown the Export session.

Recommendations

- To ensure that multithreaded conversions are thread-safe, you must create a unique context pointer for every thread by instantiating an `XmlExport` object. In addition, threads must not share context pointers, and the same context pointer must be used for all API calls in the same

thread. Creating a context pointer for every thread does not affect performance because the context pointer uses minimal resources.

- All methods that can run in out-of-process mode must be called within the out-of-process session (that is, after the call to initialize the out-of-process session and before the call to end the out-of-process session).
- When terminating an out-of-process session, persist the Servant process by setting the Boolean flag `bKeepServantAlive` in the `endOOPSession` method. If the Servant process remains active, subsequent conversion requests are processed more quickly because the Servant process is already prepared to receive data. Only terminate the Servant when there are no more out-of-process requests.
- To recover from a failure in the Servant process, start a new out-of-process session. This creates a new Servant process for the next conversion.

Run Export Out of Process

The `XmlTest.java` sample program demonstrates how to run Export out of process.

To convert files out of process in the Java API

1. If required, set parameters for the out-of-process conversion in the `formats_e.ini` file. See Configure Out-of-Process Conversions, on page 24.
2. Create an instance of the `XmlExport` class.

   ```
   XmlExport objXmlExport = new XmlExport();
   ```

3. If you are using a template file to set the conversion options, call the `setIniFileName` method.

   ```
   objXmlExport.setIniFileName(iniFile);
   ```

4. If you are using the API to set the conversion options, create instances of the following classes:

   ```
   XmlTemplateInfo
   XmlOptionInfo
   XmlTOCOptionInfo
   StyleMapping
   XmlHeadingInfo
   ```

   Set the classes to the current `XmlExport` object using the appropriate set methods. If you do not set the classes before calling the `startOOPSession` method, default values are used.

5. Set the location of the Export libraries by calling the `setExportDirectory` method. These are normally in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

   ```
   objXmlExport.setExportDirectory(exportDir);
   ```

6. Optionally, set the input source as either a file or stream by calling the `setInputSource` method.

   ```
   // set the input source as a file
   objXmlExport.setInputSource(inFile);
   ```

```
// or set the input source as a stream
inf = new File(inFile);
fis = new FileInputStream(inf);
objXmlExport.setInputSource(fis);
```

The `setInputSource` method also accepts a `com.verity.api.SeekableInputStream`. Micro Focus recommends that you use this option, because it allows KeyView to seek in the file, only reading the parts it needs to read. If you need to use a Java `InputStream`, and you know the stream length, there is a method overload that allows the size to be passed in. Using this might allow KeyView to avoid caching the whole file. For more information, see Input/Output Operations, on page 31.

7. Set up an out-of-process session by calling the `startOOPSession` method. This initializes the out-of-process session, creates a Servant process, establishes a communication channel between the application thread and the Servant, and sends the data to the Servant.

   ```
   objXmlExport.startOOPSession();
   ```

8. Convert the input and generate the output files by calling the `convertTo` method. You cannot use the `convert` methods that set the input source because the input source must be set *before* the out-of-process session is initialized. The `convertTo` method can only be called once in a single out-of-process session.

   ```
   objXmlExport.convertTo(outFile);
   ```

9. Terminate the out-of-process session by calling the `endOOPSession` method. The Servant ends the current conversion session, and releases the source data and session resources.

   ```
   objXmlExport.endOOPSession(TRUE);
   ```

10. Repeat Step 3 through Step 9 for additional files.

11. After all files are converted, terminate the out-of-process session *and* the Servant process by calling `endOOPSession` and setting the Boolean to `FALSE`.

    ```
    objXmlExport.endOOPSession(FALSE);
    ```

12. Terminate the Export session and free allocated system resources by calling the `shutdownExport()` method.

    ```
    m_objExport.shutdownExport();
    ```

Subfile Extraction

To convert a file, you must first determine whether the source file contains any subfiles (attachments, embedded objects, and so on). A file that contains subfiles is called a *container* file. Compressed files (such as Zip), mail messages with attachments (such as Microsoft Outlook Express), mail stores (such as Microsoft Outlook Personal Folders), and compound documents with embedded OLE objects (such as a Microsoft Word document with an embedded Excel chart) are examples of container files.

If the file is a container file, the container must be opened and its subfiles extracted by using the *File Extraction API*. The extraction process is done repeatedly until all subfiles are extracted and exposed for conversion. After a subfile is extracted, you can use the XML Export API to convert the file.

If a file is not a container, you should pass it directly to the XML Export API for conversion without extraction.

See Use the File Extraction API, on page 41 for more information.

Convert Outlook Email without Using the Extraction API

Micro Focus strongly recommends that you convert all container files, including Microsoft Outlook files, by using the File Extraction API. However, you can convert Outlook email messages (MSG) directly by using the Export API and the MSG reader (msgsr).

> **NOTE:** The MSG reader only extracts the message body of an MSG file. Attachments are not extracted.

To convert MSG files by using the MSG reader, add the following to the `formats_e.ini` file (`TRUE` is case-sensitive):

```
[ContainerOptions]
bConvertMSG=TRUE
```

Set Conversion Options

Conversion options are parameters that determine the content, structure, and appearance of the XML output. For example, you can specify:

- the markup inserted at the beginning and end of specific XML blocks
- whether a heading is included in the table of contents
- the output character set
- the resolution at which graphics are converted.

Set Conversion Options by Using the API

You set conversion options using the following methods on your instance of `XmlExport`:

- `setOptionInfo`
- `setTemplateInfo`
- `setTOCOptionInfo`

For more information about these methods and the options that you can set, refer to the Javadoc supplied with the XML Export SDK.

Alternatively, you can set conversion options by passing the path of an initialization file to the API using the `setIniFileName` method on your instance of `XmlExport`. For more information about initialization files, see Explore Conversion Options with the Sample Programs, below.

Explore Conversion Options with the Sample Programs

To make it easier to explore the conversion options, XML Export includes some sample configurations in the form of initialization (`.ini`) files. These are read by the XmlTest sample program (you must supply the `.ini` file path as a command-line argument). The sample program reads the configuration, and converts your input file into XML using the options you set, by passing them into the API. This lets you try out conversion options without programming.

You can use a text editor to customize the configuration files. In general, a section name refers to the structure containing an option, and a parameter name matches an element of that structure. For example:

```
[KVXMLOptions]
eOutputCharSet=KVCS_SJIS
bForceOutputCharSet=TRUE
```

This sets the `eOutputCharSet` and `bForceOutputCharSet` elements in the `KVXMLOptions` structure.

> **NOTE:** To create valid XML, an initialization file *must* define at least two structures: `KVXMLTemplate` and `KVXMLOptions`. Additionally, if you enter markup in the template files that is not compliant with XML standards, XML Export inserts the markup into the output file unchanged. This might result in a malformed XML file.

Templates

The template files for the Java API implementation are in the directory *`install`*`\javaapi\ini\html`, where *`install`* is the path name of the Export installation directory.

The following templates are provided for the Java implementation.

Template	Description
Callback (`xml1filecallback.ini`)	• Based on the single file template (`xml1file.ini`). • Implements a user callback named "`UserCB_End_Block `" at the bottom of the main XML file.
Single file with table of contents (`xml1filetoc.ini`)	• Creates a single XML file. • Creates a table of contents at the top of the XML document. • Uses the `Verity.dtd`. • Uses an XSL style sheet (`wp.xsl`). • Forces the output character set to UTF-8. • Lists all metadata (Title, Subject, Author, Comments, Created, Modified, Last Saved By, and Revision Number).

Template	Description
	• Uses the name of the worksheets for spreadsheets. • Uses the slide titles for presentations. If no titles are available in the source document, it uses "slide 1," "slide 2," "slide 3," and so on.
XML one file (`xml1file.ini`)	• Creates a single XML file. • Does not define an XSL style sheet. A default XSL style sheet that is appropriate to the source document type is used. The defaults supplied are `wp.xsl` (for word processing documents), `ss.xsl` (for spreadsheets), `pg.xsl` (for presentations). • Forces the output character set to UTF-8. • Maintains the source document's fonts and styles. • Does not create a table of contents.

Use the XML Export API

The Java version of the API provides an interface to the core functionality of the C API. It provides two primary classes (`XmlExport` and `XmlExportReader`) that wrap the conversion functionality of the C API. The `XmlExport` class provides access to a family of methods called `convert`. The `XmlExportReader` class is a convenience class to help create SAX2-compliant applications.

The API is implemented in the `com.autonomy.api.export` package, which is contained in the `KeyView.jar` file. The jar file is in the *`install`*`\javaapi` directory, where *`install`* is the path name of the Export installation directory.

For a full description of the Java API classes, see the Javadoc in the directory *`install`*`\javaapi\javadoc`. Sample programs are provided to demonstrate the Java API. See Sample Programs, on page 97.

You can access the Java API directly or by setting conversion options in template files, which are then passed to the API. For more information on template files, see Set Conversion Options, on page 29.

For information on the C API, see the *XML Export C Programming Guide*.

Input/Output Operations

The XML Export Java API supports several input and output methods. The source data can be a file accessed through a file path, a `com.verity.api.SeekableInputStream`, or a standard `java.io.InputStream`. You can send the output to a file, a `java.io.OutputStream`, or return it one chunk at a time in a byte array. The methods in the XML Export Java API have multiple signatures in order to support these options.

You can set the input source by calling the `setInputSource` method, or when using the `convert` method. The latter takes the input source as one of its parameters. When you select a `convert` method, ensure that you use the correct signature for the desired input and output type.

When the input source is a stream, Micro Focus recommends passing a `SeekableInputStream` into KeyView, so that KeyView can read only the parts of the stream it needs to read. If you use a Java `InputStream`, KeyView must store the stream as it is received, writing to a temporary file if the stream is large.

Sometimes, when the source is a Java `InputStream`, you can improve performance by passing in the stream size. If you do not supply the stream size, KeyView reads the entire stream before processing starts. If you can provide the stream size, KeyView might not need to read the whole stream.

Convert Files

To convert files

1. Instantiate an `XmlExport` object.

   ```
   LicenseInfo license = new LicenseInfo("YOUR_ORGANIZATION", "YOUR_KEY");

   m_objExport = new XmlExport(license);
   ```

2. If you are using a template file to set the conversion options, call the `setIniFileName` method. It is recommended you set the full path to the template file.

   ```
   m_objExport.setIniFileName(m_iniFile);
   ```

   Conversion options are parameters that determine the content, structure, and appearance of the XML output. See Set Conversion Options, on page 29.

3. If you are using the API to set the conversion options, create instances of the following classes:

   - `XmlOptionInfo`
   - `XmlTemplateInfo`
   - `XmlTOCOptionInfo`
   - `StyleMapping`
   - `XmlHeadingInfo`

   Conversion options are parameters that determine the content, structure, and appearance of the XML output. Set Conversion Options, on page 29.

   Set the classes to the current `XmlExport` object using the following methods available in the `XmlExport` class:

   - `setOptionInfo`
   - `setTemplateInfo`
   - `setTOCOptionInfo`
   - `setStyleMapping`

and the following method available in the `XmlTOCOptionInfo` class:

- `setXmlHeadingInfo`

4. Set the location of the Export libraries by calling the `setExportDirectory` method. These are normally in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

   ```
   m_objExport.setExportDirectory(m_exportDirectory);
   ```

5. Open the source file by calling the `extOpenDocument` method. This call defines the parameters necessary to open a file for extraction.

   ```
   ExtOpenDocConfig odconfig = null;
   long extContextID = 0;
   odconfig = new ExtOpenDocConfig();
   odconfig.setUserName(m_userName);
   odconfig.setPassword(m_password);
   odconfig.setUserIDFile(m_userIDFile);
   odconfig.setExtractDirectory(m_extractDir);
   odconfig.setCreateRootNode(m_createRootNode);
   extContextID = m_objExport.extOpenDocument(inFile, odconfig);
   ```

6. Determine whether the main file is a container file (that is, whether it contains subfiles) by calling the `extGetMainFileInfo()` method.

   ```
   ExtMainFileInfo maininfo = null;
   maininfo = m_objExport.extGetMainFileInfo(extContextID);
   ```

7. If the call to `extGetMainFileInfo()` determined that the source file is a container file, proceed to Step 8; otherwise, proceed to Step 11.

8. Determine whether the subfile is itself a container (that is, whether it contains subfiles) by calling the `extGetSubFileInfo` method.

   ```
   ExtSubFileInfo subinfo = null;
   if(nSubFiles != 0)
   {
      for(int index = 0; index < nSubFiles; index++)
      {
      subinfo = m_objExport.extGetSubFileInfo(extContextID, index);
      ...
      }
   }
   ```

9. Extract the subfile by calling the `extExtractSubFile` method.

   ```
   ExtSubFileExtractConfig extconfig = null;
   extconfig = new ExtSubFileExtractConfig();
   extconfig.setCreateDirectory(true);
   extconfig.setOverWrite(true); extconfig.setExcludeMailHeader(m_
   excludeMailHeader);
   extinfo = m_objExport.extExtractSubFile(extContextID, index, extconfig);
   ```

10. If the call to `extGetSubFileInfo` determined that the subfile is a container file, repeat Step 5 through Step 9 until all subfiles are extracted; otherwise, proceed to Step 11.
11. Optionally, set the input source as either a file or input stream by calling the `setInputSource` method.

```
if(m_inputMethod == Export.IO_METHOD_FILE)
{
   //input as file
   m_objExport.setInputSource(m_extractDir + filename);
}
else
{
   //input as stream
   File inf = new File(m_extractDir + filename);
   FileInputStream fis = new FileInputStream(inf);
   m_objExport.setInputSource(fis);
   fis.close();
}
```

    The `setInputSource` method also accepts a `com.verity.api.SeekableInputStream`. Micro Focus recommends this option, because it allows KeyView to seek in the file, only reading the parts it needs to read. If you need to use a Java `InputStream`, and you know the stream length, there is a method overload that allows the size to be passed in. Using this might allow KeyView to avoid caching the whole file. For more information, see Input/Output Operations, on page 31.
12. Set up an out-of-process session by calling the `startOOPSession` method. This initializes the out-of-process session, creates a Servant process, establishes a communication channel between the application thread and the Servant, and sends the data to the Servant.

```
m_objExport.startOOPSession();
```

13. Convert the input and generate the output files by calling the `convertTo` method. You cannot use the `convert` methods that set the input source because the input source must be set *before* the out-of-process session is initialized. The `convertTo` method can only be called once in a single out-of-process session.

```
if(m_outputMethod == Export.IO_METHOD_FILE)
{
   //convert to a file
   m_objExport.convertTo(m_extractDir + filename + m_extension);
}
else
{
   //convert to a stream
   File outf = new File(m_extractDir + filename + m_extension);
   FileOutputStream fos = new FileOutputStream(outf);
   m_objExport.convertTo(fos);
   fos.close();
}
```

14. If you are converting additional files, terminate the out-of-process session by calling the `endOOPSession` method and setting the Boolean to **`TRUE`**. The Servant ends the current conversion session and releases the source data and session resources.

    If you are not converting additional files, terminate the out-of-process session and the Servant process by calling `endOOPSession` and setting the Boolean to **`FALSE`**.

    ```
    if(i == (nSubFiles - 1))
    {
       m_keepServantAlive = false;
    }
    else
    {
       m_keepServantAlive = true;
    }
    m_objExport.endOOPSession(m_keepServantAlive);
    ```

15. Close the file by calling the `extCloseDocument()` method.

    ```
    m_objExport.extCloseDocument(extContextID);
    ```

16. Repeat Step 2 through Step 15 for additional source files.

17. Terminate the session and free allocated system resources by calling the `shutdownExport()` method.

    ```
    m_objExport.shutdownExport();
    ```

Multithreaded Conversions

To ensure that multithreaded conversions are thread-safe, you must create a unique Export context for every thread by instantiating an `XmlExport` object. In addition, threads must not share context objects, and you must use the same context object for all API calls in the same thread. Creating a context object for every thread does not affect performance because the context object uses minimal resources.

For example, your Java code should have the following logic in a thread:

```
m_objExport = new XmlExport(license);

m_objExport.setIniFileName(m_iniFile);

m_objExport.setExportDirectory(m_exportDir);

m_objExport.extOpenDocument(inFile, odconfig);

m_objExport.extGetMainFileInfo(extContextID)  /* container file */

m_objExport.extGetSubFileInfo(extContextID, index);

m_objExport.extExtractSubFile(extContextID, index, extconfig);

m_objExport.startOOPSession();

m_objExport.convertTo(outFile);

m_objExport.endOOPSession(bKeepServantAlive TRUE);
```

```
m_objExport.extCloseDocument();

m_objExport.extOpenDocument(inFile, odconfig);

m_objExport.extGetMainFileInfo(extContextID);  /* not a container file */

m_objExport.startOOPSession();

m_objExport.convertTo(outFile);

m_objExport.endOOPSession(bKeepServantAlive TRUE);

m_objExport.extCloseDocument();

...
```

Use Methods in the XmlExportReader Class

To use the methods in the `XmlExportReader` class

1. Ensure that you have a SAX2-compatible XML parser installed on your Java class path. Refer to http://www.saxproject.org.
2. Create the `XmlExportReader` object. If you use the default constructor, set the `org.xml.sax.driver` system property. See `org.xml.sax.helpers.XMLReaderFactory.createXMLReader()` for details.
3. Create the `XmlExport` object. Configure it as described in Convert Files, on page 32, and pass it to `XmlExportReader`.
4. Set the `ContentHandler` using `setContentHandler`, and `ErrorHandler` using `setErrorHandler` of your `XmlExportReader` to either the default or your own setting.
5. Set the location of the `Verity.dtd` by using `setDtdLocation`. This must be an absolute URI (Uniform Resource Identifier). If you do not set this, the `parse()` method will not work.
6. Call the methods that suits your needs.

Example

```
XmlExport objXmlExport = new XmlExport();
XmlExportReader objXmlExportReader = new XmlExportReader();
//use the customized handler "TestHandler"
TestHandler handler = new TestHandler();
objXmlExportReader.setContentHandler(handler);
objXmlExportReader.setErrorHandler(handler);
objXmlExport.setIniFileName(iniFile);
objXmlExport.setExportDirectory(exportDir);
objXmlExportReader.setXmlExport(objXmlExport);
objXmlExportReader.setDtdLocation(dtdLocation);
objXmlExportReader.parse(inpSr);
```

For sample code, see the directory *`install`*`\javaapi\sample`, where *`install`* is the path name of the Export installation directory.

Use Callbacks

Some Export methods enable you to specify a callback, which is called to control the conversion while it is in progress. For example, you can specify a callback to report progress during the conversion.

To use callbacks

1. If you are using the `UserCBCallback` interface, include the `$USERCB` token in a member of `KVXMLTemplate`. For example, placing `"$USERCB=my_callback "` in `pszFirstH1Start` results in a callback at the point when `pszFirstH1Start` is processed. The user callback function is identified by the text assigned to `$USERCB`, which in this example is `my_callback`.

   > **NOTE:** The callback identifier must be delimited by a trailing white space. For example, `"my_callback "`

   The `callback.ini` template file provides an example of how to use callback tokens. The file is in the *`install`*`\javaapi\ini` directory. See Export Tokens, on page 239 for more information on tokens.

2. Implement the callback interfaces. The callback interfaces are:

   - `CallbackConstants`
   - `CallingContext`
   - `ContinueCallback`
   - `GetAnchorCallback`
   - `GetAuxOutputCallback`
   - `UserCBCallback`

   Sample implementations of the callback interfaces are in the *`install`*`\javaapi\sample\com\verity\api\htmlexport` directory, where *`install`* is the path name of the Export installation directory.

3. Declare the objects of the callback procedures you are going to use, and pass them to your instance of `XmlExport`.

Example

```
ContinueCallback cci = new ContinueCallbackImpl();
GetAnchorCallback gaci = new GetAnchorCallbackImpl();
GetAuxOutputCallback gaoci = new GetAuxOutputCallbackImpl();
UserCBCallback ucbi = new UserCBCallbackImpl();
CallingContext cContext = new CallingContextImpl();
objXmlExport.setCallingContext(cContext);
objXmlExport.setContinueCallback(cci);
objXmlExport.setGetAnchorCallback(gaci);
objXmlExport.setGetAuxOutputCallback(gaoci);
objXmlExport.setUserCBCallback(ucbi);
```

Before Running Your Application

Before running your application, set the library path using one of the following methods:

- On Windows, add the location of `xmlexport.dll` to the `PATH` environment variable.
- On Linux and Solaris, add the location of `libxmlexport.so` to the `LD_LIBRARY_PATH` environment variable.
- On AIX, add the location of `libxmlexport.a` to the `LIBPATH` environment variable. You can also specify the library path as a system property as follows:

  ```
  java -Djava.library.path=bin_directory ...
  ```

Use the KeyView Document Type Definition (DTD)

XML Export produces well-formed, valid XML documents. Document validity is based on a Document Type Definition (DTD) called the `Verity.dtd`. The `Verity.dtd` is in the default output directory `tempout`. If the DTD is in a different directory, the full path must be specified in `pszVerityDTDPath`.

The elements in the `Verity.dtd` are based on those defined in the W3C XHTML 1.0 specification and the attributes are based on those defined in the W3C CSS 2 specification.

The root element of each document is "`VerityXMLExport`." Character entities are imported by using the three XHTML DTDs defined at the beginning of the `Verity.dtd`.

```
<!-- Character entities -->
<!ENTITY % HTMLlat1x SYSTEM "HTMLlat1x.ent">
%HTMLlat1x;
<!ENTITY % HTMLspecialx SYSTEM "HTMLspecialx.ent">
%HTMLspecialx;
<!ENTITY % HTMLsymbolx SYSTEM "HTMLsymbolx.ent">
%HTMLsymbolx;
```

Use XML Style Language Transformation (XSLT)

XML Export is designed to generate XML documents based on the `Verity.dtd`. You can convert the XML produced by XML Export to other XML vocabularies, such as Wireless Markup Language (WML), by using XSLT.

Add Elements and Attributes to the DTD

XML Export can only generate XML that conforms to the `Verity.dtd`. You can create your own DTD based on the `Verity.dtd`. You cannot rename the `Verity.dtd`, so make sure you back up the original `Verity.dtd` to another name before making changes.

If you create your own DTD and add elements or attributes that are not defined in the original `Verity.dtd`, you must ensure that the new markup is defined in the XML Export API classes. You can define the markup either by entering the markup directly in the styles, or by populating the styles by using the template files. See Map Styles, on page 72 for more information on mapping styles to user-defined markup.

Move the DTD

The default output directory for the `Verity.dtd` is `programs\tempout`. If you move the `Verity.dtd` to another output directory, you must set the string value of `setVerityDTDPath` to the new location. This path is added to the document type declaration in the XML file.

Part II: Use the Export API

This section explains how to perform some basic tasks using the File Extraction and Export APIs, and describes the sample programs. It contains the following chapters:

- Use the File Extraction API
- Use the XML Export API
- Sample Programs

Chapter 3: Use the File Extraction API

This section describes how to extract subfiles from a container file using the File Extraction API.

Introduction

To convert a file, you must first determine whether the file contains any subfiles (attachments, embedded OLE objects, and so on). A file that contains subfiles is called a *container* file. A container file has a main file (parent) and subfiles (children) embedded in the main file.

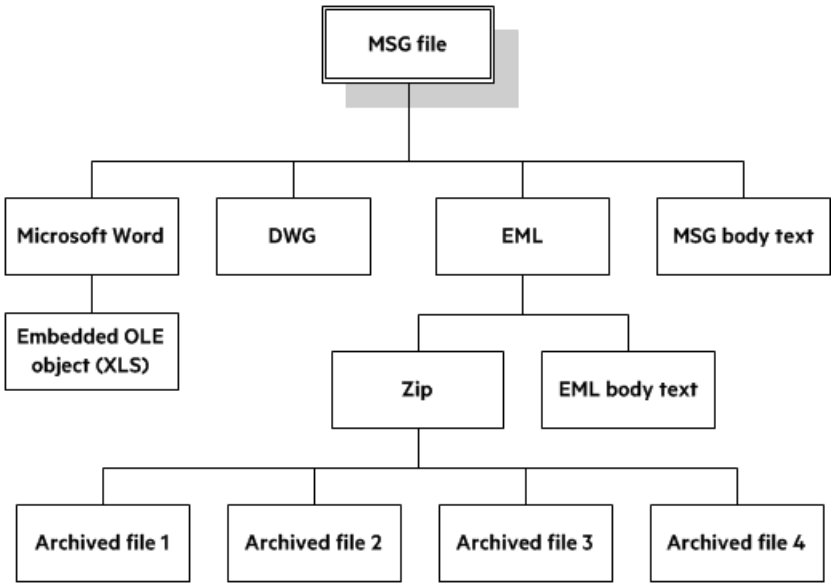
The following are examples of container files:

- Archive files such as ZIP, TAR, and RAR.
- Mail messages such as Outlook (MSG) and Outlook Express (EML).
- Mail stores such as Microsoft Outlook Personal Folders (PST), Mailbox (MBX), and Lotus Notes database (NSF).
- PDF files that contain file attachments.
- Compound documents with embedded OLE objects such as a Microsoft Word document with an embedded Excel chart.

> **NOTE:** Document Readers, on page 178 indicates which formats are treated as container files and are supported by the File Extraction API.

The subfiles might also be container files, creating a file hierarchy of multiple levels. For example, an MSG file (the root parent) might contain three attachments:

- a Microsoft Word document that contains an embedded Microsoft Excel spreadsheet.
- an AutoCAD drawing file (DWG).
- an EML file with an attached Zip file, which in turn contains four archived files.



NOTE: The parent MSG file contains four first-level children. The body text of a message file, although not a standalone file in the container, is considered a child of the parent file.

Extract Subfiles

To convert all files in a container file, the container must be opened and its subfiles extracted to either a file or a stream using the *File Extraction API*. The extraction process is done repeatedly until all subfiles are extracted and exposed for conversion. Once a subfile is extracted, you can call Export API methods to convert the data.

If you require a container file, including subfiles, to be converted to a single file, you must extract all files from the container, convert the files, and then append each converted output to its parent.

To extract subfiles, follow this general procedure

1. Open the source file by calling the `extOpenDocument` method. This call defines the parameters necessary to open a file for extraction.
2. Determine whether the main file is a container file (contains subfiles) by calling the `extGetMainFileInfo()` method.

3. If the call to `extGetMainFileInfo()` determined the source file is a container file, proceed to Step 4; otherwise, convert the file.
4. Determine whether the subfile is itself a container (contains subfiles) by calling the `extGetSubFileInfo` method.
5. Extract the subfile by calling the `extExtractSubFile` method.
6. If the call to `extGetSubFileInfo` determined the subfile is a container file, repeat Step 1 through Step 5 until all subfiles are extracted and the lowest level of subfiles is reached; otherwise, convert the file.

Sanitize Absolute Paths

When you extract a subfile from a container and write it to disk, you specify an extract directory and a path to extract the file to.

To set the path, you might use the path in the container file that you are extracting from, as returned from the `Filter.extGetSubFileInfo()` method. However, if the path is an absolute path, the file could be created outside the directory you have chosen as the extract directory. Your application might then contain a vulnerability that could be exploited to write files to unexpected locations in the file system. This section discusses some KeyView features that can help you secure your application by sanitizing paths.

KeyView always sanitizes relative paths that you pass in when extracting files, so that the paths remain within the extract directory you specify. For example, KeyView does not allow the use of `".."` to move outside the extract directory.

KeyView can update absolute paths so that they remain within the extract directory. You can instruct KeyView to sanitize absolute paths programmatically (through the API), or by setting a parameter in the configuration file.

The following table shows the effect on some example paths.

Requested path	Path of extracted file (not sanitized)	Path of extracted file (sanitized)
`file.txt`	*extractDir*`/file.txt`	*extractDir*`/file.txt`
`dir/file.txt`	*extractDir*`/dir/file.txt`	*extractDir*`/dir/file.txt`
`../file.txt`	*extractDir*`/file.txt`	*extractDir*`/file.txt`
`/dir/file.txt`	`/dir/file.txt`	*extractDir*`/dir/file.txt`

To sanitize absolute paths

- Call the method `setSanitizeAbsolutePaths` on the `ExtSubFileExtractConfig` that you pass in to `extExtractSubFile`. When KeyView sanitizes a path and the resulting directory does not exist, extraction fails unless you instruct KeyView to create the directory, so you might also want to call the method `setCreateDirectory`. You can find the path that a file was actually extracted to from the `ExtSubFileExtractInfo` object that is returned from the `extExtractSubFile` method.

To sanitize absolute paths (through configuration)

- In the `formats_e.ini` configuration file, set the parameter `SanitizeAbsoluteExtractPaths`, for example:

  ```
  [Options]
  SanitizeAbsoluteExtractPaths=TRUE
  ```

Extract Images

You can use the File Extraction API to extract images within a file.

If you use this feature, images within the file behave in the same way as any other subfile. Extracted images have the name `image[X].[Y]`, where `[X]` is an integer, and `[Y]` is the extension. The format of the image is the same as the format in which it is stored in the document.

To extract images

- In `formats_e.ini`, set the following parameter.

  ```
  [Options]
  ExtractImages=TRUE
  ```

Recreate a File Hierarchy

When a container file is extracted, any relationships between the subfiles in the container are not maintained. However, the File Extraction interface provides information that enables you to recreate the hierarchy. The hierarchy can be used to create a directory structure in a file system, or to categorize documents according to their relationship to each other. For example, if you use KeyView to generate text for a search engine, the hierarchical information enables your users to search for a document based on the document's parent or sibling. In addition, when the document is returned to the user, the parent and sibling documents can be returned as recommendations.

The information needed to recreate a file's hierarchy is provided in the call to `extGetSubFileInfo`. Call this method to retrieve an object of the `ExtSubFileInfo` class, then use the `getParentIndex()` and `getChildArray()` methods in this object to retrieve information about the subfile's parent and children. Since you can only retrieve the first-level children in a subfile, you must call `extGetSubFileInfo` repeatedly until information for the leaf-node children is extracted.

Create a Root Node

Because of their structure, some container files do not contain a subfile or folder which acts as a root directory on which the hierarchy can be based. For example, subfiles in a Zip archive can be extracted, but none of the subfiles represent the root of the hierarchy. In this case, an artificial *root node* must be created at the top of the file hierarchy as a point of reference for each child, and

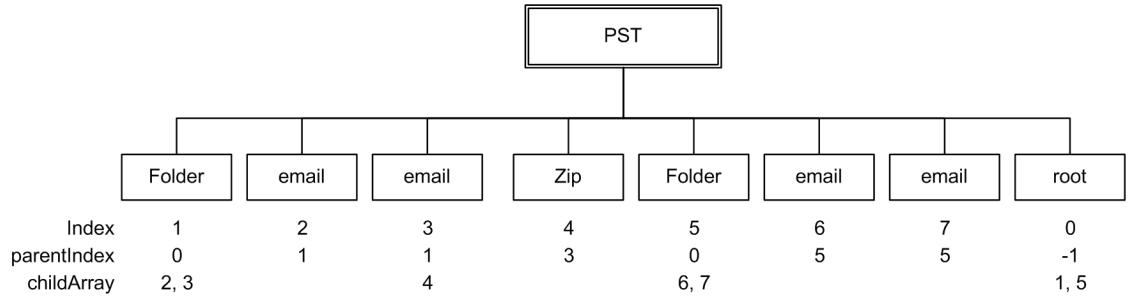
ultimately to recreate the relationships. This artificial root node is an internal object, and is extracted to disk as a directory called `root`. Its index number is 0.

To create a root node, call the `setCreateNode` method in the `ExtOpenDocConfig` object, and pass `ExtOpenDocConfig` to the `extOpenDocument` method. When a root node is created, the value returned from the `getNumSubFiles` method in the `ExtMainFileInfo` object includes the root node. For example, when you call `extGetMainFileInfo` on a Microsoft Word document with three embedded OLE objects and the root node is disabled, the number of subfiles is 3. If you create a root node, the number of subfiles is 4.

Example

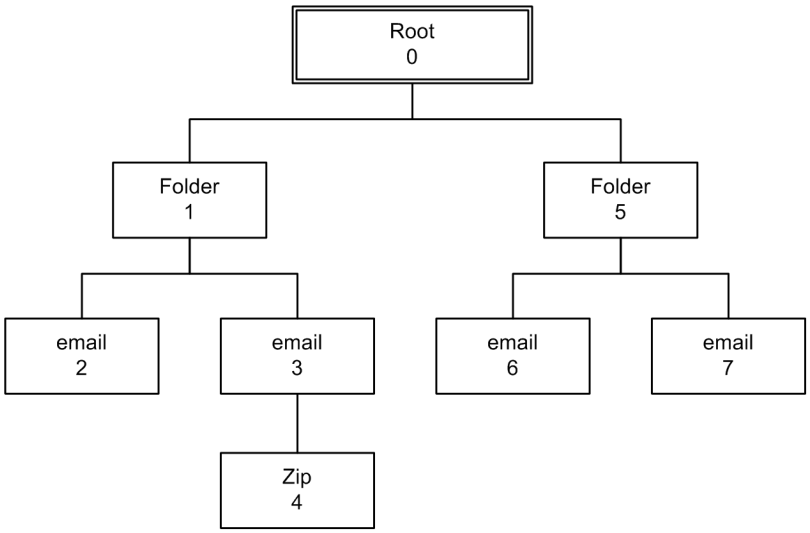
For example, you might extract a PST file that contains seven subfiles with a root node enabled. The call to `extGetMainFileInfo()` returns the number of subfiles as 8 (seven subfiles and one root node). The following diagram shows the structure and the available hierarchy information after the subfiles are extracted:

Extracted PST File



The `parentIndex` specifies the index number of a subfile's parent. The `childArray` specifies an array of a subfile's children. With this information, you can recreate the hierarchy shown in the following diagram:

Recreated File Hierarchy



Extract Mail Metadata

You can extract metadata such as subject, sender, and recipient from subfiles of mail formats by calling the `extGetSubFileMetadata()` method. You can extract a predefined set of metadata fields, or a list of metadata fields by their names or MAPI properties.

Default Metadata Set

KeyView internally defines a set of common mail metadata fields that can be extracted as a group from mail formats. This default metadata set is listed in the following table.

Default Mail Metadata List

Field Name (string to specify)	Description
`From`	The display name and email address of the sender.
`Sent`	The time the message was sent.
`To`	The display names and email addresses of the recipients.
`Cc`	The display names and email addresses of recipients who receive copies of the email.
`Bcc`	The display names and email addresses of recipients who received blind copies of the email.

Default Mail Metadata List, continued

Field Name (string to specify)	Description
`Subject`	The text in the subject line of the message.
`Priority`	The priority applied to the message.

Because mail formats use different terms for the same fields, the format's reader maps the default field name to the appropriate format-specific name. For example, when retrieving the default metadata set, the NSF field *Importance* is mapped to the name *Priority* and is returned.

You can also extract the default field names individually by passing the field name (such as *From*, *To*, and *Subject*); however, in this case, the string is not mapped to the format-specific name. For example, if you pass *Priority* in the call, you will retrieve the contents of the *Priority* field from an MBX file, but will not retrieve the contents of the *Importance* field from an NSF file.

> **NOTE:** You cannot pass the field names listed in MSG-Specific Metadata List, on the next page individually for PST files. However, you can pass either the MAPI tag number or one of the constants in the Export class as integers. See Microsoft Personal Folders File (PST) Metadata, on page 50.

Extract the Default Metadata Set

To extract the default metadata set, call the `extGetSubFileMetadata(long docContextID, int nSubFileIndex, ExtSubFileMetaConfig config)` method.

For example:

```
ExtSubFileMetaConfig metaConfig = new ExtSubFileMetaConfig();

ExtSubFileMetadata subfilemeta = null;

subfilemeta = m_objExport.extGetSubFileMetadata(extContextID, index, metaConfig);
```

Extract All Metadata

KeyView can extract all metadata from subfiles of MSG, EML, MBX, MIME, NSF, ICS, and DXL mail containers.

To extract all metadata, call the `setAllMetadata()` method of the `ExtSubFileMetaConfig` object, and pass `ExtSubFileMetaConfig` to the `extGetSubFileMetadata` method. For example:

```
config = new ExtSubFileMetaConfig();
config.setAllMetadata(true);
subFileMetadata = export.extGetSubFileMetadata(extContextID, i, config);
```

Microsoft Outlook (MSG) Metadata

In addition to the default metadata set, the metadata fields listed in the following table can be extracted for MSG files. The field name must be passed to `metaNameArray` in the call to the `extGetSubFileMetadata()` method.

MSG-Specific Metadata List

Field Name (string to specify)	Description
`AttachFileName`	An attachment's long file name and extension, excluding path.
`ConversationTopic`	The topic of the first message in a conversation thread. A conversation thread is a series of messages and replies. This is the first message's subject with any prefix removed.
`CreationTime`	The time the message or attachment was created. This value is displayed in the **Sent** field in the message's **Properties** dialog in Outlook.
`InternetMessageID`	The identifier for messages that come in over the Internet. This is the MAPI property `PR_INTERNET_MESSAGE_ID`. This property is not in the MAPI headers or MAPI documentation.
`LastModificationTime`	The time the message or attachment was last modified. This value is displayed in the **Modified** field in the message's **Properties** dialog in Outlook.
`Location`	The physical location of the event specified in the Outlook calendar entry.
`MessageID`	The message transfer system (MTS) identifier for the message transfer agent (MTA). This value is displayed on the **Message ID** tab in the message's **Properties** dialog in Outlook.
`Received`	The date and time a message was delivered. This value is displayed in the **Received** field in the message's **Properties** dialog in Outlook.
`Sender`	The name and email address of the message sender. This value is a concatenation of two MAPI properties in the following format: `"PR_SENDER_NAME" <PR_SENDER_EMAIL_ADDRESS>` The `Sender` value might be the same as or different than the default metadata `From` value (see Default Metadata Set, on page 46), depending on which MAPI properties exist in the MSG file.
`Sensitivity`	The value indicating the message sender's opinion of the sensitivity of a message, such as Personal, Private, or Confidential. This value is displayed in the **Sensitivity** field in the message's **Properties** dialog in Outlook.
`TransportMsgHeaders`	Contains transport-specific message envelope information. This value corresponds to the MAPI property `PR_TRANSPORT_MESSAGE_HEADERS`.

MSG-Specific Metadata List, continued

Field Name (string to specify)	Description
`StartDate`	Contains an appointment start date. This value corresponds to the `PR_START_DATE` MAPI property.
`EndDate`	Contains an appointment end date. This value corresponds to the `PR_END_DATE` MAPI property.

Extract MSG-Specific Metadata

To extract specific metadata fields from an MSG file, use the method `extGetSubFileMetadata(long docContextID, int nSubFileIndex, java.lang.String[] metaNameArray, ExtSubFileMetaConfig config)` and pass the field name defined in MSG-Specific Metadata List, on the previous page to `metaNameArray` (the string is not case sensitive).

For example, the following code extracts the contents of the `ConversationTopic` and `MessageID` fields:

```
ExtSubFileMetaConfig metaConfig = new ExtSubFileMetaConfig();

ExtSubFileMetadata subfilemeta = null;

String[] metaNameArray = {"conversationtopic", "MessageID"};

subfilemeta = m_objExport.extGetSubFileMetadata(extContextID, index, metaNameArray, metaConfig);
```

Microsoft Outlook Express (EML) and Mailbox (MBX) Metadata

In addition to the default metadata set, you can extract any metadata field that exists in the header of an EML or MBX file by passing the field's name. If the name is a valid field in the file, the contents of the field are returned. For example, to retrieve the name of the last mail server that received the message before it was delivered, you can pass the string "`Received`".

Extract EML- or MBX-Specific Metadata

To extract specific metadata fields from an EML or MBX file, use the method `extGetSubFileMetadata(long docContextID, int nSubFileIndex, java.lang.String[] metaNameArray, ExtSubFileMetaConfig config)` and pass the metadata name to `metaNameArray` (the string is not case sensitive).

For example, the following code extracts the contents of the `Received` and `Mime-version` fields:

```
ExtSubFileMetaConfig metaConfig = new ExtSubFileMetaConfig();

ExtSubFileMetadata subfilemeta = null;

String[] metaNameArray = {"Received", "Mime-version"};
```

```
subfilemeta = m_objExport.extGetSubFileMetadata(extContextID, index, metaNameArray,
metaConfig);
```

Lotus Notes Database (NSF) Metadata

In addition to the default metadata set, you can extract any Lotus field name that exists in an NSF file by passing the field's name. (You can extract fields from mail NSF files and non-mail NSF files.) If the name is a valid field in the file, the field is returned. For example, to retrieve the date a document in an NSF file was last accessed, you would pass the string "`$LastAccessedDB`".

> **NOTE:** A complete list of NSF fields are provided in the Lotus Notes file `stdnames.h`. This header file is available in the Lotus API Toolkit.

Extract NSF-Specific Metadata

To extract specific metadata fields from an NSF file, use the method `extGetSubFileMetadata(long docContextID, int nSubFileIndex, java.lang.String[] metaNameArray, ExtSubFileMetaConfig config)` and pass the metadata name to `metaNameArray` (the string is not case sensitive).

For example, the following code extracts the contents of the `Description` and `Categories` fields:

```
ExtSubFileMetaConfig metaConfig = new ExtSubFileMetaConfig();

ExtSubFileMetadata subfilemeta = null;

String[] metaNameArray = {"description", "Categories"};

subfilemeta = m_objExport.extGetSubFileMetadata(extContextID, index, metaNameArray,
metaConfig);
```

Microsoft Personal Folders File (PST) Metadata

In addition to the default metadata set, you can extract Messaging Application Programming Interface (MAPI) properties from a PST file. These properties describe elements (subject, sender, recipient, and so on) of Outlook items within the PST file. Since the properties are stored in the PST file itself, they can be retrieved before the contents of the PST are extracted. This enables you to determine whether an Outlook item should be extracted based on a subfile's attributes. MAPI properties are also stored for Outlook attachments that are not mail messages (such as an attached Microsoft Word document or Lotus 1-2-3 file).

MAPI Properties

Each MAPI property is identified by a property tag, which is a constant that contains the property type and a unique identifier. For example, the property that indicates whether a message has attachments has the following components:

Property	`PR_HASATTACH`

Identifier	`0x0E1B`
Property type	`PT_BOOLEAN (000B)`
Property tag	`0x0E1B000B`

The Microsoft MAPI documentation on the Microsoft Developer Network website lists all available MAPI properties, their tags, and types.

You can retrieve any MAPI property that is of one of the MAPI property types listed below:

`PT_I2`	`PT_DOUBLE`	`PT_STRING8`
`PT_I4`	`PT_FLOAT`	`PT_TSTRING`
`PT_BINARY`	`PT_LONG`	`PT_SYSTIME`
`PT_BOOLEAN`	`PT_SHORT`	`PT_UNICODE`

NOTE: Properties with a `PT_TSTRING` type have the property type recompiled to either a Unicode string (`PT_UNICODE`) or to an ANSI string (`PT_STRING8`) depending on the operating system's character set. To retrieve the Unicode property, pass in the Unicode version of the tag. For example, the property tag for `PR_SUBJECT` is either `0x0037001E` for an ANSI string, or `0x0037001F` for a Unicode string.

Extract PST-Specific Metadata

In the call to extract subfile metadata, you can pass either the MAPI tag number (such as `0x0070001e`) or one of the constants in the Export class (such as `KVPR_SUBJECT`). These constants are a subset of MAPI properties and use a KeyView naming convention. For example, the property `PR_CONVERSATION_TOPIC` is defined as `KVPR_CONVERSATION_TOPIC`. If the property you want to retrieve is not defined as a constant in the Export class, you must pass the MAPI tag number.

To extract specific MAPI properties from a PST file, use the method `extGetSubFileMetadata(long docContextID, int nSubFileIndex, int[] metaNameArray, ExtSubFileMetaConfig config)` and pass the tag number or constant to `metaNameArray`.

For example, the following code extracts the MAPI properties `PR_SUBJECT` and `PR_ALTERNATE_RECIPIENT`:

```
ExtSubFileMetaConfig metaConfig = new ExtSubFileMetaConfig();

ExtSubFileMetadata subfilemeta = null;

int[] metaNameArray = {Export.KVPR_SUBJECT, 0x3A010102};

subfilemeta = m_objExport.extGetSubFileMetadata(extContextID, index, metaNameArray,
metaConfig);
```

Exclude Metadata from the Extracted Text File

When a mail message is extracted, the message text and header information (`To`, `From`, `Sent`, and so on) is also extracted. You can prevent the header information from appearing in the text file.

To exclude the header information, call the `setExcludeMailHeader()` method of the `ExtSubFileExtractConfig` object, and pass `ExtSubFileExtractConfig` to the `extExtractSubFile` method. For example:

```
m_excludeMailHeader = true;

extconfig = new ExtSubFileExtractConfig();

extconfig.setExcludeMailHeader(m_excludeMailHeader);

extinfo = m_objExport.extExtractSubFile(extContextID, i, extconfig);
```

Extract Subfiles from Outlook Files

When you extract an Outlook file (MSG) to disk, the message text and header information (`To`, `From`, `Sent`, and so on) is extracted to a text file. (If you do not want the header information to appear in the text file, see Exclude Metadata from the Extracted Text File, on the previous page.) If the Outlook file contains a non-mail attachment, the attachment is extracted in its native format to a subdirectory. If the Outlook file contains a mail attachment, the attachment's message text and any attachments are extracted to a subdirectory.

Extract Subfiles from Outlook Express Files

When you extract an Outlook Express (EML) file to disk, the message text and header information (`To`, `From`, `Sent`, and so on) is extracted to a text file. (If you do not want the header information to appear in the text file, see Exclude Metadata from the Extracted Text File, on the previous page.) If the Outlook Express file contains a non-mail attachment, the attachment is extracted in its native format to the same directory as the message text file. If the Outlook Express file contains a mail attachment, the complete attachment (including message text and attachments), the message text file, and any non-mail attachments are extracted to the same directory as the main message.

> **NOTE:** When the MBX reader (`mbxsr`) is enabled, it is used to filter MBX and EML files. If the MBX reader is not enabled, the EML reader (`emlsr`) is used.

Extract Subfiles from Mailbox Files

A Mailbox (MBX) file is a collection of individual emails compiled with RFC 822 and RFC 2045 - 2049 (MIME), and divided by message separators. There are many mail applications that export to an MBX format, such as Eudora Email and Mozilla Thunderbird.

When an MBX file is extracted to disk, the message text and header information (`To`, `From`, `Sent`, and so on) from each mail file are extracted to text files. (If you do not want the header information to appear in the text file, see Exclude Metadata from the Extracted Text File, on the previous page.)

In Eudora MBX files, attachments are inserted as a link and are stored externally from the message. These attachments are not extracted, but the path to the attachment is returned in the call to the `extGetSubFileInfo` method. You can write code to retrieve the attachment based on the returned path.

For MBX files from other clients, KeyView extracts attachments when they are embedded in the message.

> **NOTE:** The Mailbox (MBX) reader is an advanced feature and is sold and licensed separately. To enable this reader in a KeyView SDK, you must obtain the appropriate license key from Micro Focus.

Extract Subfiles from Outlook Personal Folders Files

KeyView can extract Outlook items such as messages, appointments, contacts, tasks, notes, and journal entries from a PST file. When a PST file is extracted to disk, the body text and header information (`To`, `From`, `Sent`, and so on) from each Outlook item is extracted to a text file. (If you do not want the header information to appear in the text file, see Exclude Metadata from the Extracted Text File, on page 51.)

You can also extract messages from PST files as MSG files, including all their attachments, using the `setSaveAsMSG()` method in the `ExtSubFileExtractConfig` class.

If an Outlook item contains a non-mail attachment, the attachment is extracted in its native format to a subdirectory. If an Outlook item contains an Outlook attachment, the attached item's body text and any attachments are extracted to a subdirectory.

> **NOTE:** The Microsoft Outlook Personal Folders (PST) readers are an advanced feature and are sold and licensed separately. To enable these readers in a KeyView SDK, you must obtain an appropriate license key from Micro Focus. For information about adding a new license key to an existing installation, see Pass License Information to KeyView, on page 16.

Choose the Reader to use for PST Files

KeyView provides several ways of processing PST files:

- Indirectly, using the Microsoft Messaging Application Programming Interface (MAPI). MAPI is a Microsoft interface that enables different applications to exchange messages and attachments with each other. MAPI allows KeyView to open a PST file, traverse the folders, and extract items. The `pstsr` reader uses MAPI, but works only on Windows and requires that Microsoft Outlook is installed.
- Directly, without relying on the Microsoft interface to the PST format. Accessing the file directly does not require Microsoft Outlook. The `pstxsr` reader is available only on certain platforms (see pstxsr in the platform differences section). The `pstnsr` reader is an alternative native reader, for the platforms not supported by `pstxsr`.

On Windows, the MAPI-based reader is used by default but you can choose `pstxsr` if you prefer. On non-Windows platforms, only one of the native readers is available.

The differences between the readers are summarized in the following table.

Feature	Native Reader (pstxsr)	Native Reader (pstnsr)	MAPI-based Reader (pstsr)
Platforms supported	Windows x86 and x64 Linux x64 and AArch64	All platforms not supported by `pstxsr`	Windows x86 and x64
Outlook required	No	No	Yes
MAPI properties supported	Yes. All properties defined in `mapitags.h`. Object properties are not supported.		
Password protection supported	Yes	Yes	Yes (using `KVCredential` structure)
Compressible encryption supported	Yes	Yes	Yes
High encryption supported	No	No	Yes

To change the reader used to process PST files, change the PST entry (file category value `297`) in the `formats_e.ini` file. For example, to use `pstxsr`:

```
297=pstx
```

NOTE: You must make sure that the PST that you are extracting is not open in the Outlook client, and that the Outlook process is not running.

NOTE: When extracting subfiles from PST files, information on the distribution list used in an email is extracted to a file called `emailname.dist`. This applies to the MAPI reader (`pstsr`) only.

System Requirements

MAPI is supported on Windows platforms only and relies on functionality in Outlook. If you want to use the MAPI-based reader, `pstsr`, Microsoft Outlook must be installed on the same machine as your application. Outlook must also be the default email application. KeyView supports the following PST formats and Outlook clients:

- Outlook 97 or later PST files

  NOTE: The Outlook client must be the same version as, or newer than, the version of Outlook that generated the PST file.

- Outlook 2002 or later clients

> **NOTE:** You must install an edition of Microsoft Outlook (32-bit or 64-bit) that matches the KeyView software. For example, if you use 32-bit KeyView, install 32-bit Outlook. If you use 64-bit KeyView, install 64-bit Outlook.
>
> If the editions do not match, KeyView returns `Error 32: KVError_PSTAccessFailed` and an error message from Microsoft Office Outlook is displayed: `Either there is a no default mail client or the current mail client cannot fulfill the messaging request. Please run Microsoft Outlook and set it as the default mail client.`

MAPI Attachment Methods

The way in which you can access the contents of a PST message attachment is determined by the MAPI *attachment method* applied to the attachment. For example, if the attachment is an embedded OLE object, it uses the `ATTACH_OLE` attachment method. KeyView can access message attachments that use the following attachment methods:

`ATTACH_BY_VALUE`

`ATTACH_EMBEDDED_MSG`

`ATTACH_OLE`

`ATTACH_BY_REFERENCE`

`ATTACH_BY_REF_ONLY`

`ATTACH_BY_REF_RESOLVE`

Attachments using the `ATTACH_BY_VALUE`, `ATTACH_EMBEDDED_MSG`, or `ATTACH_OLE` attachment methods are extracted automatically when the PST file is extracted. An "attach by reference" method means that the attachment is not in Outlook, but Outlook contains an absolute path to the attachment. Before you can extract these types of attachments, you must retrieve the path to access the attachment.

To extract "attach by reference" attachments

1. Determine whether the attachment uses an `ATTACH_BY_REFERENCE`, `ATTACH_BY_REF_ONLY`, or `ATTACH_BY_REF_RESOLVE` method by retrieving the MAPI property `PR_ATTACH_METHOD`.
2. If the attachment uses one of the "attach by reference" methods, get the fully qualified path to the attachment by retrieving the MAPI properties `PR_ATTACH_LONG_PATHNAME` or `PR_ATTACH_PATHNAME`.
3. You can then either copy the files from their original location to the path where the PST file is extracted, or use the Export API methods to convert the attachment.

Open Secured PST Files

KeyView enables you to specify credentials (user name and password), which are used to open a secured PST file for extraction.

Detect PST Files While the Outlook Client is Running

If you are running an Outlook client while running the File Extraction API, the KeyView format detection module (`kwad`) might not be able to open the PST file to determine the file's format because Outlook has the file locked. In this case, you can do one of the following:

- Close Outlook when using the Extraction API
- Detect PST files by extension only and bypass the format detection module. To enable this option, add the following lines to the `formats_e.ini` file.

  ```
  [container_flags]

  detectPSTbyExtension=1
  ```

  > **NOTE:** The `detectPSTbyExtension` option only applies when you are using the MAPI reader (pstsr).

  > **NOTE:** If you use this option, you must make sure in your code that valid PST files are passed to KeyView because the format detection module will not be available to verify the file type and pass the file to the appropriate reader.

Extract Subfiles from Lotus Domino XML Language Files

When you extract a Lotus Domino XML Language (.DXL) file, the message text and header information (*To*, *From*, *Sent*, and so on) is extracted to a text file.

> **NOTE:** To prevent header information from being extracted, see Exclude Metadata from the Extracted Text File, on page 51.

You can make sure that dates and times extracted from Lotus Domino .DXL files are displayed in a uniform format.

To extract custom date/time formats

- In the formats_e.ini file, set the `DateTimeFormat` option in the `[dxlsr]` section. For example:

  ```
  [dxlsr]
  DateTimeFormat=%m/%d/%Y %I:%M:%S %p
  ```

  In this example, dates and times are extracted in the following format:

  02/11/2003 11:36:09 AM

  The format arguments are the same as those for the `strftime()` function. See http://msdn.microsoft.com/en-us/library/fe06s4ak%28VS.71%29.aspx for more information.

Extract .DXL Files to HTML

You can use the file extraction API to process .DXL files with an XSLT engine. The XSLT engine then transforms the extracted .DXL to .mail HTML files.

To extract .DXL files to HTML

- Set the following options in the `formats_e.ini` file:

```
[nsfsr]
ExportDXL=1
ExportDXL_PureXML=1
[dxlsr]
LNDParser=2
```

Extract Subfiles from Lotus Notes Database Files

A Lotus Notes database is a single file that contains multiple documents called *notes*. Notes include design notes (such as forms, views, folders, navigators, outlines, pages, framesets, agents, and resources), data document notes, profile document notes, access control list notes, and collection (index) notes. KeyView can extract text items, attachments, and OLE objects from *data document notes* only. Data document notes include emails, journal entries, discussion threads, documents (Microsoft Office and Lotus SmartSuite), and so on.

All components of a note are prefixed by field names such as "`SendTo:`", "`Subject:`", and "`Body:`". When a note is extracted, the field names are not included in the extracted output; only the field values are extracted.

When a mail message in an NSF file is extracted to disk, the body text and header information (such as the values from the `SendTo`, `From`, and `DeliveredDate` fields) in each message is extracted to a text file. (If you do not want the header information to appear in the message text file, see Exclude Metadata from the Extracted Text File, on page 51.)

> **NOTE:** The Lotus Notes Database (NSF) reader is an advanced feature and is sold and licensed separately. To enable this reader in a KeyView SDK, you must obtain the appropriate license key from Micro Focus.

System Requirements

The Lotus Notes Database (NSF) reader is available only on certain platforms (see nsfsr in the platform differences section).

KeyView accesses NSF files indirectly by using the Lotus Notes API. Because the NSF reader relies on functionality in Lotus Notes, a Notes client or Domino server must be installed and configured on the same machine as KeyView. On UNIX and Linux, the Domino server is required. On Windows, the

Notes client or Domino server is required. For information about the supported versions of Notes or Domino, see Software Dependencies, on page 12.

Installation and Configuration

Before KeyView can convert NSF files, you must set up the Notes client or Domino server. Full configuration is not required. The following steps outline the minimal setup for NSF conversion:

Windows

1. Install the Lotus Notes client or Lotus Domino server. You do not need to configure the client or server.
2. Make sure that the `notes.ini` file is in the proper location.
   - If Lotus Notes is installed, the file should appear in the *`install`*`\lotus\notes` directory, where *`install`* is the installation directory.
   - If only Lotus Domino is installed, the file should appear in the *`install`*`\lotus\domino` directory, where *`install`* is the installation directory.

   If the file does not exist, create an ASCII file named `notes.ini`, and add the following text:

   ```
   [Notes]
   ```
3. Add the KeyView `bin` directory and the *`install`*`\lotus\notes` or *`install`*`\lotus\domino` directory to the `PATH` environment variable (the KeyView `bin` directory must be first in the path). Micro Focus recommends that you add the KeyView `bin` directory because the Lotus Notes or Domino server installation might contain older KeyView OEM libraries.

Linux

1. Install Lotus Domino server. You do not need to configure the server.
2. Make sure that the `notes.ini` file is in the *`install`*`/lotus/notes/latest/linux` directory, where *`install`* is the directory where Lotus Notes is installed. If the file does not exist, create an ASCII file named `notes.ini`, and add the following text:

   ```
   [Notes]
   ```
3. Add the *`install`*`/lotus/notes/latest/linux` directory to the `PATH` environment variable:

   ```
   setenv PATH install/lotus/notes/latest/linux:$PATH
   ```
4. Add the *`install`*`/lotus/notes/latest/linux` and the KeyView `bin` directory to the `LD_LIBRARY_PATH` environment variable:

   ```
   setenv LD_LIBRARY_PATH keyview_bin:install/lotus/notes/latest/linux:$LD_LIBRARY_PATH
   ```

   where *`keyview_bin`* is the location of the KeyView `bin` directory. Micro Focus recommends that you add the KeyView `bin` directory because the Lotus Notes installation might contain older KeyView OEM libraries.

AIX 5.x

1. Install the `bos.iocp.rte` file set if it is not already installed, and reboot the machine. See the Lotus Domino server documentation for more information.
2. Install Lotus Domino server. You do not need to configure the server.
3. Make sure that the `notes.ini` file is in the *`install`*`/lotus/notes/latest/ibmpow` directory, where *`install`* is the directory where Lotus Notes is installed. If the file does not exist, create an ASCII file named `notes.ini`, and add the following text:

   ```
   [Notes]
   ```

4. Add the *`install`*`/lotus/notes/latest/ibmpow` directory to the `PATH` environment variable:

   ```
   setenv PATH install/lotus/notes/latest/ibmpow:$PATH
   ```

5. Add the *`install`*`/lotus/notes/latest/ibmpow` and the KeyView `bin` directory to the `LIBPATH` environment variable:

   ```
   setenv LIBPATH keyview_bin:install/lotus/notes/latest/ibmpow:$LIBPATH
   ```

   where *`keyview_bin`* is the location of the KeyView `bin` directory. Micro Focus recommends that you add the KeyView `bin` directory because the Lotus Notes installation might contain older KeyView OEM libraries.

Open Secured NSF Files

KeyView enables you to specify a user ID file and password to use to open a secured NSF file for extraction.

Format Note Subfiles

The KeyView NSF reader uses XML templates to format note subfiles. You can customize the templates to approximate the look and feel of the original notes as closely as possible. For more information, see Extract and Format Lotus Notes Subfiles, on page 226.

Extract Subfiles from PDF Files

KeyView can extract document-level and page-level attachments from a PDF document. Document-level attachments are added by using the **Attach A File** tool, and can include links to or from the parent document or to other file attachments. Page-level attachments are added as comments by using various tools. Page-level or comment attachments display the File Attachment icon or the Speaker icon on the page where they are located. KeyView can also extract the files from Portfolio PDFs.

When a PDF file is extracted to disk, the PDF file is extracted to a directory and the PDF's attachments are saved in their native format to the same directory as the original PDF file.

Improve Performance for PDFs with Many Small Images

To improve performance when processing PDF files that contain many small images, you can choose to ignore images unless they exceed a minimum width and/or height. If an image is smaller than the minimum width or height, KeyView does not extract the image.

For example, to ignore images that are less than 16 pixels wide or less than 16 pixels in height, add the following to the `[pdf_flags]` section of the `formats_e.ini` file:

```
[pdf_flags]
process_images_with_min_width=16
process_images_with_min_height=16
```

Extract Embedded OLE Objects

Embedded OLE objects can be converted in two ways:

- Using the File Extraction API, the OLE object is first extracted from the main file and saved to disk. It can then be converted by making a separate conversion call.
- Using the XML Export API, the main file is converted to XML and the OLE object is converted to a graphics file that is referenced in the XML file.

The File Extraction API can extract embedded OLE objects from the following types of documents:

- Lotus Notes (DXL)
- Microsoft Excel
- Microsoft Word
- Microsoft PowerPoint
- Microsoft Outlook
- Microsoft Visio
- Microsoft Project
- OASIS Open Document
- Rich Text Format (RTF)

When an embedded OLE object is extracted from its parent file, the location of the embedded file in the original document is not available. The parent and child are extracted as separate files.

Extract Subfiles from ZIP Files

You can extract ZIP files that are not password-protected by using the general method (see Extract Subfiles, on page 42). However, some ZIP files use password protection, in which case you must use a different method to enter the required credentials.

Default File Names for Extracted Subfiles

When a file name is not specified in the call to `extExtractSubFile`, in some cases, a default file name is applied to the extracted subfile.

Default File Name for Mail Formats

To avoid naming conflicts and problems with long file names, KeyView applies its own names to the extracted mail folders and mail items when a name is not supplied in the call to `extExtractSubFile`. A non-mail attachment retains its original file name and extension.

When the contents of a mail store or the message body of a mail message are extracted, the extracted file names might include the following:

- The first valid eight characters of the original folder name or "Subject" line of the mail message. If the "Subject" line is empty, the characters `kvext` are used, where `ext` is the format's extension. For example, the characters would be "`kvmsg`" for MSG, and "`kvnsf`" for NSF.

  The following special characters are considered invalid and are ignored:

any non-printing character with a value less than `0x1F`	
angle brackets (< >)	double quotation mark (")
asterisk (*)	forward slash (/)
back slash (\)	pipe (|)
colon (:)	question mark (?)

  For notes, the file name is derived from the first 24 characters of the note text. For contact entries, the file name is derived from the full name of the contact.
- The characters `_kvn`, where `n` is an integer incremented from 0 for each extracted item.
- One of the following extensions:

Type	File Extension
email message	`.mail`
calendar appointment	`.cal`
contact entry	`.cont`
task entry	`.task`
note	`.note`
journal entry	`.jrnl`
distribution list	`.dist`
posting note	`.post`

If the type cannot be determined for an MSG or PST file, the file is given a `.mail` extension.

If the type cannot be determined for an NSF file, the file is given a `.tmp` extension.

For example, an MSG mail message with the subject line "`RE: Product roadmap`" that contains the Microsoft Excel attachment `release_schedule.xls` is extracted as

```
RE produ_kv0.mail

release_schedule.xls
```

If an extracted message contains an embedded OLE object or any attachment that does not have a name, the object or attachment is extracted as `_kv#.tmp`.

Default File Name for Embedded OLE Objects

KeyView can apply a default name to an extracted embedded OLE object when a name is not supplied in the call to `extExtractSubFile`. When an embedded OLE object is extracted, the extracted file name might include the following:

- The first valid eight characters of the main file. The following special characters are considered invalid and are ignored:

  any non-printing character with a value less than `0x1F`

angle brackets (< >)	double quotation mark (")
asterisk (*)	forward slash (/)
back slash (\)	pipe (|)
colon (:)	question mark (?)

- The characters `_kvn`, where `n` is an integer incremented from 0 for each extracted object.
- If KeyView can determine the embedded OLE is a Microsoft Office document, the original extension is used. If the file type cannot be determined, the file is given a `.tmp` extension.

For example, let us say a Microsoft Word document (`sales_quarterly.doc`) contains two embedded OLE objects: a Microsoft Excel file called `west_region.xls`, and a bitmap created in the Word document. The embedded objects would be extracted as

```
sales_qu_kv0.xls

sales_qu_kv1.tmp
```

Chapter 4: Use the XML Export API

This section describes how to perform some basic tasks by using the XML Export API.

Extract Metadata

When a file format supports metadata, KeyView can extract and process that information. Metadata includes document information fields such as title, author, creation date, and file size. Depending on the file's format, metadata is referred to in a number of ways: for example, "summary information," "OLE summary information," "file information," and "document properties."

The metadata in mail formats (MSG and EML) and mail stores (PST, NSF, and MBX) is extracted differently than other formats. For information on extracting metadata from these formats, see Extract Mail Metadata, on page 46.

> **NOTE:** KeyView can extract metadata from a document only if metadata is defined in the document, and if the document reader can extract metadata for the file format. The section Document Readers, on page 178 lists the file formats for which metadata can be extracted. KeyView does not generate metadata automatically from the document contents.

Extract Metadata by Using the API

You can extract the metadata at the API level. The API extracts all valid metadata fields that exist in the file.

To extract metadata using the Java API

1. Set the input source using the `setInputSource` method.
2. Call the `getSummaryInfo()` method of the `Export` object to retrieve an object of the `SummaryInfo` class.
3. Use the methods of the `SummaryInfo` object to retrieve the metadata information.

   The `XmlTest` sample program demonstrates how to extract metadata through the Java API. See XmlTest, on page 99.

Example

```
SummaryInfo[] sinfo = objXmlExport.getSummaryInfo();

if(sinfo != null)
{
  System.out.println("\nSummary info has been extracted.");
  fos_sum = new FileOutputStream(summaryOutFile);
  DataOutputStream dos_sum = new DataOutputStream(fos_sum);

  for(int i=0; i<sinfo.length; i++)
  {
    if(sinfo[i].getElementName() != null)
    {
      dos_sum.writeBytes("Element name: " + sinfo[i].getElementName() + "\n");
      dos_sum.writeBytes("Element type: " + sinfo[i].getSumInfoType() + "\n");

      if(sinfo[i].getIsValid() == true)
      {

        if(sinfo[i].isDateTimeType())
        {
           dos_sum.writeBytes("Date/time: ");
           dos_sum.writeBytes(sinfo[i].getDateTime())
        }
        else
        {
           byte[] data = sinfo[i].getData();

          if(data != null)
          {
             dos_sum.writeBytes("Element data: ");
             dos_sum.write(data);
          }
        }
      }
      dos_sum.writeBytes("\n\n");
    }
  }
```

```
  dos_sum.close();
  fos_sum.close();
}
sinfo = null;
```

The `SummaryInfo` class stores the metadata extraction results. After calling the `XmlExport.getSummaryInfo()` method, call the get methods provided by each instance of this class to extract metadata.

The following describes each get method:

`getElementName()`	This method gets the name of the metadata element.
`getSumInfoType()`	This method specifies the data type of the metadata element. The possible types are: • `KV_String` • `KV_Int4` • `KV_DateTime` • `KV_ClipBoard` • `KV_Bool` • `KV_Unicode` • `KV_IEEE8` • `KV_Other` If type is `KV_Bool`, data contains either `TRUE` or `FALSE`. `KV_DateTime` and `KV_IEEE8` point to an 8-byte value.
`getIsValid()`	This method specifies whether the data value is present in the document. `TRUE` specifies that the value is valid. For example, if the "Title" element was not populated in the document, `getIsValid` would return `FALSE`.
`isDateTimeType()`	This method determines whether the metadata element is of date/time type.
`getDateTime()`	This method gets the date and time in the form of a string. If the metadata element is of date/time type, call this method to get the date and time in the form of a string, for example "Wed Jun 30 21:49:08 1993" or "135 Minutes".
`getData()`	This method gets the content of the element. If the metadata field is a date and time, the type is a 64-bit value representing the number of 100-nanosecond intervals since January 1, 1601. You can also use the `isDateTimeType()` method to determine whether a metadata element is of date/time type, and then use the `getDateTime()` method to obtain the date/time in the form of a string.

Extract Metadata by Using a Template File

When using a template file, KeyView recognizes two types of metadata: *standard* and *non-standard*. Standard metadata includes fields, such as Title, Author, and Subject. The standard fields are enumerated from 1 to 41 in `KVSumType` in the header file `kvtypes.h`. Non-standard metadata includes any field not listed from 1 to 41 in `KVSumType`, such as user-defined fields (for example, custom property fields in Microsoft Word documents), or fields that are unique to a particular file type (for example, "Artist" or "Genre" fields in MP3 files). Enumerated types 42 and greater are reserved for non-standard metadata.

To extract metadata by using a template file

1. Insert metadata tokens in a member of the `KVXMLTemplate` structure in the template file. This defines the point at which the metadata appears in the XML output.
2. If you are using the `$USERSUMMARY` or `$SUMMARY` token, define the `szUserSummary` member of the `KVXMLTemplate` structure in the template file. This determines the markup and tokens generated when these metadata tokens are processed.
3. In your application, read the template file and write the data to the `KVXMLTemplate` structure.

The following metadata tokens can be used in the template files:

Token	Description
`$SUMMARY`*`NN`*	Inserts the data from a *specified* metadata field. *`NN`* is a number from 00 through 42 enumerated in `KVSumType` in `kvtypes.h`.
`$SUMMARY`	Inserts the data from valid metadata fields in the range of 0 to 33 using the markup provided in `pszUserSummary`.
`$USERSUMMARY`	Inserts the data from *every* valid non-standard metadata field using the markup provided in `pszUserSummary`.
`$CONTENT`	Inserts the content of the metadata field specified by the `$NAME` token.
`$NAME`	Inserts the name of a the metadata field, such as "Title," "Author," or "Subject."

Examples

$SUMMARY*NN*

The following markup displays the contents of the "Title" field at the top of the main XML file:

```
szMainTop=$SUMMARY01
```

In `KVSumType`, `01` is the enumerated value for the "Title" metadata field.

$SUMMARY

The following markup extracts all standard fields, and includes them in the first heading level 1 XML block:

```
szFirstH1Start=$SUMMARY
szUserSummary=<MetaData name="$NAME" content="$CONTENT" />
```

This example extracts the field name (`$NAME`) and field content (`$CONTENT`) for standard metadata and includes it at the beginning of the first heading level 1 XML block.

The generated XML might look like this:

```
<MetaData name="CodePage" content="1252" \>
<MetaData name="Title" content="My design document" \>
<MetaData name="Subject" content="design specifications" \>
<MetaData name="Author" content="John Doe" \>
<MetaData name="Keywords" content="" \>
<MetaData name="Comments" content="" \>
<MetaData name="Template" content="Normal.dot" \>
<MetaData name="LastAuthor" content="lchapman" \>
<MetaData name="RevNumber" content="6" \>
<MetaData name="EditTime" content="01/01/1601, 0:08" \>
<MetaData name="LastPrinted" content="14/01/2002, 14:06" \>
<MetaData name="Create_DTM" content="27/08/2003, 10:31" \>
<MetaData name="LastSave_DTM" content="29/08/2003, 14:07" \>
<MetaData name="PageCount" content="1" \>
<MetaData name="WordCount" content="4062" \>
<MetaData name="CharCount" content="23159" \>
<MetaData name="AppName" content="Microsoft Word 9.0" \>
<MetaData name="Security" content="0" \>
<MetaData name="Category" content="software" \>
<MetaData name="LineCount" content="192" \>
<MetaData name="ParCount" content="46" \>
<MetaData name="ScaleCrop" content="FALSE" \>
<MetaData name="Manager" content="" \>
<MetaData name="Company" content="Autonomy" \>
<MetaData name="LinksDirty" content="FALSE" \>
```

$USERSUMMARY

The following markup extracts non-standard fields, and includes them at the bottom of the main XML file:

```
szMainBottom=$USERSUMMARY
szUserSummary=<MetaData name="$NAME" content="$CONTENT" />
```

This example extracts the field name (`$NAME`) and field content (`$CONTENT`) for non-standard metadata from a document, and includes it at the bottom of the main XML file.

The generated XML might look like this:

```
<MetaData name="Telephone number" content="444-111-2222"
<MetaData name="Recorded date" content="07/03/2003, 23:00"
<MetaData name="Source" content="TRUE"
<MetaData name="my property" content="reserved"
```

Extract File Format Information

Export can detect a file's format, and report the information to the API, which in turn reports the information to the developer's application. This feature enables you to apply customized conversion settings based on a file's format. See File Format Detection, on page 242 for more information on format detection.

To extract file format information

1. Set the input source using the `setInputSource` method.
2. Call the `getAutoDetectInfo` method of the `Export` object to retrieve an object of the `AutoDetectInfo` class.
3. Use the methods of the `AutoDetectInfo` object to retrieve the format information.

The `XmlTest` sample program demonstrates how to extract format information through the Java API. See XmlTest, on page 99.

Example

```
AutoDetectInfo adinfo = objHtmlExport.getAutoDetectInfo();
if(adinfo != null)
{
  outf_format = new File(docFormatOutFile);
  fos_format = new FileOutputStream(outf_format);
  DataOutputStream dos_format = new DataOutputStream(fos_format);
  dos_format.writeBytes("Auto-detection result: \n");
  dos_format.writeBytes("\nCharacter set:   " + adinfo.getCharacterSet());
  dos_format.writeBytes("\nDocument class:  " + adinfo.getDocumentClass());
  dos_format.writeBytes("\nDocument format: " + adinfo.getDocumentFormat());
  dos_format.writeBytes("\nFormat version:  " + adinfo.getVersion());
  dos_format.writeBytes("\nOther attributes:");
  if(adinfo.isAppleDoubleEncoded())
  {
    dos_format.writeBytes("\nApple double encoded.");
  }
  if(adinfo.isAppleSingleEncoded())
  {
    dos_format.writeBytes("\nApple single encoded.");
  }
  if(adinfo.isEncrypted())
  {
    dos_format.writeBytes("\nEncrypted.");
  }
  if(adinfo.isMacBinaryEncoded())
  {
    dos_format.writeBytes("\nMac binary encoded.");
  }
```

```
if(adinfo.isWangGDLencoded())
{
  dos_format.writeBytes("\nWang GDL encoded.");
}
dos_format.close();
fos_format.close();
adinfo = null;
```

Convert Character Sets

Export allows you to control the character set of both the input and the output text. This is accomplished by either

- setting the source and/or target character set in the API, or
- basing the input/output on the character set of the document (if the document character set is stored in the document and can be determined by the document reader).

The character sets are defined as constants in the Export class.

Not all character sets can be used to specify the target character set. See Code Character Sets, on page 220 for a list of character sets that can be used as a target character set.

Determine the Character Set of the Output Text

To determine the output character set of a converted document, Export considers the following:

- Whether the reader can extract the character set from the document. This depends on whether the file format can provide character set information and whether the document actually contains character set information.

  The section Document Readers, on page 178 indicates the file formats for which character set information can be extracted. If character set information cannot be determined for your document type, you must set the source, the target character set, or both, in the API.

- Whether a source character set is set in the API.

  > **NOTE:** To set the source character set, you must specify a character set *and* set the parameter `setForceSourceCharSet` to **`TRUE`**.

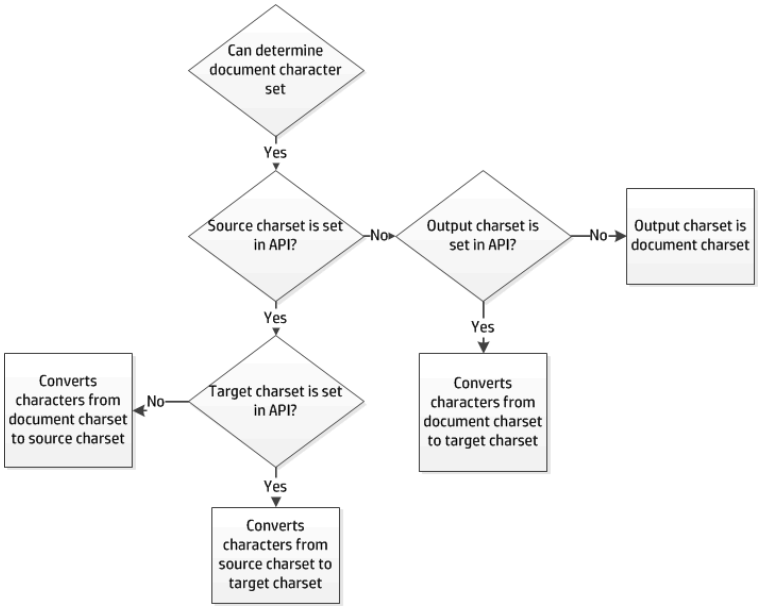
- Whether a target character set is set in the API.

  > **NOTE:** To set the target character set, you must specify a character set *and* set the parameter `setForceOutputCharSet` to **`TRUE`**.

Guidelines for Character Set Conversion

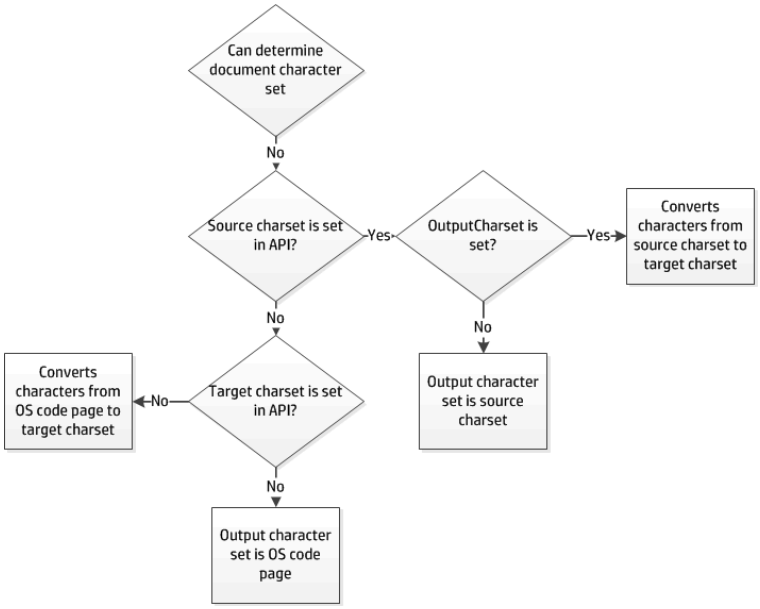
The following diagram shows how the output character set is determined when the document character set can be determined:

Document Character Set Can Be Determined



The following diagram shows how the output character set is determined when the document character set cannot be determined:

Document Character Set Cannot Be Determined



Examples of Character Set Conversion

The examples below demonstrate possible configurations for mapping character sets and the expected output for each scenario.

Document Character Set Can be Determined

For the example in the following table, the document is an RTF file. The section Document Readers, on page 178 indicates that the document character set *can* be obtained from this file type. The document character set is Traditional Chinese (BIG5).

Document character set can be determined

Source charset set	Target charset set	Output charset
KVCS_GB	KVCS_UTF8	KVCS_UTF8 Converts GB (Simplified Chinese) to UTF-8. The output character set is the target character set specified in the API.
KVCS_GB	--	KVCS_GB Converts BIG5 to GB (Simplified Chinese). The output character set is the source character set specified in the API.
--	KVCS_UTF8	KVCS_UTF8 Converts BIG5 to UTF-8. The output character set is the target character set specified in the API.
--	--	KVCS_BIG5 The output character set is the document character set. No conversion.

Document Character Set Cannot be Determined

For the example in the following table, the document is an ASCII file. The section Document Readers, on page 178 indicates that the document character set *cannot* be obtained from this file type. The document character set is KVCS_1251.

Document character set cannot be determined

Source charset set	Target charset set	Output charset
KVCS_1252	KVCS_UTF8	KVCS_UTF8 Converts KVCS_1252 to KVCS_UTF8. The output character set is the target character set specified in the API.
KVCS_1252	KVCS_UNKNOWN	KVCS_1252 The output character set is the source character set specified in the API because KVCS_UNKNOWN cannot be used. No conversion.
KVCS_1252	--	KVCS_1252 The output character set is the source character set specified in the API.

Document character set cannot be determined, continued

Source charset set	Target charset set	Output charset
		No conversion.
--	KVCS_1252	KVCS_1252 Converts OS code page to KVCS_1252. The output character set is the target character set specified in the API.
--	--	The output character set is OS code page. No conversion.

Set the Character Set During Conversion

You can convert the character set of a file at the time the file is converted.

To specify the source character set, use the `setSourceCharSet` method of the `OptionInfo` object and set `setForceSourceCharSet` to **`TRUE`**.

To specify the target character set, use the `setOutputCharSet` method of the `OptionInfo` object and set `setForceOutputCharSet` to **`TRUE`**.

Set the Character Set During File Extraction from a Container

You can convert the character set of a container subfile at the time the subfile is extracted from the container and before it is converted to XML. This is most often used to set the output character set of a mail message's body text. See Use the File Extraction API, on page 41.

To specify the source and target character set of a subfile

1. Use the methods of the `ExtSubFileExtractConfig` object to set the source and target character set.
2. Call the `extExtractSubFile` method of the `Export` object and pass in the `ExtSubFileExtractConfig` object.

Map Styles

Export can map paragraph and character styles in any word processing format that contains styles (such as Microsoft Word, RTF, or Folio Flat File) to user-defined markup. With this feature, you can redact (hide) text in the source document, delete content, or change the overall structure of the output. You can also embed style sheet styles in the output defined in the XML.

To enable style mapping, you must indicate which paragraph and/or character styles are to be mapped, and define the starting and ending markup to be included in the XML output.

For example, if the source Microsoft Word document contains the character style "Recipe," and the content of the style in Microsoft Word is "Brownies," you can specify that the starting markup be `<recipe>` and the ending markup `</recipe>`. This would result in the output XML containing: `<recipe>`Brownies`</recipe>`.

You can also use style mapping to control the look of the XML output either by using a Cascading Style Sheet (CSS) or by defining the style directly in the starting markup. For example, if a Word document contains the paragraph style "Colorful", you can have markup of the form `<p><div class="rainbow">` inserted at the front of the paragraph and markup of the form `</div></p>` inserted at the end of the paragraph. "Rainbow" is a CSS style defined in an externally provided CSS file referenced at the top of the XML output.

If you map styles to elements or attributes that are not defined in the DTD, you must add the new elements or attributes to the DTD. You must also ensure the new markup is defined in the API, either by entering the markup directly in the classes, or by populating the classes using the template files.

Use the Java API

To map styles using the Java API

1. Create an instance of the `StyleMapping` class. Using the object's methods, specify the style mapping information. The information includes
   - the markup to be added to the beginning and end of a paragraph or character style.
   - the name of the word processing style (for example, "Heading 1") to which style mapping applies. Style names are case sensitive.
   - the flag which defines instructions on how to process the content associated with a paragraph or character style. The flags are defined as constants in the Export class and listed in Flags for Defining Styles, on the next page.
2. Call the `setStyleMapping()` method of the `Export` object and pass the `StyleMapping` object.

Use a Template file

To map styles by using a template file

1. Use the `KVStyle` parameter to specify how many styles are being mapped. For example, if there are nine mapped heading levels, add the following:

   ```
   [KVStyle]
   NumStyles=9
   ```

2. For each style, there must be a `[Style`*X*`]` entry that contains the markup that appears at the start and end of the defined style. For example, in the `wordstyle.ini` sample file, the first heading level is defined as follows:

```
[Style1]
StyleName=Colorful
MarkUpStart=<div class="colorful">
MarkUpEnd=<!-- end of colorful --></div>
```

3. For each style, define the flag that applies. Flags define instructions on how to process the content associated with a paragraph or character style.

   They are defined as constants in the Export class and listed in Flags for Defining Styles, below.

   ```
   Flags=KVSTYLE_HEADING3
   ```

A finished entry in a template file could look like this:

```
[KVStyle]
NumStyles=3

[Style1]
StyleName=Colorful
MarkUpStart=<div class="Colorful">
MarkUpEnd=<!-- End of Colorful --></div>
Flags=0

[Style2]
StyleName=RedactPara
MarkUpStart=<div class="RedactPara">
MarkUpEnd=<!-- End of RedactPara --></div>
Flags=2048

[Style3]
StyleName=Code
MarkUpStart=<pre>
MarkUpEnd=<!-- End of Code --></pre>
Flags=KVSTYLE_PRE
```

Flags for Defining Styles

Flag	Description
`KVSTYLE_PRE`	The `KVSTYLE_PRE` flag specifies that white space should be preserved (treated as characters, not word separators), and that mode changes, such as changes in font size within a paragraph, should be ignored. This allows the tags `<pre>` and `</pre>` to be used.
`KVSTYLE_HEADING[1-6]`	The flags `KVSTYLE_HEADING[1-6]` specify that a given style is to be detected and processed as a heading. Heading flags are exclusive. This means a style cannot be processed as both h1 and h2. By default, Export maps the heading style "Heading 1" to `<h1></h1>`, and so on, for heading levels 1 through 6. If you use style mappings, the default mapping is overridden. Therefore, you must supply markup for *all* heading levels. XML Export uses

Flags for Defining Styles, continued

Flag	Description
	heading levels to define the overall structure of the XML output.
KVSTYLE_ORDERLIST	The KVSTYLE_ORDERLIST flag specifies that the style should be tagged as an ordered list. **Currently not implemented**.
KVSTYLE_UNORDEREDLIST	The KVSTYLE_UNORDERLIST flag specifies that the style should be tagged as an unordered list. **Currently not implemented**.
KVSTYLE_DELETECONTENT	The KVSTYLE_DELETECONTENT flag specifies that the content associated with the style tag should be deleted from the output.
KVSTYLE_ ONCONSECUTIVEPARAGRAPHS	The KVSTYLE_ONCONSECUTIVEPARAGRAPHS flag specifies that the style should be applied to consecutive paragraphs of the document. If this flag is used, and two or more paragraphs require the same style, the opening and closing tags that normally appear between each paragraph are not generated.
KVSTYLE_REDACT	The KVSTYLE_REDACT flag is used to hide sensitive or confidential information in the source document. It specifies that the text associated with the style tag should be replaced in the XML output with a selected character. The default replacement character is "X", but you can specify a different replacement character by using the setRedact (java.lang.Byte b) method of the OptionInfo class.
KVSTYLE_DEFAULT	The KVSTYLE_DEFAULT flag specifies that special processing should not be applied to the content.

Use Style Sheets

XML is a content-based metalanguage designed to structure data. XML does not include information about how a document should be displayed in a browser. To view an XML document in a browser, information about how its displayed must be provided by style sheets. These are coded by using either Cascading Style Sheets (CSS) or Extensible Style Sheet Language (XSL).

Use Extensible Style Sheet Language (XSL)

You can use XSL style sheets to specify how XML data is displayed in a browser. You can use existing XSL style sheets, but unlike CSS, style sheet information cannot be written to an external XSL file during the conversion.

Both CSS and XSL style sheets can be used to format XML documents. However, XSL can also transform XML documents. For example, list items can be transformed to display in alphabetical order, words can be replaced by other words, or empty elements can be replaced by text.

To use an existing XSL style sheet

1. Set the style sheet type to XSL by using one of the following methods:
   - Use the `setStyleSheetType` method of the `XmlOptionInfo` class to set the option to **`XmlExport.STYLESHEET_XML_XSL`**.
   - Set the `eStyleSheetType` parameter in a template file to **`XML_XSL`**.
2. Apply a pre-existing style sheet to the XML document by using one of the following methods:
   - Set the `setUseExistingStyleSheet` method of the `XmlOptionInfo` class to **`TRUE`**.
   - Set the `bUseExistingStyleSheet` parameter in a template file to **`TRUE`**.

   > **NOTE:** Pre-existing style sheets are not validated.
3. Specify the path and file name of the external style sheet by using one of the following methods:
   - Use the `setExternalStyleFile(String)` method of the `Export` object.
   - Set the `pszStyleSheet` parameter in a template file.

The external file style sheet is referenced in the XML output by a processing instruction of the form:

```
<xml-stylesheet href="style_file" type="text/xsl"?>
```

If the location of the style sheet is not specified, a default XSL style sheet that is appropriate for the source document type is used. The following are default XSL style sheets:

- `wp.xsl` (for word processing documents)
- `ss.xsl` (for spreadsheets)
- `pg.xsl` (for presentation graphics)

Use Cascading Style Sheets (CSS)

In addition to XSL style sheets, XML Export can write style sheet information to an external CSS file.

> **NOTE:** Cascading style sheets can be used only with word processing documents.

To enable CSS mapping and output the resulting formatting data in an external file

1. Set the style sheet type to CSS by using one of the following methods:
   - Use the `setStyleSheetType` method of the `XmlOptionInfo` class to set the option to **`XmlExport.STYLESHEET_XML_CSS`**.
   - Set the `eStyleSheetType` parameter in a template file to **`XML_CSS`**.
2. Specify the path and file name of the external style sheet by using one of the following methods:

- Use the `setExternalStyleFile(String)` method of the `Export` object.
- Set the `pszStyleSheet` parameter in a template file.

To enable CSS mapping and use an existing CSS file

1. Set the style sheet type to CSS by using one of the following methods:
   - Use the `setStyleSheetType` method of the `XmlOptionInfo` class to set the option to **`XmlExport.STYLESHEET_XML_CSS`**.
   - Set the `eStyleSheetType` parameter in a template file to **`XML_CSS`**.
2. To apply a pre-existing style sheet to an XML document, use one of the following methods:
   - Set the `setUseExistingStyleSheet` method of the `XmlOptionInfo` class to **`TRUE`**.
   - Set the `bUseExistingStyleSheet` parameter in a template file to **`TRUE`**.

     NOTE: Pre-existing style sheets are not validated.
3. Specify the path and file name of the external style sheet by using one of the following methods:
   - Use the `setExternalStyleFile(String)` method of the `Export` object.
   - Set the `pszStyleSheet` parameter in a template file.

The external file style sheet is referenced in the XML output by a processing instruction of the form:

```
<xml-stylesheet href="style_file" type="text/css"?>
```

If `bUseExistingStyleSheet` or `setUseExistingStyleSheet` is `TRUE`, but the location of the style sheet is not specified, a CSS style sheet is created.

Display Vector Graphics on UNIX and Linux

Export offers the option of rasterizing vector graphic content from source documents into a variety of graphics formats including JPEG, PNG, WMF, and CGM. This solution is implemented with Windows Graphical Device Interface (GDI) code, and therefore is not portable to other platforms.

The output format of vector graphics is defined by using the `setOutputVectorGraphicType()` method in the `XmlOptionInfo` class, and the options are defined as constants in the Export class.

To display vector graphics in presentation, word processing, and spreadsheet files on UNIX and Linux, Export can convert the files directly to JPEG by using a Java program named `kvraster.class`. This program uses the Java Abstract Windowing Toolkit (AWT). Alternatively, rather than rasterizing, Export can output text from vector graphics in SVG format, which works the same as on Windows.

To convert the file

1. If rasterizing, add the location of the JRE to the `PATH` environment variable.
2. Use one of the following methods to set the graphic type to JPEG:

- Use the `setOutputVectorGraphicType` method of the `OptionInfo` class to set the type to **`Export.GRAPHIC_TYPE_JPEG`** (for raster output) or **`Export.GRAPHIC_TYPE_SVG`** (for text-only vector output).
- Set the `eOutputVectorGraphicType` parameter of the `defunix.ini` template file to **`KVGFX_JPEG`** (for raster output), or **`KVGFX_SVG`** (for text-only vector output).

3. Convert the document to XML. The graphics in the document are converted to JPEG or SVG and stored in the output directory.

Convert Revision Tracking Information

The revision tracking feature in applications—such as Microsoft Word's **Track Changes**—marks changes to a document (typically, strikethrough for deleted text and underline for inserted text) and tracks each change by reviewer name and date.

If revision tracking was enabled when changes were made to a document, you can configure Export to convert the deleted text and graphics and include revision tracking information in the XML output. (The deleted content and revision tracking information is excluded from the XML output by default.)

Content that was added to the document is identified by `<ins>` tags and is underlined when displayed in a browser. Content that was deleted from the document is identified by `<del>` tags and is displayed with strikethrough formatting.

The `<ins>` and `<del>` tags include `cite` and `datetime` attributes, which define the name of the reviewer who made the change and the date on which the change was made respectively. (The date is in ISO-8601 format: `YYYY-MM-DDThh:mm:ss`.) The tags also include a `title` attribute which displays the author and date information in a browser.

For example, the following markup is generated for inserted text:

```
<ins title="Inserted: JohnD, 2006-04-24Tl4:47:00" cite="mailto:JohnD"
datetime="2006-04-24T14:47:00">This text was added</ins> in a previous version.
```

The following markup is generated for deleted text:

```
<del title="Deleted: JohnD, 2006-04-24Tl4:56:00" cite="mailto:JohnD" datetime="2006-
04-24T14:56:00">This text was deleted</del> in a previous version.
```

To convert deleted text and graphics and include revision tracking information, call the `includeRevisionMark` method. For example:

```
if(inclRevisionMark == true)
{
    objHtmlExport.includeRevisionMark();
}
```

To reset the flag and exclude deleted content and revision tracking information from the XML output, call the `excludeRevisionMark` method. For example:

```
if(inclRevisionMark == false)
{
    objHtmlExport.excludeRevisionMark();
}
```

Convert PDF Files

Export has special configuration options that allow greater control over the conversion of PDF files. These options can improve the fidelity and accuracy of the XML output.

Convert PDF Files to a Logical Reading Order

The PDF format is primarily designed for presentation and printing of brochures, magazines, forms, reports, and other materials with complex visual designs. Most PDF files do not contain the *logical structure* of the original document—the correct reading order, for example, and the presence and meaning of significant elements such as headers, footers, columns, tables, and so on.

KeyView can convert a PDF file either by using the file's internal unstructured paragraph flow, or by applying a structure to the paragraphs to reproduce the logical reading order of the visual page. Logical reading order enables KeyView to produce PDF files that contain languages that read from right-to-left (such as Hebrew and Arabic) in the correct reading direction.

> **NOTE:** The algorithm used to reproduce the reading order of a PDF page is based on common page layouts. The paragraph flow generated for PDFs with unique or complex page designs might not emulate the original reading order exactly.
>
> For example, page design elements such as drop caps, callouts that cross column boundaries, and significant changes in font size might disrupt the logical flow of the output text.

Logical Reading Order and Paragraph Direction

By default, KeyView produces an *unstructured* text stream for PDF files. This means that PDF paragraphs are extracted in the order in which they are stored in the file, not the order in which they appear on the visual page. For example, a three-column article could be output with the headers and the title at the end of the output file, and the second column extracted before the first column. Although this output does not represent a logical reading order, it accurately reflects the internal structure of the PDF.

You can configure KeyView to produce a *structured* text stream that flows in a specified direction. This means that PDF paragraphs are extracted in the order (logical reading order) and direction (left-to-right or right-to-left) in which they appear on the page.

The following paragraph direction options are available.

Paragraph Direction Option	Description
Left-to-right	Paragraphs flow logically and read from left to right. You should specify this option when most of your documents are in a language that uses a left-to-right reading order, such as English or German.
Right-to-left	Paragraphs flow logically and read from right to left. You should specify this option when most of your documents are in a language that uses a right-to-left reading

Paragraph Direction Option	Description
	order, such as Hebrew or Arabic.
Dynamic	Paragraphs flow logically. The PDF reader determines the paragraph direction for each PDF page, and then sets the direction accordingly. When a paragraph direction is not specified, this option is used.

Conversions might be slower when logical reading order is enabled. For optimal speed, use an unstructured paragraph flow.

The paragraph direction options control the direction of paragraphs on a page; they do not control the text direction in a paragraph. For example, let us say that a PDF file contains English paragraphs in three columns that read from left to right, but 80% of the second paragraph contains Hebrew characters. If the left-to-right logical reading order is enabled, the paragraphs are ordered logically in the output—title paragraph, then paragraph 1, 2, 3, and so on—and flow from the top left of the first column to the bottom right of the third column. However, the *text* direction of the second paragraph is determined independently of the page by the PDF reader, and is output from right to left.

NOTE: Extraction of metadata is not affected by the paragraph direction setting. The characters and words in metadata fields are extracted in the correct reading direction regardless of whether logical reading order is enabled.

Enable Logical Reading Order

You can enable logical reading order by using either the API or the `formats_e.ini` file. Setting the direction in the API overrides the setting in the `formats_e.ini` file.

Use the Java API

To enable PDF logical reading order in the Java API

1. Use the `setPDFLogicalOrder(int orderFlag)` method of the `XmlExport` object, and set the `orderFlag` argument to one of the following flags.

Flag	Description
`PDF_LOGICAL_ORDER_LTR`	Logical reading order and left-to-right paragraph direction
`PDF_LOGICAL_ORDER_RTL`	Logical reading order and right-to-left paragraph direction
`PDF_`	Logical reading order. The PDF reader determines the paragraph direction for

Flag	Description
LOGICAL_ ORDER_ AUTO	each PDF page, and then sets the direction accordingly. This option is used when a paragraph direction is not specified.
PDF_ LOGICAL_ ORDER_RAW	Unstructured paragraph flow. This is the default behavior. Set this flag if logical reading order is enabled, and you want to return to an unstructured paragraph flow.

For example,

```
objXMLExport.setPDFLogicalOrder(Export.PDF_LOGICAL_ORDER_RTL);
```

Use the formats_e.ini File

The `formats_e.ini` file is in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

To enable logical reading order by using the formats_e.ini file

1. Change the PDF reader entry in the `[Formats]` section of the `formats_e.ini` file as follows:

   ```
   [Formats]
   200=lpdf
   ```

2. Optionally, add the following section to the end of the `formats_e.ini` file:

   ```
   [pdf_flags]
   pdf_direction=paragraph_direction
   ```

   where *`paragraph_direction`* is one of the following:

Flag	Description
LPDF_ LTR	Left-to-right paragraph direction
LPDF_ RTL	Right-to-left paragraph direction
LPDF_ AUTO	The PDF reader determines the paragraph direction for each PDF page, and then sets the direction accordingly. When a paragraph direction is not specified, this option is used.
LPDF_ RAW	Unstructured paragraph flow. This is the default behavior. If logical reading order is enabled, and you want to return to an unstructured paragraph flow, set this flag.

Control Hyphenation

There are two types of hyphens in a PDF document:

- A *soft hyphen* is added to a word by a word processor to divide the word across two lines. This is a discretionary hyphen and is used to ensure proper text flow in justified text.

- A *hard hyphen* is intentionally added to a word regardless of the word's position in the text flow. It is required by the rules of grammar or word usage. For example, compound words, such as "three-week vacation" and "self-confident" contain hard hyphens.

By default, KeyView maintains the source document's soft hyphens in the output XML to more accurately represent the source document's layout. However, if you are using Export to generate text output for an indexing engine or are not concerned with maintaining the document's layout, Micro Focus recommends that you remove soft hyphens from the XML output. To remove soft hyphens, you must enable the soft hyphen flag.

> **NOTE:** If the soft hyphen flag is enabled, *every* hyphen at the end of a line is considered a soft hyphen and removed from the XML output. If a hard hyphen appears at the end of a line, it is also removed. This might result in an intentionally hyphenated word being extracted without a hyphen.

To remove soft hyphens from the XML output

1. Create an instance of the `ConfigOption` class. Set the `OptionType` argument to **`CFG_DELSOFTHYPHEN`** and the `OptionValue` argument to **`1`**.
2. Call the `setConfigOption` method and pass the `ConfigOption` object.
3. Call a convert method. See the Javadoc in the directory *`install`*`\javaapi\javadoc`, where *`install`* is the path name of the Export installation directory.

Extract Custom Metadata from PDF Files

To extract custom metadata from your PDF files, add the custom metadata names to the `pdfsr.ini` file provided, and copy the modified file to the `\bin` directory. You can then extract metadata as you normally would.

The `pdfsr.ini` is in the directory `samples\pdfini`, and has the following structure:

```
<META>
<TOTAL>total_item_number</TOTAL>,
/metadata_tag_name datatype,
</META>
```

Parameter	Description
`total item number`	The total number of metadata tags that are listed.
`metadata_tag_name`	The metadata tag name used in the PDF files.
`datatype`	The data type of the metadata field. The possible types are: • `KV_String` • `KV_Int4` • `KV_DateTime` • `KV_ClipBoard` • `KV_Bool`

Parameter	Description
	• KV_Unicode • KV_IEEE8 • KV_Other

For example:

```
<META>
<TOTAL> 4 </TOTAL>
/part_number     INT4
/volume          INT4
/purchase_date   DATETIME
/customer        STRING
</META>
```

Configure the Size of Exported Images

When you use the pdf2sr reader to export images of the pages in a PDF file, you can configure the size of the images produced by KeyView.

> **NOTE:** When a page in a PDF document consists of a single embedded image (such as when the PDF is a scanned document), the page image is output at the original size of the embedded image and the following settings have no effect.

To configure the size of images produced by pdf2sr

1. Open the configuration file formats_e.ini.
2. Find the section [pdf2sr], or create the section if it does not exist.
3. Set the configuration parameters XMLXRes and XMLYRes. XMLXRes specifies the width of the output image and XMLYRes specifies the height.
   - To specify an absolute size, in pixels, use positive values. The aspect ratio is always maintained, so you can set one of the dimensions and set the other parameter to 0. For example, to output images of PDF pages where the height of each image is 400 pixels, use the following configuration:

     ```
     [pdf2sr]
     XMLXRes=0
     XMLYRes=400
     ```

     If you set both XMLXRes and XMLYRes to positive values, KeyView produces the largest image that fits within the specified dimensions (the width or height will be as requested, and the other dimension is smaller than requested if required to preserve the aspect ratio).
   - To specify a relative size, set XMLXRes to a negative value and XMLYRes to 0 (a negative value for XMLYRes is ignored). The aspect ratio is always maintained. For example, to output images of PDF pages where the size of each image is 150% of the original size, use the

following configuration.

```
[pdf2sr]
XMLXRes=-150
XMLYRes=0
```

NOTE: The default values for `XMLXRes` and `XMLYRes` are shown below. These values produce an image at 113% of the original page size:

```
[pdf2sr]
XMLXRes=-113
XMLYRes=0
```

Convert Spreadsheet Files

Export has special configuration options that allow greater control over the conversion of spreadsheet files.

Convert Hidden Text in Microsoft Excel Files

Normally, Export does not convert hidden text from a Microsoft Excel spreadsheet because it is assumed that the text should not be exposed. You can change this default behavior and convert text in hidden rows, columns, and sheets by adding the following lines to the `formats_e.ini` file:

```
[Options]
gethiddeninfo=1
```

Convert Headers and Footers in Microsoft Excel 2003 Files

Normally, Export does not convert headers and footers from Microsoft Excel 2003 spreadsheets. You can change this default behavior and convert headers and footers by adding the following lines to the `formats_e.ini` file:

```
[Options]
ShowHeaderFooter=1
```

Specify Date and Time Format on UNIX Systems

System date and time format information is not stored in Microsoft Excel files. On Windows systems, you can specify a locale setting to determine the date and time format. However, on UNIX systems, the date and time format is set to the U.S. short date format by default (mm/dd/yyyy). To change the format, you must use a `formats_e.ini` option.

To specify the system date and time format on UNIX systems

- In the `formats.ini` file, specify the following options:
  - `SysDateTime`. The format to use when a cell is formatted using the system format including both the date and the time.
  - `SysLongDate`. The format to use when a cell is formatted using the system long date format.
  - `SysShortDate`. The format to use when a cell is formatted using the system short date format.
  - `SysTime`. The format to use when a cell is formatted using the system time format.

  > **NOTE:** These values cannot contain spaces.

  For example, if you specify `SysDateTime=%d/%m/%Y`, dates and times are extracted in the following format:

  28/02/2008

  The format arguments are the same as those for the `strftime()` function. Refer to the following web page for more information.

  See http://linux.die.net/man/3/strftime for more information.

Convert Very Large Numbers in Spreadsheet Cells to Precision Numbers

You can export numbers in Microsoft Excel files and write them to the output without formatting. By default, numbers are exported in the format specified by the Excel file (for example, *General*, *Currency,* and *Date*). Spreadsheets might contain cells that have very large numbers in them. Excel displays the numbers in a scientific notation that rounds or truncates the numbers.

To export numbers without formatting, add the following options in the following lines to the `formats_e.ini` file:

```
[Options]
ignoredefnumformats=1
```

Extract Microsoft Excel Formulas

Normally, the actual value of a formula is extracted from an Excel spreadsheet; the formula from which the value is derived is not included in the output. However, KeyView enables you to include the value as well as the formula in the output. For example, if Export is configured to extract the formula and the formula value, the output might look like this:

```
245 = SUM(B21:B26)
```

The calculated value from the cell is `245`, and the formula from which the value is derived is `SUM(B21:B26)`.

NOTE: Depending on the complexity of the formulas, enabling formula extraction might result in slightly slower performance.

To set the extraction option for formulas, add the following lines to the `formats_e.ini` file:

```
[Options]
getformulastring=option
```

where *option* is one of the following:

Option	Description
0	Extract the cell value only. This is the default.
1	Extract the formula only.
2	Extract the formula and the cell value.

NOTE: If a function in a formula is invalid, and option 1 or 2 is specified, only the calculated value is extracted.

Convert XML Files

Export enables you to extract all or selected content from source XML files (see Configure Element Extraction for XML Documents, below). It detects the following XML formats:

- generic XML
- Microsoft Office 2003 XML (Word, Excel, and Visio)
- StarOffice/OpenOffice XML (text document, presentation, and spreadsheet)

See File Format Detection, on page 242 for more information on format detection.

Configure Element Extraction for XML Documents

When you convert XML files, you can specify which elements and attributes are extracted according to the file's format ID or *root element*. This is useful when you want to extract only relevant text elements, such as abstracts from reports, or a list of authors from an anthology.

A root element is an element in which all other elements are contained. In the XML sample below, book is the root element:

```
<book>
  <title>XML Introduction</title>
  <product id="33-657" status="draft">XML Tutorial</product>
  <chapter>Introduction to XML
     <para>What is HTML</para>
     <para>What is XML</para>
```

```
  </chapter>
  <chapter>XML Syntax
     <para>Elements must have a closing tag</para>
     <para>Elements must be properly nested</para>
  </chapter>
</book>
```

For example, you could specify that when converting files with the root element `book`, the element `title` is extracted as metadata, and only `product` elements with a `status` attribute value of `draft` are extracted.

When you extract an element, the child elements within the element are also extracted. For example, if you extract the element `chapter` from the sample above, the child element `para` is also extracted.

Export defines default element extraction settings for the following XML formats:

- generic XML
- Microsoft Office 2003 XML (Word, Excel, and Visio)
- StarOffice/OpenOffice XML (text document, presentation, and spreadsheet)

These settings are defined internally and are used when converting these file formats; however, you can modify their values.

In addition to the default extraction settings, you can also add custom settings for your own XML document types. If you do not define custom settings for your own XML document types, the settings for the generic XML are used.

Modify Element Extraction Settings

You can modify configuration settings for XML documents by using the API.

You can also test this feature by modifying the `kvxconfig.ini` file, and passing it to the sample program `xmlConvFileToFile`.

> **NOTE:** You can use customized element extraction settings only when converting files in process. When converting out of process, the default extraction settings are used.

Use the Java API

You can use the Java API to modify the settings for the standard XML document types, or to add configuration settings for your own XML document types.

To modify settings

1. Declare an array of `XMLConfigSet` objects.
2. Create an instance of the `ConfigOption` class with the following arguments:
   a. Set the `OptionType` to **`CFG_SETXMLCONFIGINFO`**.
   b. Set the `OptionValue` to **`0`**.
   c. Set `OptionData` to the array object.

3. Call the `setConfigOption` method, and pass the `ConfigOption` object.
4. Call a convert method. For example:

```
XMLConfigSet[] XMLInfo;
ConfigOption config=new ConfigOption(Export.CFG_SETXMLCONFIGINFO, 0, XMLInfo);
objExport.setConfigOption(config);
```

Modify Element Extraction Settings in the kvxconfig.ini File

The `kvxconfig.ini` file contains default element extraction settings for supported XML formats. The file is in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

For example, the following entry defines extraction settings for the Microsoft Visio 2003 XML format:

```
[config3]
eKVFormat=MS_Visio_XML_Fmt
szRoot=
szInMetaElement=DocumentProperties
szExMetaElement=PreviewPicture
szInContentElement=Text
szExContentElement=
szInAttribute=
```

The following options are available.

Configuration Option	Description
`eKVFormat`	The format ID as detected by the KeyView detection module. This determines the file type to which these extraction settings apply. See File Format Detection, on page 242 for more information on format ID values. If you are adding configuration settings for a custom XML document type, this is not defined.
`szRoot`	The file's root element. When the format ID is not defined, the root element is used to determine the file type to which these settings apply. To further qualify the element, specify its namespace. See Specify an Element's Namespace and Attribute, on the next page.
`szInMetaElement`	The elements extracted from the file as metadata. All other elements are extracted as text. Multiple entries must be separated by commas. To further qualify the element, specify its namespace, its attributes, or both. See Specify an Element's Namespace and Attribute, on the next page.
`szExMetaElement`	The child elements in the included metadata elements that are not extracted from the file as metadata. For example, the default extraction settings for the Visio XML format extract the `DocumentProperties` element as metadata. This element includes child elements such as `Title`, `Subject`, `Author`, `Description`, and so on. However, the child

Configuration Option	Description
	element `PreviewPicture` is defined in `szExMetaElement` because it is binary data and should not be extracted. You cannot exclude any metadata elements from the output for StarOffice files. All metadata is extracted regardless of this setting. Multiple entries must be separated by commas. To further qualify the element, specify its namespace, its attributes, or both. See Specify an Element's Namespace and Attribute, below.
`szInContentElement`	The elements extracted from the file as content text. Enter an asterisk (*) to extract all elements including child elements. Multiple entries must be separated by commas. To further qualify the element, specify its namespace, its attributes, or both. See Specify an Element's Namespace and Attribute, below.
`szExContentElement`	The child elements in the included content elements that are not extracted from the file as content text. Multiple entries must be separated by commas. To further qualify the element, specify its namespace, its attributes, or both. See Specify an Element's Namespace and Attribute, below.
`szInAttribute`	The attribute values extracted from the file. If attributes are not defined here, attribute values are not extracted. Enter the namespace (if used), element name, and attribute name in the following format: *`namespace:elementname@attributename`* For example: `keyview:division@name` Separate multiple entries with commas.

Specify an Element's Namespace and Attribute

To further qualify an element, you can specify that the element must exist in a certain namespace, must contain a specific attribute, or both. To define the namespace *and* attribute of an element, enter the following:

`ns_prefix:elemname@attribname=attribvalue`

You must enclose attribute values that contain space in quotation marks.

For example, the following entry:

`bg:language@id=xml`

extracts a `language` element in the namespace `bg` that contains the attribute name `id` with the value of `"xml"`. This entry extracts the following element from an XML file:

```
<bg:language id="xml">XML is a simple, flexible text format derived from
SGML</bg:language>
```

but does not extract:

```
<bg:language id="sgml">SGML is a system for defining markup languages.</bg:language>
```

or

```
<adv:language id="xml">The namespace should be a Uniform Resource Identifier
(URI).</adv:language>
```

Add Configuration Settings for Custom XML Document Types

You can define element extraction settings for custom XML document types by adding the settings to the `kvxconfig.ini` file. For example, for files containing the root element `keyviewxml`, you could add the following section to the end of the initialization file:

```
[config101]
eKVFormat=
szRoot=keyviewxml
szInMetaElement=dc:title,dc:meta@title,dc:meta@name=title
szExMetaElement=

szInContentElement=keyview:division@name=dev,keyview:division@name=export,p@style="H
eading 1"
szExContentElement=
szInAttribute=keyview:division@name
```

The custom extraction settings must be preceded by a section heading named `[config`*N*`]`, where *N* is an integer that starts at 100 and increases by 1 for each additional file type (for example, `[config100]`, `[config101]`, `[config102]`, and so on). The default extraction settings for the supported XML formats are numbered `config0` to `config99`. Currently only `0` to `6` are used.

Because a custom XML document type is not recognized by the KeyView detection module, the format ID is not defined. The file type is identified by the file's root element only.

If a custom XML document type is not defined in the `kvxconfig.ini` file or by the `setConfigOption` method, the default extraction settings for a generic XML document are used.

Error Messages

When a KeyView exception is thrown, it might be caused by one of the following errors.

Exception	Description
`KVERR_Success`	Function completed successfully.
`KVERR_DLLNotFound`	A DLL or shared library was not found.
`KVERR_OutOfCore`	Memory allocation failure.

Exception	Description
KVERR_processCancelled	Callback function returns FALSE.
KVERR_badInputStream	Invalid or corrupt input stream.
KVERR_badOutputType	Invalid output is requested.
KVERR_General	General error.
KVERR_FormatNotSupported	File format is not supported.
KVERR_PasswordProtected	File is encrypted or password-protected. KeyView only supports secure PST, NSF, and ZIP files.
KVERR_ADSNotFound	Adobe Document Server not found. This error is obsolete.
KVERR_AutoDetFail	Autodetect error.
KVERR_AutoDetNoFormat	Unable to detect file format.
KVERR_ReaderInitError	Error initializing the reader.
KVERR_NoReader	No reader available for this format.
KVERR_ CreateOutputFileFailed	Unable to create output file. If the overwrite flag in setOverWrite is FALSE and a subfile has the same name as a file in the target path, this error is generated.
KVERR_CreateTempFileFailed	Unable to create temporary file.
KVERR_ ErrorWritingToOutputFile	Error writing to output file.
KVERR_CreateProcessFailed	Error creating a child process.
KVERR_WaitForChildFailed	Wait for child process failed.
KVERR_ChildTimeOut	Child process hung/timed out.
KVERR_ArchiveFileNotFound	Attempt to extract nonexistent file.
KVERR_ArchiveFatalError	Fatal error processing an archive file.
KVError_OpenStreamFailure = KVERR_ArchiveFatalError +1	Failed to open a stream during out-of-process filtering. This is used by KeyView Filter.
KVError_ InterfaceFunctionNotFound	An interface function was not found during out-of-process filtering. This is used by KeyView Filter.
KVError_InputFileNotFound	Could not find the input file during out-of-process filtering. This is used by KeyView Filter.
KVError_	Could not open the output file during out-of-process filtering.

Exception	Description
`OpenOutputFileFailed`	This is used by KeyView Filter.
`KVError_MemoryLeak`	Memory leak occurred during out-of-process filtering. This is used by KeyView Filter.
`KVError_MemoryOverwrite`	Memory overwrite occurred during out-of-process filtering. This is used by KeyView Filter.
`KVError_GPF`	Exception occurred during out-of-process filtering. This is used by KeyView Filter.
`KVError_OopCore`	Memory dump was generated in a child process during out-of-process filtering. This is used by KeyView Filter.
`KVError_KVoopLogFailed`	Creation of out-of-process error log failed. This is used by KeyView Filter.
`KVError_OverNestedFileLimit`	The container file has more than the allowable number of child documents. One or more child documents were not converted. Currently, this is not used.
`KVError_PSTAccessFailed`	The PST file could not be converted. This error might be returned when a call to `extOpenDocument` returns NULL for one of the following reasons: • Microsoft Outlook client is not installed • Microsoft Outlook client is installed, but is not the default email client • Microsoft Outlook client is installed, but is not configured correctly • PST file is corrupt • PST file is read-only (PST files must allow read and write access) • MAPI call fails • The bit editions of Microsoft Outlook do not match the bit editions of the KeyView software. For example, if 32-bit KeyView is used, 32-bit Outlook must be installed. If 64-bit KeyView is used, 64-bit Outlook must be installed.
`KVError_PasswordRequired`	To open the file, credentials must be provided. This error might be returned when a call to `extOpenDocument` returns NULL.
`KVError_InvalidArgs`	The input argument or structure is invalid. This is generated by the File Extraction APIs.

Exception	Description
`KVError_OutputFileExists`	A file with the same name already exists in the output directory. This error is generated when extracting a subfile from a container file with the `setOverWrite` flag set to FALSE, and a file by the same name already exists in the output directory.
`KVError_ReaderUsageDenied`	The current license key does not enable the document reader required to convert the file. This error might be returned when a call to `extOpenDocument` returns NULL. Some document readers are considered advanced features and are licensed separately from the KeyView SDK (for example, the PST and MBX readers). Contact your Micro Focus sales representative to get an updated license key
`KVError_OopBadConfig`	Information in the `kvxconfig.ini` file is incomplete and cannot be used to convert the XML file.
`KVError_OopBrokenPipe`	Data was not transferred between the parent and child processes during out-of-process filtering because either the parent or child failed. This is used by KeyView Filter.
`KVError_OopPipeOEF`	Data was not transferred between the parent and child processes during out-of-process filtering because the parent process was shutdown. This is used by KeyView Filter.
`KVError_IPCTimeOut`	Either the parent or child process is waiting for a reply or request during out-of-process filtering. This is used by KeyView Filter.
`KVError_ InvalidOopDriverSignature`	A client sent a request to the File Extraction out-of-process server, but context driver does not exist on the server. This is used by KeyView Filter.
`KVError_ InvalidOopServiceSignature`	A client sent a request to a File Extraction out-of-process server that does not exist. If this error is generated on the call to `fpClose()`, it can be ignored. This is used by KeyView Filter.

Show Hidden Data

Microsoft Word, Excel, and PowerPoint documents contain hidden information, some of which is shown by default when exported, and some of which is hidden by default. There are several options that allow you to determine which types of hidden data are shown.

Hidden Data in Microsoft Documents

You can show several types of hidden data from Microsoft Word, Excel, and PowerPoint documents, each of which has a corresponding parameter in the `Export` class, which you can set to change the default behavior. The following table lists each data type, its default behavior, and its corresponding configuration API flag.

Hidden data settings

Hidden Data Type	Default Behavior	Configuration API Parameter
Microsoft Word		
Comments[1]	Shown[2]	`CFG_WP_NOCOMMENTS`
Hidden text	Hidden	`CFG_WP_SHOWHIDDENTEXT`
Date field codes	Calculated date	`CFG_WP_SHOWDATEFIELDCODE`
File name field codes	Document file name	`CFG_WP_SHOWFILENAMEFIELDCODE`
Microsoft Excel		
Hidden information	Hidden	`CFG_SS_SHOWHIDDENINFOR`
Comments	Hidden	`CFG_SS_SHOWCOMMENTS`
Formulas	Calculated value	`CFG_SS_SHOWFORMULA`
Microsoft PowerPoint		
Hidden slides	Shown	`CFG_PG_HIDEHIDDENSLIDE`
Comments	Shown[3]	`CFG_PG_HIDECOMMENT`
Comments slide	Hidden	`CFG_PG_SHOWCOMMENTSSLIDE`[4]
Slide notes[5]	Hidden	`CFG_PG_SHOWSLIDENOTES`

To toggle the display of hidden data

- Use the `setConfigOption` method of the `Export` object, and set the `config` parameter to one of the options listed in Hidden data settings, above. Setting a hidden data parameter changes the *default* behavior.

[1]Word comment settings can also be toggled with a configuration parameter in the `formats_e.ini` file. See Toggle Word Comment Settings in the formats_e.ini File, on the next page.
[2]Shown by default in documents from Microsoft Word 97 and later.
[3]Shown by default in Microsoft PowerPoint 97 to 2000 documents.
[4]This setting affects PowerPoint 2003 and 2007 only.

[5]PowerPoint slide note settings can also be toggled with a configuration parameter in the `formats_e.ini` file. See Toggle PowerPoint Slide Note Settings in the formats_e.ini File, on the next page.

For example:

```
objExport.setConfigOption(Export.CFG_WP_SHOWHIDDENTEXT);
```

In this case, the configuration parameter ensures that hidden text in Microsoft Word documents is shown (it is hidden by default).

Toggle Word Comment Settings in the formats_e.ini File

Microsoft Word 97 to 2003 comment settings can also be controlled through a parameter in the `formats_e.ini` file.

The `formats_e.ini` file is in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

To toggle comment output in formats_e.ini

1. Open the `formats_e.ini` file in a text editor.
2. Under `[Options]`, add the `WP_NOCOMMENTS` parameter and set it to **`0`** to show comments, or **`1`** to hide comments. For example:

   ```
   [Options]
   WP_NOCOMMENTS=1
   ```

   > **NOTE:** The `CFG_WP_NOCOMMENTS` configuration API flag overrides the setting in `formats_e.ini`.

Toggle PowerPoint Slide Note Settings in the formats_e.ini File

Microsoft PowerPoint slide note settings can also be controlled through a parameter in the `formats_e.ini` file.

The `formats_e.ini` file is in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system.

To toggle slide note output in formats_e.ini

1. Open the `formats_e.ini` file in a text editor.
2. Under `[Options]`, add the `ShowSlideNotes` parameter and set it to **`1`** to show slide notes, or **`0`** to hide slide notes. For example:

   ```
   [Options]
   ShowSlideNotes=1
   ```

   > **NOTE:** The `CFG_PG_SHOWSLIDENOTES` configuration API flag overrides the setting in `formats_e.ini`.

Exclude Japanese Guide Text

This option prevents output of Japanese phonetic guide text when Microsoft Excel (`.xlsx`) files are processed.

To prevent output of Japanese phonetic guide text

- In `formats_e.ini`, set the following parameter.

  ```
  [Options]
  NoPhoneticGuides=TRUE
  ```

Source Code Identification

When KeyView auto-detects a file that contains source code, it can attempt to identify the programming language that it is written in.

When you do not enable source code identification, files containing source code may be identified as ASCII text files, causing the application to treat them in the same way as ordinary text. However, in many instances, it can be useful to route these files elsewhere or filter them out. For example, indexing source code into an IDOL index has minimal value and could bloat the engine with terms that are of no use in retrieval. You can use source code identification to identify files containing a particular programming language as a more specific format.

> **NOTE:** Source code identification is available only on certain platforms (see source code identification in the platform differences section).

You can set source code identification to different levels.

Option	Description
`KVSOURCECODE_OFF`	Do not enable source code identification.
`KVSOURCECODE_ENABLED`	Enable source code identification for the most common source code formats.
`KVSOURCECODE_EXTENDED`	Enable source code identification for all supported source code formats. This option might lead to false positives in some cases (for example, a C++ file might get identified as a rarer format).

For the complete list of source code formats supported for both options, see Supported Formats, on page 110.

To configure source code identification

- In `formats_e.ini`, set the following parameter to the appropriate level.

  ```
  [Options]
  SourceCodeDetection=KVSOURCECODE_ENABLED
  ```

Chapter 5: Sample Programs

This section describes the Java sample programs provided with XML Export.

Introduction

The Java sample programs demonstrate how to use the Java implementation of XML Export. The sample code is intended to provide a starting point for your own applications or to be used for reference purposes.

The source code for the programs is in the directory `javaapi/sample`. Included alongside the source code are compiled `.class` files, and Batch (`.bat`) and C Shell (`.csh`) files that help run each program.

The sample programs pass license information to KeyView through the `XmlExport` constructor. This is the method recommended by Micro Focus. Before the sample code can be compiled, you must replace the placeholders `YOUR_LICENSE_ORGANIZATION` and `YOUR_LICENSE_KEY` with your license information.

The compiled `.class` files that are supplied in the SDK have an embedded trial license, which expires approximately five months after release. If the environment variables `KV_SAMPLE_PROGRAM_LICENSE_ORGANIZATION` and `KV_SAMPLE_PROGRAM_LICENSE_KEY` are set then those values are used instead, so that you can use the programs after the embedded trial license has expired, and test or troubleshoot with your own license.

ExtractExport

This program demonstrates the File Extraction interface and basic functionality of the Export interface. The `HtmlTest` sample program demonstrates more advanced functionality of the Export interface. See XmlTest, on page 99

The `ExtractExport` program demonstrates the following functionality:

- opens a document
- extracts subfiles from a document
- repeats subfile extraction until all subfiles are extracted

- sets conversion options through a template file
- converts the subfile (or subfiles) and main file to HTML or XML
- enables you to specify the command-line options listed in Options for the ExtractExport Sample Program, below

NOTE: This sample program demonstrates how to export from a `java.io.InputStream` object. However, Micro Focus recommends that you implement a `com.verity.api.SeekableInputStream` and pass this into KeyView instead. Micro Focus recommends this option because it allows KeyView to seek in the file, only reading the parts it needs to read. For more information, see Input/Output Operations, on page 31.

To run ExtractExport

1. Add the location of the `javaapi\KeyView.jar` file, the `javaapi\sample` directory, and the Export `bin` directory to the `CLASSPATH` environment variable.
2. Run the program as follows:

   `java -Djava.library.path=`*`bin_directory`* `ExtractExport [`*`options`*`] `*`bin_directory inifile input_file output_file`*

   where:

   - `bin_directory` is the path to the Export `bin` directory.
   - `options` is one or more of the options listed in Options for the ExtractExport Sample Program, below.
   - `inifile` is the path and file name of a template file.
   - `input_file` is the path and file name of the source file.
   - `output_file` is the path and file name of the output file if the source file is not a container file.

Options for the ExtractExport Sample Program

Option	Description
`-extonly`	This option extracts the subfiles from a source file, but does not convert the files after extraction.
`-extdir directory`	This option sets the suggested directory to which the subfiles are extracted.
`-ext-fbody`	This option extracts the formatted version of the message body (HTML or RTF) from mail files when possible.
`-xml`	This option converts the files to XML. The default is HTML. To use this option, XML Export must be installed.
`-source-cs charset`	This option sets the character set of the source file.

Options for the ExtractExport Sample Program, continued

Option	Description
	`charset` is a character set defined as a constant in the Export class. See Code Character Sets, on page 220.
`-target-cs charset`	This option sets the character set of the output file. `charset` is a character set defined as a constant in the Export class. See Code Character Sets, on page 220.
`-little-end`	This option sets the byte order for Unicode text to little endian.
`-is`	This option sets the input as a stream. The default is file.
`-os`	This option sets the output as a stream. The default is file.
`-open-user username`	This option specifies the user name used to open a protected PST or NSF file.
`-open-pass password`	This option specifies the password used to open a protected PST or NSF file.
`-open-idfile idfile`	This option specifies the user ID file used to open a protected PST or NSF file.
`-open-createroot`	This option creates a root directory on which a hierarchy can be based. See Create a Root Node, on page 44.
`-ext-nodir`	This option specifies that the subfile directory structure is not created.
`-ext-noheader`	This option excludes mail header information from extracted message body text file. See Exclude Metadata from the Extracted Text File, on page 51.
`-meta outfile`	This option extracts default mail metadata and writes it to a file. See Extract Mail Metadata, on page 46.
`-oop`	This option converts the files in a separate process. See Convert Files Out of Process, on page 23.
`-ip`	This option runs file extraction in the same process as the calling application (in process). See Convert Files Out of Process, on page 23.

XmlTest

This program converts an input document to an output document and enables you to specify options in the command line. This program demonstrates most of the methods available in the Java API. The command-line options are listed in Options for the XMLTest Sample Program, on the next page.

NOTE: This sample program demonstrates how to export from a `java.io.InputStream` object. However, Micro Focus recommends that you implement a `com.verity.api.SeekableInputStream` and pass this into KeyView instead. Micro Focus recommends this option because it allows KeyView to seek in the file, only reading the parts it needs to read. For more information, see Input/Output Operations, on page 31.

To run XmlTest

1. Add the location of the `javaapi\KeyView.jar` file, and the Export `bin` directory to the `CLASSPATH` environment variable.
2. Type the following:

   `java -Djava.library.path=`*`bin_directory`* `XmlTest [`*`options`*`] `*`bin_directoryinifile inputfileoutputfile`*

   where:

   - `bin_directory` is the path to the Export `bin` directory.
   - `options` is one or more of the options listed in Options for the XMLTest Sample Program, below.
   - `inifile` is the full path and file name of a template file. See Explore Conversion Options with the Sample Programs, on page 30.
   - `inputfile` is the path and file name of the source file.
   - `outputfile` is the path and file name of the generated file. If a path is not specified, the file is output to the current directory.

Options for the XMLTest Sample Program

Option	Description
`-is`	This option sets the input as a stream. The default is file.
`-os`	This option sets the output as a stream. The default is file.
`-oop`	This option runs Export as a separate process. See Convert Files Out of Process, on page 23.
`-oopksa`	This option keeps a Servant process active after the Export out-of-process session is terminated. If the Servant remains active, subsequent conversion requests are processed more quickly because the Servant is already prepared to receive data.
`-xxmlconfigfile`	This option converts an XML file using customized extraction settings defined in the `kvxconfig.ini` file. If you do not enter the full path to the template file, the program looks for the file in the current working directory (*`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system). See Convert Revision Tracking Information, on page 78.

Options for the XMLTest Sample Program, continued

Option	Description
`-ztempdirectory`	This option specifies a temporary directory in which temporary files generated by the conversion process are stored. On Windows systems, there is a 64 K size limit to the temp directory. After the limit is reached, you must either create a new directory or delete the contents of the existing directory; otherwise, you might receive an error message.
`-style stylefile`	This option reads style sheet information from an existing style sheet file, or writes the information to an external CSS file.
`-docformat formatfile`	This option extracts the file format information and writes it to a file. `formatfile` is the name of the file to which the format information is written.
`-summary summaryfile`	This option extracts the metadata and writes it to a file. `summaryfile` is the name of the file to which the metadata is written. See Extract Metadata, on page 63.
`-listlistfile`	This option displays a list of the files that are automatically generated during the conversion. `listfile` is the name of the file to which the file list is written.
`-supim`	This option specifies that XML output includes verbose markup, but no images. If you do not set this option, embedded images in a document are regenerated as separate files and in the output directory.
`-enpos`	This option specifies that a position element is included in the markup for PDF documents. The position element defines the absolute position of the text relative to the bottom left corner of the page, and includes additional information such as font and color.
`-disablezone`	This option disables the conversion of Microsoft Word bookmarks to zone elements (`<zone name ="xxx">`) in the output XML.
`-suptocim`	If you set this option, bookmarks in a PDF file are *not* converted to simple XLinks in the XML output. By default, PDF bookmarks are converted to source and destination anchors.
`-pdflorder orderFlag`	This option specifies that PDF files are output in a logical reading order. The parameter `orderFlag` is one of the following: • `ltr`—left-to-right paragraph direction. • `rtl`—right-to-left paragraph direction.

Options for the XMLTest Sample Program, continued

Option	Description
	• `auto`—The PDF reader determines the paragraph direction (left-to-right or right-to-left) for each PDF page, and then sets the direction accordingly. • `raw`—Unstructured paragraph flow. See Convert PDF Files to a Logical Reading Order, on page 79.
`-rm`	If you set this option, text and graphics that were deleted from a document with a revision tracking feature enabled are converted, and revision tracking information is included in the XML output. See Convert Revision Tracking Information, on page 78.
`-dsh`	This option specifies that soft hyphens in PDF files are deleted from the converted output. See Control Hyphenation, on page 81.

XmlConvFileToFile

This program converts an input file to an output file using Java API calls in XML Export, and a template file. See Explore Conversion Options with the Sample Programs, on page 30 for more information on templates.

It demonstrates the following functions:

- Extracts file format information (document type, format, and version) if it is available in the source document.
- Extracts metadata if it is available in the source document.

  > **NOTE:** Although the program extracts all the metadata in the document, it only displays the first element of metadata.

- Displays a list of the files that are automatically generated during the conversion.
- Specifies the directory in which temporary files created during conversion processes are stored. To specify the temporary directory, remove the comment from the following line in the `XmlConvFileToFile.java` file:

  ```
  objXmlExport.setConfigOption(new ConfigOption(Export.CFG_SETTEMPDIRECTORY, 0,
  "C:\\tmp"));
  ```

- Extracts elements from a source XML file based on the extraction settings in the `kvxconfig.ini` file. See Configure Element Extraction for XML Documents, on page 86.

Run XmlConvFileToFile on Windows

To run XmlConvFileToFile on Windows

1. In the file `XmlConvFileToFile.bat`, set the following variables.

`INSTALL_DIR`	The absolute path of the KeyView Export SDK installation directory.
`PLATFORM`	The platform name.

2. In `XmlSampleConfig.txt`, specify the following values, one on each line.

Line	Value
1	The path to the template file to use in the conversion. You can use the template files in the directory *`install`*`\xmlexport\programs\ini`, where *`install`* is the Export SDK installation directory.
2	The path to the Export SDK `bin` directory.

3. Run the batch file in the *`install`*`\javaapi\sample` directory. Type the following:

   `XmlConvFileToFile` *`inputfile outputfile`*

   where:

   `inputfile` is the path of the source file.

   `outputfile` is the path and file name of the generated XML file.

   To view the XML file in a browser, the `Verity.dtd` and other support files (`.xsl` and `.ent`) must be in the same directory as the XML file. These files are in the *`install`*`\javaapi\sample` directory.

Run XmlConvFileToFile on UNIX

To run XmlConvFileToFile on UNIX

1. In the file `XmlConvFileToFile.csh`, set the following variables.

`INSTALL_DIR`	The absolute path of the KeyView Export SDK installation directory.
`PLATFORM`	The platform name.

2. In `XmlSampleConfig.txt`, specify the following values, one on each line.

Line	Value
1	The path to the template file to use in the conversion.

	You can use the template files in the directory *install*\xmlexport\programs\ini, where *install* is the Export SDK installation directory.
2	The path to the Export SDK bin directory.

3. Run the C shell file in the *install*/javaapi/sample directory. Type the following:

   ./XmlConvFileToFile.csh *inputfile outputfile*

   where,

   inputfile is the path of the source file.

   outputfile is the path and file name of the generated XML file.

XmlConvStreamToStream

This program converts an input stream to an output stream using Java API calls in XML Export, and a template file. See Explore Conversion Options with the Sample Programs, on page 30 for more information on templates.

> **NOTE:** This sample program demonstrates how to export from a java.io.InputStream object. However, Micro Focus recommends that you implement a com.verity.api.SeekableInputStream and pass this into KeyView instead. Micro Focus recommends this option because it allows KeyView to seek in the file, only reading the parts it needs to read. For more information, see Input/Output Operations, on page 31.

Run XmlConvStreamToStream on Windows

To run XmlConvStreamToStream on Windows

1. In the file XmlConvStreamToStream.bat, set the following variables.

INSTALL_DIR	The absolute path of the KeyView Export SDK installation directory.
PLATFORM	The platform name.

2. In XmlSampleConfig.txt, specify the following values, one on each line.

Line	Value
1	The path to the template file to use in the conversion. You can use the template files in the directory *install*\xmlexport\programs\ini, where *install* is the Export SDK installation directory.
2	The path to the Export SDK bin directory.

3. Run the batch file in the *install*\javaapi\sample directory. Type the following:

   XmlConvStreamToStream *inputfile*

   where inputfile is the path of the source file.

   The generated XML is output to the current console (standard out).

Run XmlConvStreamToStream on UNIX

To run XmlConvStreamToStream on UNIX

1. In the file XmlConvStreamToStream.csh, set the following variables.

INSTALL_DIR	The absolute path of the KeyView Export SDK installation directory.
PLATFORM	The platform name.

2. In XmlSampleConfig.txt, specify the following values, one on each line.

Line	Value
1	The path to the template file to use in the conversion. You can use the template files in the directory *install*\xmlexport\programs\ini, where *install* is the Export SDK installation directory.
2	The path to the Export SDK bin directory.

3. Run the C shell file in the *install*/javaapi/sample directory. Type the following:

   ./XmlConvStreamToStream.csh *inputfile*

   where inputfile is the path of the source file.

   The generated XML is output to the current console (standard out).

XmlParseIt

This program converts an input file and sends out SAX events based on the generated XML, and a template file. See Explore Conversion Options with the Sample Programs, on page 30 for more information on template files.

> **NOTE:** Ensure that the JAVA_HOME system variable is set and points to your JDK installation directory. This variable is used in the XmlParseIt.bat and XmlParseIt.csh files.

Run XmlParseIt on Windows

To run XmlParseIt on Windows

1. In the `XmlParseIt.bat` file, set `INSTALL_DIR` to the Export SDK installation directory.
2. In the first line of the `XmlSampleConfig.txt` file, specify the path to the template file to use in the conversion. You can use any of the template files in the *`install`*`\xmlexport\programs\ini` directory, where *`install`* is the path of the Export installation directory.
3. In the second line of the `XmlSampleConfig.txt` file, specify the path to the Export SDK `bin` directory.
4. In the third line of the `XmlSampleConfig.txt` file, specify the absolute URL pointing to the directory in which the `Verity.dtd` is located. You must include the ending slash.
5. Run the batch file in the *`install`*`\javaapi\sample` directory. Type the following:

   ```
   XmlParseIt inputfile
   ```

   where:

   `inputfile` is the path and file name of the source file.

   The SAX events from the generated XML is output to the current DOS prompt.

Run XmlParseIt on UNIX

To run XmlParseIt on UNIX

1. In the `XmlParseIt.csh` file, set `INSTALL_DIR` to the Export SDK installation directory.
2. In the first line of the `XmlSampleConfig.txt` file, specify the path to the template file to use in the conversion. You can use any of the template files in the *`install`*`/xmlexport/programs/ini` directory, where *`install`* is the path of the Export installation directory.
3. In the second line of the `XmlSampleConfig.txt` file, specify the path to the Export SDK `bin` directory.
4. In the third line of the `XmlSampleConfig.txt` file, specify the absolute URL pointing to the directory in which the `Verity.dtd` is located. You must include the ending slash.
5. Run the C shell file in the *`install`*`/javaapi/sample` directory. Type the following:

   ```
   ./XmlParseIt.csh inputfile
   ```

   where:

   `inputfile` is the path and file name of the source file.

   The SAX events from the generated XML are output to the current console (standard out).

Part III: Appendixes

This section lists supported formats, supported character sets and redistributed files, and provides information on format detection.

Appendix A: Supported Formats

This section lists the file formats that KeyView can detect.

Key to Supported Formats Table

The supported formats table includes the following information:

Column	Description
Format Name	The format name that is returned by KeyView format detection. • In the C API, these values are defined in the `ENdocFmt` enumeration in `adDocFmt.h`. • In the .NET API these values are defined in the `Autonomy.API.Export.DocFormat` enumeration. • In the Java API these values are defined in the `com.verity.api.DocFormat` enumeration.
Number	The format number that is returned by KeyView format detection. This is the value associated with the Format Name in the relevant enumeration.
Category	This value is used in the KeyView configuration file `formats.ini` to specify the reader to use to filter, export, or view the format. Several formats might have the same category value.
Description	A short description of the file format.
MIME Type	The MIME type (if any).
Extension	A list of common file extensions for the file format. **NOTE:** This is not a complete list of file extensions. KeyView does not distinguish between file types based on their extension. Instead, it detects the file format based on the file content. This is more reliable because content cannot always be predicted from the file extension, and because some file extensions are associated with multiple formats.
File Class	The KeyView file class. • In the C API, these values are defined in the `ENdocClass` enumeration in

	`adinfo.h`. • In the .NET API these values are defined in the `Autonomy.API.Export.DocClass` enumeration. • In the Java API these values are defined in the `com.verity.api.DocClass` enumeration.

Supported Formats

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Reserved__Fmt	-1	-1				AutoDetNoFormat	
Unknown_Fmt	0	0				AutoDetNoFormat	
AES_Multiplus_Comm_Fmt	1	1	Multiplus (AES)		PTF	adWORDPROCESSOR	
ASCII_Text_Fmt	2	2	Plain Text file	text/plain	TXT	adWORDPROCESSOR	afsr
MSDOS_Batch_File_Fmt	3	2	MS-DOS Batch File	application/x-bat	BAT	adEXECUTABLE	afsr
Applix_Alis_Fmt	4	3	Applix Asterix		AX	adWORDPROCESSOR	axsr
BMP_Fmt	5	4	Windows Bitmap Image (BMP)	image/bmp	BMP	adRASTERIMAGE	bmpsr, kpbmprdr
CT_DEF_Fmt	6	5	Convergent Technologies DEF Comm. Format			adWORDPROCESSOR	cdsr
Corel_Draw_Fmt	7	6	CorelDRAW (up to version 13/X3)	application/coreldraw	CDR	adVECTORGRAPHIC	kpcdrrdr
CGM_ClearText_Fmt	8	8	Computer Graphics Metafile (CGM)		CGM	adVECTORGRAPHIC	kpcgmrdr
CGM_Binary_Fmt	9	8	Computer Graphics Metafile (CGM)	image/cgm	CGM	adVECTORGRAPHIC	kpcgmrdr
CGM_Character_Fmt	10	8	Computer Graphics Metafile (CGM)		CGM	adVECTORGRAPHIC	kpcgmrdr
Word_Connection_Fmt	11	9	Word Connection		CN	adWORDPROCESSOR	stringssr
COMET_TOP_Word_Fmt	12	10	Nixdorf COMET TOP Financial Accounting software			adWORDPROCESSOR	
CEOwrite_Fmt	13	11	CEOwrite		CW	adWORDPROCESSOR	stringssr
DSA101_Fmt	14	12	DSA101 (Honeywell Bull)			adWORDPROCESSOR	stringssr
DCA_RFT_Fmt	15	13	IBM DCA-RFT (Revisable Form)	application/dca-rft	RFT, DC	adWORDPROCESSOR	dcasr
CDA_DDIF_Fmt	16	14	CDA / DDIF		DDIF	adWORDPROCESSOR	
DG_CDS_Fmt	17	16	DG Common Data Stream (CDS)		CDS	adWORDPROCESSOR	stringssr
Micrografx_Draw_Fmt	18	18	Windows Draw (Micrografx)	image/x-mgx-dsf	DRW	adVECTORGRAPHIC	
Data_Point_VistaWord_Fmt	19	19	Vistaword		DV	adWORDPROCESSOR	stringssr
DECdx_Fmt	20	20	DEC WPS Plus DX format	application/dec-dx	DX	adWORDPROCESSOR	
Enable_WP_Fmt	21	21	Enable Word Processing	application/ewp	WPF	adWORDPROCESSOR	stringssr
EPSF_Fmt	22	22	Encapsulated PostScript	application/postscript	EPS	adRASTERIMAGE,	kpepsrdr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
						adVECTORGRAPHIC	
Preview_EPSF_Fmt	23	22	Encapsulated PostScript	application/postscript		adRASTERIMAGE, adVECTORGRAPHIC	kpepsrdr
MS_Executable_Fmt	24	23	MSDOS/Windows executable	application/x-msdownload	EXE	adEXECUTABLE	exesr
G31D_Fmt	25	24	CCITT G3 1D			adRASTERIMAGE	
GIF_87a_Fmt	26	25	Graphics Interchange Format (GIF87a)	image/gif	GIF	adRASTERIMAGE	gifsr, kpgifrdr
GIF_89a_Fmt	27	25	Graphics Interchange Format (GIF89a)	image/gif	GIF	adRASTERIMAGE	gifsr, kpgifrdr
HP_Word_PC_Fmt	28	26	HP Word PC		HW	adWORDPROCESSOR	stringssr
IBM_1403_LinePrinter_Fmt	29	27	IBM 1403 Line Printer		I4	adWORDPROCESSOR	
IBM_DCF_Script_Fmt	30	28	DCF Script		IC	adWORDPROCESSOR	stringssr
IBM_DCA_FFT_Fmt	31	29	DCA-FFT (IBM Final Form)	text/x-ibm-fft	IF, FFT	adWORDPROCESSOR	
Interleaf_Fmt	32	30	Interleaf			adWORDPROCESSOR	
GEM_Image_Fmt	33	31	GEM Bit Image		IMG	adRASTERIMAGE	
IBM_Display_Write_Fmt	34	32	IBM DisplayWrite	application/x-displaywrite	IP	adWORDPROCESSOR	dw4sr
Sun_Raster_Fmt	35	33	Sun Raster image	image/x-cmu-raster	RAS, RS, SUN	adRASTERIMAGE	kpsunrdr
Ami_Pro_Fmt	36	35	Lotus Ami Pro	application/x-lotus-amipro	SAM	adWORDPROCESSOR	lasr
Ami_Pro_StyleSheet_Fmt	37	35	Lotus Ami Pro Style Sheet			adWORDPROCESSOR	lasr
MORE_Fmt	38	36	MORE Database MAC			adOUTLINE	
Lyrix_Fmt	39	37	Lyrix Word Processing			adWORDPROCESSOR	stringssr
MASS_11_Fmt	40	38	MASS-11	application/x-mass-11	M1, M11	adWORDPROCESSOR	stringssr
MacPaint_Fmt	41	39	MacPaint	image/x-macpaint	MAC, PIC, PNTG	adRASTERIMAGE	kpmacrdr
MS_Word_Mac_Fmt	42	40	Microsoft Word for Macintosh (up to version 3)	application/msword	DOC	adWORDPROCESSOR	mbsr
SmartWare_II_Comm_Fmt	43	41	SmartWare II			adCOMMUNICATION	
MS_Word_Win_Fmt	44	42	Microsoft Word for Windows (up to version 6)	application/msword	DOC, WPS	adWORDPROCESSOR	misr
Multimate_Fmt	45	43	MultiMate	application/x-multimate	MM	adWORDPROCESSOR	stringssr
Multimate_Fnote_Fmt	46	43	MultiMate Footnote File	application/x-multimate-note	MMFN	adWORDPROCESSOR	stringssr
Multimate_Adv_Fmt	47	43	MultiMate Advantage			adWORDPROCESSOR	stringssr
Multimate_Adv_Fnote_Fmt	48	43	MultiMate Advantage Footnote File			adWORDPROCESSOR	stringssr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Multimate_Adv_II_Fmt	49	43	MultiMate Advantage II			adWORDPROCESSOR	stringssr
Multimate_Adv_II_Fnote_Fmt	50	43	MultiMate Advantage II Footnote File		FBX, FNX	adWORDPROCESSOR	stringssr
Multiplan_PC_Fmt	51	44	Microsoft Multiplan (PC)	application/x-ms-multiplan		adSPREADSHEET	
Multiplan_Mac_Fmt	52	44	Microsoft Multiplan (Mac)	application/x-ms-multiplan		adSPREADSHEET	
MS_RTF_Fmt	53	45	Rich Text Format (RTF)	application/rtf	RTF	adWORDPROCESSOR	rtfsr
MS_Word_PC_Fmt	54	46	Microsoft Word for PC (up to version 6)	application/x-ms-wordpc	MW	adWORDPROCESSOR	mwsr
MS_Word_PC_StyleSheet_Fmt	55	46	Microsoft Word for PC (up to version 6) Style Sheet			adWORDPROCESSOR	mwsr
MS_Word_PC_Glossary_Fmt	56	46	Microsoft Word for PC (up to version 6) Glossary			adWORDPROCESSOR	mwsr
MS_Word_PC_Driver_Fmt	57	46	Microsoft Word for PC (up to version 6) Driver			adWORDPROCESSOR	mwsr
MS_Word_PC_Misc_Fmt	58	46	Microsoft Word for PC (up to version 6) Miscellaneous File			adWORDPROCESSOR	mwsr
NBI_Async_Archive_Fmt	59	47	NBI Async Archive Format			adWORDPROCESSOR	
Navy_DIF_Fmt	60	48	Navy DIF (document interchange format)	application/x-navy	ND	adWORDPROCESSOR	stringssr
NBI_Net_Archive_Fmt	61	49	NBI OASys Net Archive Format		NN	adWORDPROCESSOR	nnsr
NIOS_TOP_Fmt	62	50	NIOS TOP			adWORDPROCESSOR	
FileMaker_Mac_Fmt	63	51	Filemaker MAC		FP5, FP7	adDATABASE	
ODA_Q1_11_Fmt	64	52	ODA / ODIF Q1 11		OD	adWORDPROCESSOR	stringssr
ODA_Q1_12_Fmt	65	52	ODA / ODIF Q1 12		OD	adWORDPROCESSOR	stringssr
OLIDIF_Fmt	66	53	OLIDIF (Olivetti)			adWORDPROCESSOR	
Office_Writer_Fmt	67	55	Office Writer		OW	adWORDPROCESSOR	stringssr
PC_Paintbrush_Fmt	68	56	PC Paintbrush Graphics (PCX)	image/vnd.zbrush.pcx	PCX	adRASTERIMAGE	kppcxrdr
CPT_Comm_Fmt	69	57	CPT Corporation word processor		PF	adWORDPROCESSOR	stringssr
Lotus_PIC_Fmt	70	58	Lotus PIC	image/x-pict	PIC	adVECTORGRAPHIC	kppicrdr
Mac_PICT_Fmt	71	59	Macintosh Raster / QuickDraw Picture	image/x-pict	PCT	adRASTERIMAGE, adVECTORGRAPHIC	kppctrdr
Philips_Script_Word_Fmt	72	60	Philips Script			adWORDPROCESSOR	
PostScript_Fmt	73	61	PostScript	application/postscript	PS	adVECTORGRAPHIC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
PRIMEWORD_Fmt	74	62	PRIMEWORD			adWORDPROCESSOR	pwsr
Quadratron_Q_One_v1_Fmt	75	63	Q-One V1.93J		Q1, QX	adWORDPROCESSOR	stringssr
Quadratron_Q_One_v2_Fmt	76	64	Q-One V2.0		Q1, QX	adWORDPROCESSOR	stringssr
SAMNA_Word_IV_Fmt	77	65	SAMNA Word		SAM	adWORDPROCESSOR	stringssr
Ami_Pro_Draw_Fmt	78	66	Lotus Ami Pro Draw		SDW	adVECTORGRAPHIC, adRASTERIMAGE	kpsdwrdr
SYLK_Spreadsheet_Fmt	79	67	SYmbolic LinK (SYLK) format		SLK	adSPREADSHEET	
SmartWare_II_WP_Fmt	80	68	Informix SmartWare II word processor		DOC, SMT	adWORDPROCESSOR	swsr
Symphony_Fmt	81	69	Lotus Symphony spreadsheet	application/vnd.symphony	WR1	adSPREADSHEET	
Targa_Fmt	82	70	Truevision Targa image	image/x-tga	TGA	adRASTERIMAGE	kpTGArdr
TIFF_Fmt	83	71	Tagged Image File Format (TIFF)	image/tiff	TIF, TIFF	adRASTERIMAGE, adFAXFORMAT	kptifrdr, tifsr
Targon_Word_Fmt	84	72	Targon Word		TW	adWORDPROCESSOR	stringssr
Uniplex_Ucalc_Fmt	85	73	Uniplex Ucalc		SS	adSPREADSHEET	
Uniplex_WP_Fmt	86	74	Uniplex word processor		UP	adWORDPROCESSOR	stringssr
MS_Word_UNIX_Fmt	87	75	Microsoft Word UNIX	application/msword		adWORDPROCESSOR	
WANG_PC_Fmt	88	76	Wang IWP for PC	application/x-wang-iwp	DOC	adWORDPROCESSOR	
WordERA_Fmt	89	77	WordERA		DC, GL, FR	adWORDPROCESSOR	stringssr
WANG_WPS_Comm_Fmt	90	78	WANG WPS (Word Processing System)		WF	adWORDPROCESSOR	stringssr
WordPerfect_Mac_Fmt	91	79	WordPerfect MAC	application/x-corel-wordperfect		adWORDPROCESSOR	wpmsr
WordPerfect_Fmt	92	86	WordPerfect version 4	application/x-corel-wordperfect	WP, WP4	adWORDPROCESSOR	stringssr
WordPerfect_VAX_Fmt	93	139	WordPerfect VAX	application/x-corel-wordperfect		adWORDPROCESSOR	
WordPerfect_Macro_Fmt	94	139	WordPerfect Macro	application/vnd.wordperfect	MRS	adWORDPROCESSOR	
WordPerfect_Dictionary_Fmt	95	139	WordPerfect Spelling Dictionary	application/vnd.wordperfect	SPW	adWORDPROCESSOR	
WordPerfect_Thesaurus_Fmt	96	139	WordPerfect Thesaurus	application/vnd.wordperfect		adWORDPROCESSOR	
WordPerfect_Resource_Fmt	97	139	WordPerfect Resource File	application/vnd.wordperfect	WWK, PRS	adWORDPROCESSOR	
WordPerfect_Driver_Fmt	98	139	WordPerfect Driver	application/vnd.wordperfect	IRS, VRS	adWORDPROCESSOR	
WordPerfect_Cfg_Fmt	99	139	WordPerfect Configuration File	application/vnd.wordperfect	PFX	adWORDPROCESSOR	
WordPerfect_Hyphenation_Fmt	100	139	WordPerfect Hyphenation Dictionary	application/vnd.wordperfect	HYC	adWORDPROCESSOR	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
WordPerfect_Misc_Fmt	101	139	WordPerfect Miscellaneous File	application/vnd.wordperfect		adWORDPROCESSOR	
WordMARC_Fmt	102	82	WordMARC Composer	video/x-ms-wm	WM, PW	adWORDPROCESSOR	stringssr
Windows_Metafile_Fmt	103	83	Windows Metafile	image/wmf	WMF	adVECTORGRAPHIC, adRASTERIMAGE	kpwmfrdr
Windows_Metafile_NoHdr_Fmt	104	83	Windows Metafile (no header)	image/wmf	WMF	adVECTORGRAPHIC	kpwmfrdr
SmartWare_II_DB_Fmt	105	84	Informix SmartWare II database	database/x-smartdata		adDATABASE	
WordPerfect_Graphics_Fmt	106	195	WordPerfect Graphics (version 2 and higher)	application/vnd.wordperfect	WPG, QPG	adRASTERIMAGE, adVECTORGRAPHIC	kpwg2rdr, kpwpgrdr
WordStar_Fmt	107	87	WordStar	application/vnd.wordstar	WS, WSD	adWORDPROCESSOR	stringssr
WANG_WITA_Fmt	108	88	WANG WITA		WT	adWORDPROCESSOR	stringssr
Xerox_860_Comm_Fmt	109	89	Xerox 860			adWORDPROCESSOR	stringssr
Xerox_Writer_Fmt	110	91	Xerox Writer			adWORDPROCESSOR	stringssr
DIF_SpreadSheet_Fmt	111	92	Data Interchange Format (DIF)	application/dif+xml	DIF	adSPREADSHEET	difsr
Enable_Spreadsheet_Fmt	112	93	Enable Spreadsheet	application/vnd.epson.ssf	SSF	adSPREADSHEET	
SuperCalc_Fmt	113	94	Sorcim SuperCalc spreadsheet	application/x-supercalc5	CAL	adSPREADSHEET	
UltraCalc_Fmt	114	95	UltraCalc spreadsheet			adSPREADSHEET	
SmartWare_II_SS_Fmt	115	96	Informix SmartWare II spreadsheet	application/x-smartware		adSPREADSHEET	
SOF_Encapsulation_Fmt	116	97	Serialized Object Format (SOF)	application/java-serialized-object	SOF	adENCAPSULATION	
PowerPoint_Win_Fmt	117	98	Microsoft PowerPoint PC (up to version 4)	application/x-ms-powerpoint	PPT	adPRESENTATION	kpp40rdr
PowerPoint_Mac_Fmt	118	99	Microsoft PowerPoint MAC (up to version 4)	application/x-ms-powerpoint	PPT	adPRESENTATION	olesr
PowerPoint_95_Fmt	119	212	Microsoft PowerPoint 95	application/x-ms-powerpoint	PPT	adPRESENTATION	kpp95rdr
PowerPoint_97_Fmt	120	272	Microsoft PowerPoint 97	application/x-ms-powerpoint	PPT	adPRESENTATION	kpp97rdr
PageMaker_Mac_Fmt	121	100	PageMaker for Macintosh			adDESKTOPPUBLSH	
PageMaker_Win_Fmt	122	101	PageMaker for Windows			adDESKTOPPUBLSH	
MS_Works_Mac_WP_Fmt	123	103	Microsoft Works Word Processor for MAC	application/x-msworks	MWK	adWORDPROCESSOR	stringssr
MS_Works_Mac_DB_Fmt	124	104	Microsoft Works Database for MAC	application/x-msworks		adDATABASE	
MS_Works_Mac_SS_Fmt	125	105	Microsoft Works Spreadsheet for MAC	application/x-msworks		adSPREADSHEET	mwssr
MS_Works_Mac_Comm_Fmt	126	106	Microsoft Works Communication for MAC	application/x-msworks		adCOMMUNICATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MS_Works_DOS_WP_Fmt	127	107	Microsoft Works Word Processor for DOS	application/x-msworks	WPS	adWORDPROCESSOR	stringssr
MS_Works_DOS_DB_Fmt	128	108	Microsoft Works Database for DOS	application/x-msworks	WDB	adDATABASE	
MS_Works_DOS_SS_Fmt	129	109	Microsoft Works Spreadsheet for DOS	application/x-msworks		adSPREADSHEET	mwssr
MS_Works_Win_WP_Fmt	130	227	Microsoft Works Word Processor for Windows (up to 2000)	application/x-msworks	WPS, W40	adWORDPROCESSOR	msw6sr, mswsr
MS_Works_Win_DB_Fmt	131	231	Microsoft Works Database for Windows	application/x-msworks		adDATABASE	
MS_Works_Win_SS_Fmt	132	228	Microsoft Works Spreadsheet for Windows	application/x-msworks	WKS, S30, S40	adSPREADSHEET	mwssr
PC_Library_Fmt	133	111	DOS/Windows Object Library	application/x-archive	LIB, A	adLIBRARY	
MacWrite_Fmt	134	112	MacWrite	application/macwriteii		adWORDPROCESSOR	stringssr
MacWrite_II_Fmt	135	113	MacWrite II	application/macwriteii		adWORDPROCESSOR	stringssr
Freehand_Fmt	136	114	Adobe/Macrovision FreeHand image	image/x-freehand	FH3, FH4, FH5, FH7, FH8, FH9, FH10, FH11	adVECTORGRAPHIC	
Disk_Doubler_Fmt	137	115	Disk Doubler			adENCAPSULATION	
HP_GL_Fmt	138	116	HP Graphics Language	vector/x-hpgl	HPGL, HPG	adVECTORGRAPHIC	
FrameMaker_Fmt	139	136	FrameMaker	application/vnd.framemaker	FM, FRM	adDESKTOPPUBLSH	
FrameMaker_Book_Fmt	140	136	FrameMaker Book	application/vnd.framemaker	BOOK	adDESKTOPPUBLSH	
Maker_Markup_Language_Fmt	141	174	Maker Markup Language	application/vnd.mif		adDESKTOPPUBLSH	
Maker_Interchange_Fmt	142	117	Adobe FrameMaker Interchange Format (MIF)	application/x-mif	MIF	adWORDPROCESSOR	mifsr
JPEG_File_Interchange_Fmt	143	118	JPEG File Interchange Format	image/jpeg	JPG, JPEG, JFIF, JFI	adRASTERIMAGE	jpgsr, kpjpgrdr
Reflex_Fmt	144	119	Borland Reflex database	database/reflex		adDATABASE	
Framework_Fmt	145	276	Framework office suite			adMIXED	
Framework_II_Fmt	146	120	Framework II office suite		FW3	adMIXED	
Paradox_Fmt	147	121	Borland Paradox database	application/paradox	DB	adDATABASE	
MS_Windows_Write_Fmt	148	123	Microsoft Windows Write	application/x-ms-write	WRI	adWORDPROCESSOR	mwsr
Quattro_Pro_DOS_Fmt	149	124	Corel Quattro Pro for DOS	application/x-quattropro	WQ1	adSPREADSHEET	
Quattro_Pro_Win_Fmt	150	184	Corel Quattro Pro for Windows	application/x-quattro-win	WB1, WB2, WB3	adSPREADSHEET	qpssr
Persuasion_Fmt	151	126	Adobe Persuasion			adPRESENTATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Windows_Icon_Fmt	152	128	Windows Icon Format	image/vnd.microsoft.icoN	ICO	adRASTERIMAGE	kpicordr
Windows_Cursor_Fmt	153	133	Windows Cursor	image/x-win-bitmap	CUR	adRASTERIMAGE	
MS_Project_Activity_Fmt	154	129	Microsoft Project (up to version 3) activity file			adSCHEDULE	
MS_Project_Resource_Fmt	155	129	Microsoft Project (up to version 3) resource file			adSCHEDULE	
MS_Project_Calc_Fmt	156	129	Microsoft Project (up to version 3) calc file			adSCHEDULE	
PKZIP_Fmt	157	132	ZIP Archive	application/zip	ZIP, ZIPX	adENCAPSULATION, adEXECUTABLE	unzip
Quark_Xpress_Fmt	158	134	Quark Xpress MAC			adDESKTOPPUBLSH	
ARC_PAK_Archive_Fmt	159	135	PAK/ARC Archive		ARC, PAK	adENCAPSULATION	
MS_Publisher_Fmt	160	137	Microsoft Publisher (up to version 3)	application/x-mspublisher	PUB	adDESKTOPPUBLSH	mspubsr
PlanPerfect_Fmt	161	138	PlanPerfect			adSCHEDULE	
WordPerfect_Auxiliary_Fmt	162	139	Corel WordPerfect auxiliary file		WPW	adMISC, adENCAPSULATION	
MS_WAVE_Audio_Fmt	163	141	Microsoft Wave audio	audio/wav	WAV	adSOUND	MCI, riffsr
MIDI_Audio_Fmt	164	142	MIDI audio	audio/mid	MID, MIDI	adSOUND	MCI
AutoCAD_DXF_Binary_Fmt	165	143	Autodesk AutoCAD DXF binary format	image/x-dxf	DXF	adVECTORGRAPHIC	kpDXFrdr, kpODArdr
AutoCAD_DXF_Text_Fmt	166	143	Autodesk AutoCAD DXF text format	image/x-dxf	DXF	adVECTORGRAPHIC	kpDXFrdr, kpODArdr
dBase_Fmt	167	144	dBase Database III+/IV	application/x-dbf	DBF, VCX	adDATABASE	dbfsr
OS_2_PM_Metafile_Fmt	168	145	OS/2 PM Metafile		MET	adVECTORGRAPHIC	
Lasergraphics_Language_Fmt	169	146	Lasergraphics Language			adVECTORGRAPHIC	
AutoShade_Rendering_Fmt	170	147	AutoShade Rendering	application/x-autoshade		adVECTORGRAPHIC	
GEM_VDI_Fmt	171	148	GEM VDI Metafile image		GEM, GDI	adVECTORGRAPHIC	
Windows_Help_Fmt	172	149	Windows Help File	application/winhlp	HLP	adMISC	
Volkswriter_Fmt	173	150	Volkswriter word processor		VW4	adWORDPROCESSOR	stringssr
Ability_WP_Fmt	174	151	Ability Word Processor			adWORDPROCESSOR	
Ability_DB_Fmt	175	151	Ability Database			adDATABASE	
Ability_SS_Fmt	176	151	Ability Spreadsheet			adSPREADSHEET	
Ability_Comm_Fmt	177	151	Ability Presentation			adCOMMUNICATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Ability_Image_Fmt	178	151	Ability Image			adRASTERIMAGE	
XyWrite_Fmt	179	152	XYWrite / Nota Bene		XY4	adWORDPROCESSOR	xywsr
CSV_Fmt	180	153	CSV (Comma Separated Values)	text/csv	CSV	adSPREADSHEET	csvsr
IBM_Writing_Assistant_Fmt	181	154	IBM Writing Assistant		IWA	adWORDPROCESSOR	stringssr
WordStar_2000_Fmt	182	155	WordStar 2000		WS2	adWORDPROCESSOR	stringssr
HP_PCL_Fmt	183	157	HP Printer Command Language (PCL)	application/pcl	PCL, PRN	adVECTORGRAPHIC	
UNIX_Exe_PreSysV_VAX_Fmt	184	158	UNIX executable (PDP-11/pre-System V VAX)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_Basic_16_Fmt	185	158	UNIX executable (Basic-16)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_x86_Fmt	186	158	UNIX executable (x86)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_iAPX_286_Fmt	187	158	UNIX executable (iAPX 286)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_MC68k_Fmt	188	158	UNIX executable (MC680x0)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_3B20_Fmt	189	158	UNIX executable (3B20)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_WE32000_Fmt	190	158	UNIX executable (WE32000)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_VAX_Fmt	191	158	UNIX executable (VAX)	application/octet-stream		adEXECUTABLE	
UNIX_Exe_Bell_5_Fmt	192	158	UNIX executable (Bell 5.0)	application/octet-stream		adEXECUTABLE	
UNIX_Obj_VAX_Demand_Fmt	193	159	UNIX object module (VAX Demand)			adOBJECTMODULE	
UNIX_Obj_MS8086_Fmt	194	159	UNIX object module (old MS 8086)			adOBJECTMODULE	
UNIX_Obj_Z8000_Fmt	195	159	UNIX object module (Z8000)			adOBJECTMODULE	
AU_Audio_Fmt	196	161	NeXT/Sun Audio Data	audio/basic	AU, SND	adSOUND	MCI
NeWS_Font_Fmt	197	162	NeWS bitmap font			adFONT	
cpio_Archive_CRChdr_Fmt	198	163	cpio archive (CRC Header)	application/x-cpio	CPIO	adENCAPSULATION	
cpio_Archive_CHRhdr_Fmt	199	163	cpio archive (CHR Header)	application/x-cpio	CPIO	adENCAPSULATION	
PEX_Binary_Archive_Fmt	200	164	SUN PEX Binary Archive			adENCAPSULATION	
Sun_vfont_Fmt	201	165	SUN vfont Definition			adFONT	
Curses_Screen_Fmt	202	166	Curses Screen Image			adRASTERIMAGE	
UUEncoded_Fmt	203	167	UU-encoded text	text/x-uuencode	UUE	adENCAPSULATION	uudsr
WriteNow_Fmt	204	168	WriteNow MAC			adWORDPROCESSOR	stringssr
PC_Obj_Fmt	205	169	DOS/Windows Object Module	application/octet-stream	OBJ, EXP	adOBJECTMODULE	
Windows_Group_Fmt	206	170	Windows Group		GRP	adMISC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
TrueType_Font_Fmt	207	171	TrueType Font	application/x-font-ttf	TTF	adFONT	
Windows_PIF_Fmt	208	172	Program Information File (PIF)	application/octet-stream	PIF	adMISC	
MS_COM_Executable_Fmt	209	173	PC (.COM)	application/octet-stream	COM	adEXECUTABLE	
StuffIt_Fmt	210	175	StuffIt (MAC)	application/x-stuffit	HQX	adENCAPSULATION	
PeachCalc_Fmt	211	176	PeachCalc		CAL	adSPREADSHEET	
Wang_GDL_Fmt	212	177	WANG Office GDL Header			adENCAPSULATION	
Q_A_DOS_Fmt	213	179	Symantec Q&A for DOS	application/x-qa-write		adWORDPROCESSOR	stringssr
Q_A_Win_Fmt	214	180	Symantec Q&A for Windows	application/x-qa-write	JW	adWORDPROCESSOR	stringssr
WPS_PLUS_Fmt	215	181	WPS-PLUS	application/vnd.ms-wpl	WPL	adWORDPROCESSOR	stringssr
DCX_Fmt	216	182	DCX FAX Format(PCX images)	image/dcx	DCX	adFAXFORMAT	kpdcxrdr
OLE_Fmt	217	183	OLE Compound Document		OLE	adENCAPSULATION	olesr
EBCDIC_Fmt	218	186	EBCDIC Text	application/ebcdic		adWORDPROCESSOR	
DCS_Fmt	219	187	DCS			adWORDPROCESSOR	
UNIX_SHAR_Fmt	220	190	SHAR shell archive format	application/x-shar	SHAR	adENCAPSULATION	
Lotus_Notes_BitMap_Fmt	221	191	Lotus Notes Bitmap			adRASTERIMAGE	
Lotus_Notes_CDF_Fmt	222	193	Lotus Notes CDF	application/cdf	CDF	adWORDPROCESSOR	stringssr
Compress_Fmt	223	192	UNIX Compress archive	application/x-compress	Z	adENCAPSULATION	kvzee, kvzeesr
GZ_Compress_Fmt	224	198	GZ Compress archive	application/gzip	GZ	adENCAPSULATION	kvgz, kvgzsr
TAR_Fmt	225	194	TAR (tape archive)	application/tar	TAR	adENCAPSULATION	tarsr
ODIF_FOD26_Fmt	226	196	Open Document Architecture (ODA / ODIF) FOD26	application/oda	F26	adWORDPROCESSOR	
ODIF_FOD36_Fmt	227	196	Open Document Architecture (ODA / ODIF) FOD36	application/oda	F36	adWORDPROCESSOR	
ALIS_Fmt	228	197	ALIS			adWORDPROCESSOR	
Envoy_Fmt	229	199	WordPerfect Envoy	application/envoy	EVY	adWORDPROCESSOR	
PDF_Fmt	230	200	Adobe PDF (Portable Document Format)	application/pdf	PDF	adWORDPROCESSOR	kppdf2rdr, kppdfrdr, pdf2sr, pdfsr
BinHex_Fmt	231	206	BinHex	application/mac-binhex40	HQX	adENCAPSULATION	kvhqxsr
SMTP_Fmt	232	207	SMTP (Text Mail / Outlook Express)	message/rfc822	SMTP	adENCAPSULATION	emlsr
MIME_Fmt	233	208	MIME (EML / MBX email)[1]	message/rfc822	EML, MBX	adENCAPSULATION	mbxsr
USENET_Fmt	234	264	USENET	message/news		adWORDPROCESSOR	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
SGML_Fmt	235	209	SGML	text/sgml	SGML	adWORDPROCESSOR	afsr
HTML_Fmt	236	210	HTML	text/html	HTM, HTML	adWORDPROCESSOR	htmsr
ACT_Fmt	237	211	ACT! CRM software		ACT	adWORDPROCESSOR	
PNG_Fmt	238	213	Portable Network Graphics (PNG)	image/png	PNG	adRASTERIMAGE	kppngrdr, pngsr
MS_Video_Fmt	239	214	Video for Windows (AVI)	video/avi	AVI	adMOVIE	MCI
Windows_Animated_Cursor_Fmt	240	215	Windows Animated Cursor		ANI	adRASTERIMAGE	kpanirdr
Windows_CPP_Obj_Storage_Fmt	241	216	Windows C++ Object Storage			adMIXED	
Windows_Palette_Fmt	242	217	Windows Palette		PAL	adRASTERIMAGE	
RIFF_DIB_Fmt	243	218	RIFF Device Independent Bitmap			adRASTERIMAGE	
RIFF_MIDI_Fmt	244	219	RIFF MIDI	audio/midi	RMI	adSOUND	
RIFF_Multimedia_Movie_Fmt	245	220	RIFF Multimedia Movie		MMM	adMOVIE	
MPEG_Fmt	246	221	MPEG Movie	video/mpeg		adMOVIE	
QuickTime_Fmt	247	222	QuickTime Movie, MPEG-4 audio	video/quicktime	MOV, QT, MP4	adMOVIE	MCI, mpeg4sr
AIFF_Fmt	248	223	Audio Interchange File Format (AIFF)	audio/aiff	AIF, AIFF, AIFC	adSOUND	MCI, aiffsr
Amiga_MOD_Fmt	249	224	Amiga MOD		MOD	adSOUND	
Amiga_IFF_8SVX_Fmt	250	225	Amiga IFF (8SVX) Sound	audio/x-8svx	IFF	adSOUND	
Creative_Voice_Audio_Fmt	251	226	Creative Voice (VOC)		VOC	adSOUND	
AutoDesk_Animator_FLI_Fmt	252	229	AutoDesk Animator FLIC	video/x-fli	FLI	adANIMATION	
AutoDesk_AnimatorPro_FLC_Fmt	253	230	AutoDesk Animator Pro FLIC	video/x-flc	FLC	adANIMATION	
Compactor_Archive_Fmt	254	233	Compactor / Compact Pro	application/mac-compactpro		adENCAPSULATION	
VRML_Fmt	255	234	VRML	model/vrml	WRL	adVECTORGRAPHIC	
QuickDraw_3D_Metafile_Fmt	256	235	QuickDraw 3D Metafile			adVECTORGRAPHIC	
PGP_Secret_Keyring_Fmt	257	236	PGP secret key	application/pgp		adENCAPSULATION	
PGP_Public_Keyring_Fmt	258	237	PGP public key	application/pgp		adENCAPSULATION	
PGP_Encrypted_Data_Fmt	259	238	PGP encrypted data	application/pgp		adENCAPSULATION	
PGP_Signed_Data_Fmt	260	239	PGP signed data	application/pgp		adENCAPSULATION	
PGP_SignedEncrypted_Data_Fmt	261	240	PGP signed and encrypted data	application/pgp		adENCAPSULATION	
PGP_Sign_Certificate_Fmt	262	241	PGP signature certificate	application/pgp-signature	SIG	adENCAPSULATION	
PGP_Compressed_Data_Fmt	263	246	PGP compressed data	application/pgp		adENCAPSULATION	
PGP_ASCII_Public_Keyring_Fmt	264	242	ASCII-armored PGP public key	application/pgp	PGP	adENCAPSULATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
PGP_ASCII_Encoded_Fmt	265	243	ASCII-armored PGP-encoded message	application/pgp		adENCAPSULATION	
PGP_ASCII_Signed_Fmt	266	244	ASCII-armored PGP signed	application/pgp		adENCAPSULATION	
OLE_DIB_Fmt	267	245	OLE DIB object			adRASTERIMAGE	
SGI_Image_Fmt	268	247	SGI RGB Image	image/sgi	RGB	adRASTERIMAGE	kpsgirdr
Lotus_ScreenCam_Fmt	269	248	Lotus ScreenCam	application/vnd.lotus-screencam	SCM	adANIMATION	
MPEG_Audio_Fmt	270	249	MPEG-1 Audio layer3 (MP3)	audio/mpeg	MPEGA, MPG, MP3	adSOUND	MCI, mp3sr
FTP_Software_Session_Fmt	271	250	FTP Session Data		STE	adCOMMUNICATION	
Netscape_Bookmark_File_Fmt	272	210	Netscape Bookmark File	text/html		adWORDPROCESSOR	htmsr
Corel_Draw_CMX_Fmt	273	252	Corel CMX	application/cmx	CMX	adVECTORGRAPHIC	
AutoDesk_DWG_Fmt	274	253	AutoDesk AutoCAD Drawing (DWG)	image/x-dwg	DWG	adVECTORGRAPHIC	kpDWGrdr, kpODArdr
AutoDesk_WHIP_Fmt	275	254	AutoDesk WHIP		WHP	adVECTORGRAPHIC	
Macromedia_Director_Fmt	276	255	Macromedia Shockwave/Adobe Director	application/x-director	DCR, DXR, DIR	adANIMATION	
Real_Audio_Fmt	277	256	Real Audio	audio/x-pn-realaudio	RM, RA	adSOUND	
MSDOS_Device_Driver_Fmt	278	257	MSDOS Device Driver	application/octet-stream	SYS	adEXECUTABLE	
Micrografx_Designer_Fmt	279	258	Micrografx Designer		DSF	adVECTORGRAPHIC	
SVF_Fmt	280	259	Simple Vector Format (SVF)	image/x-svf	SVF	adVECTORGRAPHIC	
Applix_Words_Fmt	281	261	Applix Words	application/x-applix-word	AW	adWORDPROCESSOR	awsr
Applix_Graphics_Fmt	282	262	Applix Graphics		AG	adPRESENTATION	kpagrdr
MS_Access_Fmt	283	263	Microsoft Access (versions 1 and 2)	application/x-msaccess	MDB	adDATABASE	mdbsr
MS_Access_95_Fmt	284	263	Microsoft Access 95	application/msaccess	MDB	adDATABASE	mdbsr
MS_Access_97_Fmt	285	263	Microsoft Access 97	application/msaccess	MDB	adDATABASE	mdbsr
MacBinary_Fmt	286	265	MacBinary	application/x-macbinary	BIN	adENCAPSULATION	macbinsr
Apple_Single_Fmt	287	266	Apple Single			adENCAPSULATION	
Apple_Double_Fmt	288	267	Apple Double	multipart/appledouble	AD	adENCAPSULATION	
Enhanced_Metafile_Fmt	289	270	Enhanced Metafile	image/x-emf	EMF	adVECTORGRAPHIC	kpemfrdr
MS_Office_Drawing_Fmt	290	271	Microsoft Office Drawing			adVECTORGRAPHIC	kpmsordr
XML_Fmt	291	285	XML	text/xml	XML	adWORDPROCESSOR	xmlsr
DeVice_Independent_Fmt	292	274	DeVice Independent file (DVI)	application/x-dvi	DVI	adVECTORGRAPHIC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Unicode_Fmt	293	275	Unicode text file	text/plain	UNI	adWORDPROCESSOR	unisr
Lotus_123_Worksheet_Fmt	294	81	Lotus 1-2-3	application/x-lotus-123	WKS, WK1, WK3, WK4	adSPREADSHEET	wkssr
Lotus_123_Format_Fmt	295	81	Lotus 1-2-3 Formatting	application/x-123	FM3	adSPREADSHEET	l123sr
Lotus_123_97_Fmt	296	81	Lotus 1-2-3 97	application/x-lotus-123	123	adSPREADSHEET	l123sr
Lotus_Word_Pro_96_Fmt	297	268	Lotus Word Pro 96	application/vnd.lotus-wordpro	LWP, MWP	adWORDPROCESSOR	lwpsr
Lotus_Word_Pro_97_Fmt	298	268	Lotus Word Pro 97	application/vnd.lotus-wordpro	LWP, MWP	adWORDPROCESSOR	lwpsr
Freelance_DOS_Fmt	299	140	Lotus Freelance for DOS	application/x-freelance	PRZ	adPRESENTATION	kpprzrdr
Freelance_Win_Fmt	300	140	Lotus Freelance for Windows	application/x-freelance	PRE, FLW	adPRESENTATION	kpprerdr
Freelance_OS2_Fmt	301	140	Lotus Freelance for OS/2	application/x-freelance	PRS	adPRESENTATION	kpprerdr
Freelance_96_Fmt	302	140	Lotus Freelance 96	application/x-freelance	PRZ	adPRESENTATION	kpprzrdr
Freelance_97_Fmt	303	140	Lotus Freelance 97	application/x-freelance	PRZ	adPRESENTATION	kpprzrdr
MS_Word_95_Fmt	304	189	Microsoft Word 95	application/msword	DOC	adWORDPROCESSOR	mw6sr
MS_Word_97_Fmt	305	269	Microsoft Word 97	application/msword	DOC, WPS, WBK	adWORDPROCESSOR	mw8sr
Excel_Fmt	306	90	Microsoft Excel (up to version 5)	application/x-ms-excel	XLS	adSPREADSHEET	xlssr
Excel_Chart_Fmt	307	90	Microsoft Excel (up to version 5) chart	application/x-ms-excel	XLC	adSPREADSHEET	xlssr
Excel_Macro_Fmt	308	90	Microsoft Excel (up to version 5) macro	application/vnd.ms-excel	XLM	adSPREADSHEET	xlssr
Excel_95_Fmt	309	188	Microsoft Excel 95	application/x-ms-excel	XLS	adSPREADSHEET	xlssr
Excel_97_Fmt	310	188	Microsoft Excel 97	application/x-ms-excel	XLS, XLR	adSPREADSHEET	xlssr
Corel_Presentations_Fmt	311	127	Corel Presentations	application/x-corelpresentations	SHW, PRC	adPRESENTATION	kpshwrdr
Harvard_Graphics_Fmt	312	131	Harvard Graphics		PR4	adPRESENTATION	
Harvard_Graphics_Chart_Fmt	313	131	Harvard Graphics Chart		CH3, CHT	adVECTORGRAPHIC	
Harvard_Graphics_Symbol_Fmt	314	131	Harvard Graphics Symbol File (v3)		SY3	adVECTORGRAPHIC	
Harvard_Graphics_Cfg_Fmt	315	131	Harvard Graphics Configuration File			adVECTORGRAPHIC	
Harvard_Graphics_Palette_Fmt	316	131	Harvard Graphics Palette		PL	adVECTORGRAPHIC	
Lotus_123_R9_Fmt	317	81	Lotus 1-2-3 Release 9	application/x-lotus-123	123	adSPREADSHEET	l123sr
Applix_Spreadsheets_Fmt	318	278	Applix Spreadsheets	application/x-applix-spreadsheet	AS	adSPREADSHEET	assr
MS_Pocket_Word_Fmt	319	45	Microsoft Pocket Word for Handheld PC		PWD	adWORDPROCESSOR	rtfsr
MS_DIB_Fmt	320	279	Microsoft Device Independent	image/bmp	DIB	adRASTERIMAGE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			Bitmap				
MS_Word_2000_Fmt	321	269	Microsoft Word 2000	application/msword	DOC	adWORDPROCESSOR	mw8sr
Excel_2000_Fmt	322	188	Microsoft Excel 2000	application/x-ms-excel	XLS	adSPREADSHEET	xlssr
PowerPoint_2000_Fmt	323	272	Microsoft PowerPoint 2000	application/x-ms-powerpoint	PPT	adPRESENTATION	kpp97rdr
MS_Access_2000_Fmt	324	263	Microsoft Access 2000	application/x-msaccess	MDB	adDATABASE	mdbsr
MS_Project_4_Fmt	325	281	Microsoft Project 4		MPP	adSCHEDULE	mppsr
MS_Project_41_Fmt	326	281	Microsoft Project 4.1		MPP	adSCHEDULE	mppsr
MS_Project_98_Fmt	327	281	Microsoft Project 98	application/vnd.ms-project	MPP	adSCHEDULE	mppsr
Folio_Flat_Fmt	328	282	Folio Flat File		FFF	adWORDPROCESSOR	foliosr
HWP_Fmt	329	283	Haansoft Hangul HWP (Arae-Ah Hangul)	application/x-hwp	HWP	adWORDPROCESSOR	hwposr, hwpsr
ICHITARO_Fmt	330	284	ICHITARO (v4-10)	application/x-ichitaro	JTD	adWORDPROCESSOR	jtdsr
IS_XML_Fmt	331	273	Extended or Custom XML	text/xml	XML	adWORDPROCESSOR	
Oasys_Fmt	332	286	Fujitsu OASYS	application/vnd.fujitsu.oasys	OAS, OA2, OA3	adWORDPROCESSOR	oa2sr
PBM_ASC_Fmt	333	287	Portable Bitmap Utilities ASCII format (PBM)	image/pbm	PBM, PNM	adRASTERIMAGE	
PBM_BIN_Fmt	334	287	Portable Bitmap Utilities BINARY format (PBM)	image/pbm	PBM, PNM	adRASTERIMAGE	
PGM_ASC_Fmt	335	288	Portable Greymap Utilities ASCII format (PGM)	image/x-pgm	PGM, PNM	adRASTERIMAGE	
PGM_BIN_Fmt	336	288	Portable Greymap Utilities BINARY format (PGM)	image/x-pgm	PGM, PNM	adRASTERIMAGE	
PPM_ASC_Fmt	337	289	Portable Pixmap Utilities ASCII format (PPM)	image/x-portable-pixmap	PPM, PNM	adRASTERIMAGE	
PPM_BIN_Fmt	338	289	Portable Pixmap Utilities BINARY format (PPM)	image/x-portable-pixmap	PPM, PNM	adRASTERIMAGE	
XBM_Fmt	339	290	X-Window X Bitmap format (XBM)	image/x-xbitmap	XBM	adRASTERIMAGE	
XPM_Fmt	340	291	X-Window X Pixmap format (XPM)	image/xpm	XPM	adRASTERIMAGE	
FPX_Fmt	341	292	Kodak FlashPix FPX Image format	image/fpx	FPX	adRASTERIMAGE	olesr
PCD_Fmt	342	293	PCD Image format	image/pcd	PCD	adRASTERIMAGE	
MS_Visio_Fmt	343	294	Microsoft Visio (up to version 11)	image/x-vsd	VSD	adPRESENTATION	kpVSD2rdr, vsdsr
MS_Project_2000_Fmt	344	281	Microsoft Project 2000	application/vnd.ms-project	MPP	adSCHEDULE	mppsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MS_Outlook_Fmt	345	295	Microsoft Outlook message	application/vnd.ms-outlook	MSG, OFT	adENCAPSULATION	msgsr
ELF_Relocatable_Fmt	346	159	ELF Relocatable	application/octet-stream	O	adOBJECTMODULE	
ELF_Executable_Fmt	347	158	ELF Executable	application/octet-stream		adEXECUTABLE	
ELF_Dynamic_Lib_Fmt	348	160	ELF Dynamic Library	application/octet-stream	SO	adLIBRARY	
MS_Word_XML_Fmt	349	285	Microsoft Word 2003 XML	text/xml	XML	adWORDPROCESSOR	xmlsr
MS_Excel_XML_Fmt	350	285	Microsoft Excel 2003 XML	text/xml	XML	adWORDPROCESSOR	xmlsr
MS_Visio_XML_Fmt	351	285	Microsoft Visio 2003 XML	text/xml	VDX	adWORDPROCESSOR	xmlsr
SO_Text_XML_Fmt	352	314	OpenDocument format (OpenOffice 1/StarOffice 6,7) Text XML	application/vnd.sun.xml.writer	SXW	adWORDPROCESSOR	odfwpsr
SO_Spreadsheet_XML_Fmt	353	315	OpenDocument format (OpenOffice 1/StarOffice 6,7) Spreadsheet XML	application/vnd.sun.xml.calc	SXC, STC	adSPREADSHEET	sosr
SO_Presentation_XML_Fmt	354	316	OpenDocument format (OpenOffice 1/StarOffice 6,7) Presentation XML	application/vnd.sun.xml.impress	SXD, SXI	adPRESENTATION	kpodfrdr
XHTML_Fmt	355	296	XHTML	text/xhtml	XML, XHTML, XHT	adWORDPROCESSOR	
MS_OutlookPST_Fmt	356	297	Microsoft Outlook Personal Folders File (.pst)	application/vnd.ms-outlook-pst	PST	adENCAPSULATION	pstnsr, pstsr, pstxsr
RAR_Fmt	357	298	RAR archive format	application/x-rar-compressed	RAR, REV, R00, R01	adENCAPSULATION, adEXECUTABLE	rarsr
Lotus_Notes_NSF_Fmt	358	299	IBM Lotus Notes Database NSF/NTF	application/x-lotus-notes	NSF	adENCAPSULATION	nsfsr
Macromedia_Flash_Fmt	359	300	Macromedia Flash (.swf)	application/x-shockwave-flash	SWF, SWD	adWORDPROCESSOR	swfsr
MS_Word_2007_Fmt	360	301	Microsoft Word 2007 XML - Docx	application/x-ms-word07	DOCX, DOTX	adWORDPROCESSOR	mwxsr
MS_Excel_2007_Fmt	361	302	Microsoft Excel 2007 XML	application/x-ms-excel07	XLSX, XLTX	adSPREADSHEET	xlsxsr
MS_PPT_2007_Fmt	362	303	Microsoft PowerPoint 2007 XML	application/x-ms-powerpoint07	PPTX, POTX, PPSX	adPRESENTATION	kpppxrdr
OpenPGP_Fmt	363	304	OpenPGP/GPG Message Format (with new packet format)	application/pgp-encrypted	GPG, PGP	adENCAPSULATION	
Intergraph_V7_DGN_Fmt	364	305	Intergraph Standard File Format (ISFF) V7 DGN (non-OLE)		DGN	adVECTORGRAPHIC	
MicroStation_V8_DGN_Fmt	365	306	MicroStation V8 DGN (OLE)		DGN	adVECTORGRAPHIC	olesr
MS_Word_Macro_2007_Fmt	366	307	Microsoft Word Macro 2007 XML	application/x-ms-word07m	DOCM, DOTM	adWORDPROCESSOR	mwxsr
MS_Excel_Macro_2007_Fmt	367	308	Microsoft Excel Macro 2007 XML	application/x-ms-excel07m	XLSM, XLTM, XLAM	adSPREADSHEET	xlsxsr
MS_PPT_Macro_2007_Fmt	368	309	Microsoft PPT Macro 2007 XML	application/x-ms-powerpoint07m	PPTM, POTM, PPSM, PPAM	adPRESENTATION	kpppxrdr
LZH_Fmt	369	310	LZH Archive	application/x-lzh-compressed	LZH, LHA	adENCAPSULATION	lzhsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Office_2007_Fmt	370	311	Office 2007 document that cannot be further classified (often RMS-encrypted)		DOCX, XLSX, PPTX, XLSB	adMISC	
MS_XPS_Fmt	371	312	Microsoft Open XML Paper Specification (XPS/OXPS)	application/vnd.ms-xpsdocument	XPS, OXPS	adWORDPROCESSOR	xpssr
Lotus_Domino_DXL_Fmt	372	313	IBM Domino Data in XML format (.dxl)	application/x-dxlfile	DXL	adENCAPSULATION	dxlsr
ODF_Text_Fmt	373	314	ODF Text	application/vnd.oasis.opendocument.text	ODT	adWORDPROCESSOR	odfwpsr
ODF_Spreadsheet_Fmt	374	315	ODF Spreadsheet	application/vnd.oasis.opendocument.spreadsheet	ODS	adSPREADSHEET	odfsssr
ODF_Presentation_Fmt	375	316	ODF Presentation	application/vnd.oasis.opendocument.presentation	ODP	adPRESENTATION	kpodfrdr
Legato_Extender_ONM_Fmt	376	317	Legato Extender Native Message ONM	application/x-lotus-notes	ONM	adENCAPSULATION	onmsr
bin_Unknown_Fmt	377	318	Bin unknown format (.xxx)			adWORDPROCESSOR	
TNEF_Fmt	378	319	Transport Neutral Encapsulation Format (TNEF)	application/vnd.ms-tnef		adENCAPSULATION	tnefsr
CADAM_Drawing_Fmt	379	320	CADAM Drawing		CDD	adVECTORGRAPHIC	
CADAM_Drawing_Overlay_Fmt	380	321	CADAM Drawing Overlay		CDO	adVECTORGRAPHIC	
NURSTOR_Drawing_Fmt	381	322	NURSTOR Drawing		NUR	adVECTORGRAPHIC	
HP_GLP_Fmt	382	323	HP Graphics Language (Plotter)	vector/x-hpgl2	HPG	adVECTORGRAPHIC	
ASF_Fmt	383	324	Advanced Systems Format (ASF)	application/x-ms-asf	ASF	adMISC	asfsr
WMA_Fmt	384	325	Windows Media Audio Format (WMA)	audio/x-ms-wma	WMA	adSOUND	asfsr
WMV_Fmt	385	326	Windows Media Video Format (WMV)	video/x-ms-wmv	WMV	adMOVIE	asfsr
EMX_Fmt	386	327	Legato EMailXtender Archives Format (EMX)		EMX	adENCAPSULATION	emxsr
Z7Z_Fmt	387	328	7-Zip archive (7z)	application/7z	7Z	adENCAPSULATION, adEXECUTABLE	z7zsr
MS_Excel_Binary_2007_Fmt	388	329	Microsoft Excel Binary 2007	application/vnd.ms-excel.sheet.binary.macroenabled.12	XLSB	adSPREADSHEET	xlsbsr
CAB_Fmt	389	330	Microsoft Cabinet File (CAB)	application/vnd.ms-cab-compressed	CAB	adENCAPSULATION	cabsr
CATIA_Fmt	390	331	CATIA Formats (CAT*)		CATPART, CATPRODUCT[2]	adVECTORGRAPHIC	kpCATrdr
YIM_Fmt	391	332	Yahoo! Instant Messenger History		DAT	adWORDPROCESSOR	yimsr
ODF_Drawing_Fmt	392	316	ODF Drawing/Graphics	application/vnd.oasis.opendocument.graphics	ODG	adVECTORGRAPHIC	kpodfrdr
Founder_CEB_Fmt	393	333	Founder Chinese E-paper Basic	application/ceb	CEB	adWORDPROCESSOR	cebsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			(ceb)				
QPW_Fmt	394	334	Corel Quattro Pro 9+ for Windows	application/quattro-pro	QPW	adSPREADSHEET	qpwsr
MHT_Fmt	395	335	MIME HTML MHTML format (MHT)[1]	multipart/related	MHT, MHTML	adWORDPROCESSOR	mhtsr
MDI_Fmt	396	336	Microsoft Document Imaging Format	image/vnd.ms-modi	MDI	adRASTERIMAGE	
GRV_Fmt	397	337	Microsoft Office Groove Format	application/vnd.groove-injector	GRV	adWORDPROCESSOR	
IWWP_Fmt	398	338	Apple iWork Pages format	application/vnd.apple.pages	PAGES	adWORDPROCESSOR	iwwpsr
IWSS_Fmt	399	339	Apple iWork Numbers format	application/vnd.apple.numbers	NUMBERS	adSPREADSHEET	iwsssr
IWPG_Fmt	400	340	Apple iWork Keynote format	application/vnd.apple.keynote	KEY	adPRESENTATION	kpIWPGrdr
BKF_Fmt	401	341	Microsoft Windows Backup File		BKF	adENCAPSULATION	bkfsr
MS_Access_2007_Fmt	402	342	Microsoft Access 2007	application/msaccess	ACCDB	adDATABASE	mdbsr
ENT_Fmt	403	343	Microsoft Entourage Database Format			adENCAPSULATION	entsr
DMG_Fmt	404	344	Mac Disk Copy Disk Image File	application/x-apple-diskimage	DMG, ISO, IMAGE	adENCAPSULATION	dmgsr
CWK_Fmt	405	345	AppleWorks (Claris Works) File	application/appleworks	CWK	adWORDPROCESSOR	stringssr
OO3_Fmt	406	346	Omni Outliner V3 File		OO3	adWORDPROCESSOR	oo3sr
OPML_Fmt	407	347	Omni Outliner OPML File		OPML	adWORDPROCESSOR	oo3sr
Omni_Graffle_XML_Fmt	408	348	Omni Graffle XML File		GRAFFLE	adVECTORGRAPHIC	kpGFLrdr
PSD_Fmt	409	349	Adobe Photoshop Document	image/vnd.adobe.photoshop	PSD, PSB	adRASTERIMAGE	psdsr
Apple_Binary_PList_Fmt	410	350	Apple Binary Property List format	application/x-bplist	PLIST	adMISC	
Apple_iChat_Fmt	411	351	Apple iChat format		ICHAT	adWORDPROCESSOR	ichatsr
OOUTLINE_Fmt	412	352	OOutliner File		OOUTLINE	adWORDPROCESSOR	oo3sr
BZIP2_Fmt	413	353	Bzip 2 Compressed File	application/x-bzip2	BZ2	adENCAPSULATION	bzip2sr
ISO_Fmt	414	354	ISO-9660 CD Disc Image Format	application/x-iso9660-image	ISO	adENCAPSULATION	isosr
DocuWorks_Fmt	415	355	DocuWorks Format	application/vnd.fujixerox.docuworks	XDW	adWORDPROCESSOR	
RealMedia_Fmt	416	356	RealMedia Streaming Media	application/vnd.rn-realmedia	RM, RA	adMOVIE	
AC3Audio_Fmt	417	357	AC3 Audio File Format	audio/ac3	AC3	adSOUND	
NEF_Fmt	418	358	Nero Encrypted File		NEF	adENCAPSULATION	
SolidWorks_Fmt	419	359	SolidWorks Format Files		SLDASM, SLDPRT, SLDDRW, SLDDRT	adVECTORGRAPHIC	olesr
XFDL_Fmt	420	366	Extensible Forms Description Language	application/x-xfdl	XFDL, XFD	adPRESENTATION	kpXFDLrdr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Apple_XML_PList_Fmt	421	367	Apple XML Property List format	application/x-plist	PLIST	adMISC	
OneNote_Fmt	422	368	Microsoft OneNote Note Format	application/onenote	ONE	adWORDPROCESSOR	onesr
IFilter_Fmt	423	369	iFilter			adWORDPROCESSOR	
Dicom_Fmt	424	370	Digital Imaging and Communications in Medicine (Dicom)	application/dicom	DCM	adRASTERIMAGE	dcmsr
EnCase_Fmt	425	371	Expert Witness Compression Format (EnCase)		E01, L01, LX01	adENCAPSULATION	encase2sr, encasesr
Scrap_Fmt	426	372	Shell Scrap Object File		SHS	adENCAPSULATION	olesr
MS_Project_2007_Fmt	427	373	Microsoft Project 2007	application/vnd.ms-project	MPP	adSCHEDULE	mppsr
MS_Publisher_98_Fmt	428	374	Microsoft Publisher from version 98	application/x-mspublisher	PUB	adDESKTOPPUBLSH	mspubsr
Skype_Fmt	429	375	Skype Log File		DBB	adWORDPROCESSOR	skypesr
HI7_Fmt	430	377	Health level7 message		HL7	adWORDPROCESSOR	hl7sr
MS_OutlookOST_Fmt	431	378	Microsoft Outlook Offline Folders File (OST)	application/vnd.ms-outlook-pst	OST	adENCAPSULATION	pffsr
Epub_Fmt	432	379	Open Publication Structure electronic publication	application/epub+zip	EPUB	adWORDPROCESSOR	epubsr
MS_OEDBX_Fmt	433	380	Microsoft Outlook Express DBX Message Database		DBX	adENCAPSULATION	dbxsr
BB_Activ_Fmt	434	381	BlackBerry Activation File		DAT	adWORDPROCESSOR	
DiskImage_Fmt	435	382	Disk Image		DMG	adENCAPSULATION	
Milestone_Fmt	436	383	Milestone Document		MLS, ML3, ML4, ML5, ML6, ML7, ML8, ML9, MLA	adRASTERIMAGE	
E_Transcript_Fmt	437	384	RealLegal E-Transcript File		PTX	adWORDPROCESSOR	
PostScript_Font_Fmt	438	385	PostScript Type 1 Font	application/x-font	PFB	adFONT	pfasr
Ghost_DiskImage_Fmt	439	386	Ghost Disk Image File		GHO, GHS	adENCAPSULATION	
JPEG_2000_JP2_File_Fmt	440	387	JPEG-2000 JP2 File Format Syntax (ISO/IEC 15444-1)	image/jp2	JP2, JPF, J2K, JPWL, JPX, PGX	adRASTERIMAGE	jp2000sr, kpjp2000rdr
Unicode_HTML_Fmt	441	388	Unicode HTML	text/html	HTM, HTML	adWORDPROCESSOR	unihtmsr
CHM_Fmt	442	389	Microsoft Compiled HTML Help	application/x-chm	CHM	adENCAPSULATION	chmsr
EMCMF_Fmt	443	390	Documentum EMCMF format		EMCMF	adENCAPSULATION	msgsr
MS_Access_2007_Tmpl_Fmt	444	391	Microsoft Access 2007 Template		ACCDT	adDATABASE	
Jungum_Fmt	445	392	Samsung Electronics Jungum	application/jungum	GUL	adWORDPROCESSOR	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			Global document				
JBIG2_Fmt	446	393	JBIG2 File Format	image/jbig2	JB2, JBIG2	adRASTERIMAGE	kpJBIG2rdr
EFax_Fmt	447	394	eFax file		EFX	adRASTERIMAGE	
AD1_Fmt	448	395	AD1 Evidence file		AD1	adENCAPSULATION	ad1sr
SketchUp_Fmt	449	396	Google SketchUp		SKP	adVECTORGRAPHIC	
GWFS_Email_Fmt	450	397	GroupWise FileSurf email		GWFS	adENCAPSULATION	gwfssr
JNT_Fmt	451	398	Windows Journal format		JNT	adWORDPROCESSOR	
Yahoo_yChat_Fmt	452	399	Yahoo! Messenger chat log		YCHAT	adWORDPROCESSOR	
PaperPort_MAX_File_Fmt	453	400	PaperPort MAX image file	image/max	MAX	adRASTERIMAGE	
ARJ_Fmt	454	402	ARJ (Archive by Robert Jung) file format	application/arj	ARJ	adENCAPSULATION	multiarcsr
RPMSG_Fmt	455	403	Microsoft Outlook Restricted Permission Message	application/x-microsoft-rpmsg-message	RPMSG	adENCAPSULATION	rpmsgsr
MAT_Fmt	456	404	MATLAB file format	application/x-matlab-data	MAT, FIG	adWORDPROCESSOR	
SGY_Fmt	457	405	SEG-Y Seismic Data format		SGY, SEGY	adWORDPROCESSOR	
CDXA_MPEG_PS_Fmt	458	406	MPEG-PS container with CDXA stream	video/mpeg	MPG	adMOVIE	
EVT_Fmt	459	407	Microsoft Windows NT Event Log		EVT	adMISC	
EVTX_Fmt	460	408	Microsoft Windows Vista Event Log		EVTX	adMISC	
MS_OutlookOLM_Fmt	461	409	Microsoft Outlook for Macintosh format		OLM	adENCAPSULATION	olmsr
WARC_Fmt	462	410	Web ARChive	application/warc	WARC	adENCAPSULATION	
JAVACLASS_Fmt	463	411	Java Class format	application/x-java-class	CLASS	adWORDPROCESSOR	
VCF_Fmt	464	412	Microsoft Outlook vCard file format	text/vcard	VCF	adWORDPROCESSOR	vcfsr
EDB_Fmt	465	413	Microsoft Exchange Server Database file format		EDB	adENCAPSULATION	
ICS_Fmt	466	414	Microsoft Outlook iCalendar file format	text/calendar	ICS, VCS	adENCAPSULATION	icssr
MS_Visio_2013_Fmt	467	415	Microsoft Visio 2013	application/vnd.visio	VSDX, VSTX, VSSX	adPRESENTATION	ActiveX components, kpVSDXrdr
MS_Visio_2013_Macro_Fmt	468	415	Microsoft Visio 2013 macro	application/vnd.visio	VSDM, VSTM, VSSM	adPRESENTATION	kpVSDXrdr
ICHITARO_Compr_Fmt	469	417	ICHITARO Compressed format	application/x-js-taro	JTDC	adWORDPROCESSOR	jtdsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
IWWP13_Fmt	470	418	Apple iWork 2013 Pages format		IWA, PAGES	adWORDPROCESSOR	iwwp13sr
IWSS13_Fmt	471	419	Apple iWork 2013 Numbers format		IWA, NUMBERS	adSPREADSHEET	iwss13sr
IWPG13_Fmt	472	420	Apple iWork 2013 Keynote format		IWA, KEY	adPRESENTATION	kpIWPG13rdr, kpIWPGrdr
XZ_Fmt	473	421	XZ archive format	application/x-xz	XZ	adENCAPSULATION	multiarcsr
Sony_WAVE64_Fmt	474	422	Sony Wave64 format	audio/wav64	W64	adSOUND	
Conifer_WAVPACK_Fmt	475	423	Conifer Wavpack format	audio/x-wavpack	WV	adSOUND	
Xiph_OGG_VORBIS_Fmt	476	424	Xiph Ogg Vorbis format	audio/ogg	OGG	adSOUND	
MS_Visio_2013_Stencil_Fmt	477	415	MS Visio 2013 stencil format	application/vnd.visio	VSSX	adPRESENTATION	kpVSDXrdr
MS_Visio_2013_Stencil_Macro_Fmt	478	415	MS Visio 2013 stencil Macro format	application/vnd.visio	VSSM	adPRESENTATION	kpVSDXrdr
MS_Visio_2013_Template_Fmt	479	415	MS Visio 2013 template format	application/vnd.visio	VSTX	adPRESENTATION	kpVSDXrdr
MS_Visio_2013_Template_Macro_Fmt	480	415	MS Visio 2013 template Macro format	application/vnd.visio	VSTM	adPRESENTATION	kpVSDXrdr
Borland_Reflex_2_Fmt	481	425	Borland Reflex 2 format		R2D	adDATABASE	
PKCS_12_Fmt	482	426	PKCS #12 (p12) format	application/x-pkcs12	P12, PFX	adWORDPROCESSOR	
B1_Fmt	483	427	B1 format	application/x-b1	B1	adENCAPSULATION	b1sr
ISO_IEC_MPEG_4_Fmt	484	428	ISO/IEC MPEG-4 (ISO 14496) format	video/mp4	MP4	adMOVIE	mpeg4sr
RAR5_Fmt	485	429	RAR5 Format	application/x-rar-compressed	RAR	adENCAPSULATION	multiarcsr
Unigraphics_NX_Fmt	486	362	Unigraphics (UG) NX CAD Format		PRT	adVECTORGRAPHIC	kpUGrdr
PTC_Creo_Fmt	487	430	PTC Creo CAD Format		ASM, PRT	adVECTORGRAPHIC	
KML_Fmt	488	431	Keyhole Markup Language	application/vnd.google-earth.kml+xml	KML	adWORDPROCESSOR	xmlsr
KMZ_Fmt	489	432	Zipped Keyhole Markup Language	application/vnd.google-earth.kmz	KMZ	adWORDPROCESSOR	unzip
WML_Fmt	490	433	Wireless Markup Language	text/vnd.wap.wml	WML	adWORDPROCESSOR	xmlsr
ODF_Formula_Fmt	491	434	ODF Formula	application/vnd.oasis.opendocument.formula	ODF	adWORDPROCESSOR	unzip
SO_Text_Fmt	492	435	Star Office 4,5 Writer Text	application/vnd.stardivision.writer	SDW, SGL, VOR	adWORDPROCESSOR	kpsdwrdr, starwsr
SO_Spreadsheet_Fmt	493	436	Star Office 4,5 Calc Spreadsheet	application/vnd.stardivision.calc	SDC	adSPREADSHEET	starcsr
SO_Presentation_Fmt	494	437	Star Office 4,5 Impress Presentation	application/vnd.stardivision.draw	SDD, SDA	adPRESENTATION	kpsddrdr
SO_Math_Fmt	495	438	Star Office 4,5 Math	application/vnd.stardivision.math	SMF	adMISC	olesr
STEP_Fmt	496	439	ISO 10303-21 STEP format			adMISC	
STL_Fmt	497	364	3D Systems Stereo Lithography STL			adCAD	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			ASCII format				
AppleScript_Fmt	498	440	AppleScript Source Code[3]	text/x-applescript	APPLESCRIPT	adSOURCECODE	afsr
Assembly_Fmt	499	441	Assembly Code[3]	text/x-assembly		adSOURCECODE	afsr
C_Fmt	500	442	C Source Code[3]	text/x-c	C, H	adSOURCECODE	afsr
Csharp_Fmt	501	443	C# Source Code[3]	text/x-csharp	CS	adSOURCECODE	afsr
CPlusPlus_Fmt	502	444	C++ Source Code[3]	text/x-c++	CPP, HPP	adSOURCECODE	afsr
Css_Fmt	503	445	Cascading Style Sheet[3]	text/css	CSS	adSOURCECODE	afsr
Clojure_Fmt	504	446	Clojure Source Code[3]	text/x-clojure	CLJ, CL2	adSOURCECODE	afsr
CoffeeScript_Fmt	505	447	CoffeeScript Source Code[3]	text/x-coffeescript	COFFEE, CAKE	adSOURCECODE	afsr
Lisp_Fmt	506	448	Common Lisp Source Code[3]	text/x-common-lisp	EL	adSOURCECODE	afsr
Dockerfile_Fmt	507	449	Dockerfile[3]	text/x-dockerfile		adSOURCECODE	afsr
Eiffel_Fmt	508	450	Eiffel Source Code[3]	text/x-eiffel	E	adSOURCECODE	afsr
Erlang_Fmt	509	451	Erlang Source Code[3]	text/x-erlang	ERL, ES	adSOURCECODE	afsr
Fsharp_Fmt	510	452	F# Source Code[3]	text/x-fsharp	FS	adSOURCECODE	afsr
Fortran_Fmt	511	453	Fortran Source Code[3]	text/x-fortran	F	adSOURCECODE	afsr
Go_Fmt	512	454	Go Source Code[3]	text/x-go	GO	adSOURCECODE	afsr
Groovy_Fmt	513	455	Groovy Source Code[3]	text/x-groovy	GRT, GVY	adSOURCECODE	afsr
Haskell_Fmt	514	456	Haskell Source Code[3]	text/x-haskell	HS	adSOURCECODE	afsr
Ini_Fmt	515	457	Initialization (INI) file[3]	text/x-ini		adSOURCECODE	afsr
Java_Fmt	516	458	Java Source Code[3]	text/x-java-source	JAVA	adSOURCECODE	afsr
Javascript_Fmt	517	459	Javascript Source Code[3]	text/javascript	JS	adSOURCECODE	afsr
Lua_Fmt	518	460	Lua Source Code[3]	text/x-lua	LUA	adSOURCECODE	afsr
Makefile_Fmt	519	461	Makefile[3]	text/x-makefile	MAKE	adSOURCECODE	afsr
Mathematica_Fmt	520	462	Wolfram Mathematica Source Code[3]	text/x-mathematica	M	adSOURCECODE	afsr
ObjC_Fmt	521	464	Objective-C Source Code[3]	text/x-objc		adSOURCECODE	afsr
ObjCpp_Fmt	522	465	Objective-C++ Source Code[3]	text/x-objectivec++		adSOURCECODE	afsr
ObjJ_Fmt	523	466	Objective-J Source Code[3]	text/x-objectivej	J	adSOURCECODE	afsr
PHP_Fmt	524	467	PHP Source Code[3]	text/x-php	PHP	adSOURCECODE	afsr
PLSQL_Fmt	525	468	PLSQL Source Code[3]	text/x-plsql		adSOURCECODE	afsr
Pascal_Fmt	526	469	Pascal Source Code[3]	text/x-pascal	PASCAL	adSOURCECODE	afsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Perl_Fmt	527	470	Perl Source Code[3]	text/x-perl	PL	adSOURCECODE	afsr
Powershell_Fmt	528	471	PowerShell Source Code[3]	text/x-powershell	PS1	adSOURCECODE	afsr
Prolog_Fmt	529	472	Prolog Source Code[3]	text/x-prolog	PRO, PROLOG	adSOURCECODE	afsr
Puppet_Fmt	530	473	Puppet Source Code[3]	text/x-puppet	PP	adSOURCECODE	afsr
Python_Fmt	531	474	Python Source Code[3]	text/x-python	PY	adSOURCECODE	afsr
R_Fmt	532	475	R Source Code[3]	text/x-rsrc	R	adSOURCECODE	afsr
Ruby_Fmt	533	476	Ruby Source Code[3]	text/x-ruby	RB	adSOURCECODE	afsr
Rust_Fmt	534	477	Rust Source Code[3]	text/x-rust	RS	adSOURCECODE	afsr
Scala_Fmt	535	478	Scala Source Code[3]	text/x-scala	SC	adSOURCECODE	afsr
Shell_Fmt	536	479	Shell Script[3]	application/x-sh	SH	adSOURCECODE	afsr
Smalltalk_Fmt	537	480	Smalltalk Source Code[3]	text/x-stsrc	ST	adSOURCECODE	afsr
ML_Fmt	538	481	Standard ML Source Code[3]	text/x-ml	ML	adSOURCECODE	afsr
Swift_Fmt	539	482	Swift Source Code[3]	text/x-swift	SWIFT	adSOURCECODE	afsr
Tcl_Fmt	540	483	Tool Command Language (Tcl) Source Code[3]	text/x-tcl	TM	adSOURCECODE	afsr
Tex_Fmt	541	484	TeX Typesetting File[3]	application/x-tex		adSOURCECODE	afsr
TypeScript_Fmt	542	485	TypeScript Source Code[3]	text/x-typescript	TS	adSOURCECODE	afsr
Verilog_Fmt	543	486	Verilog Source Code[3]	text/x-verilog	V	adSOURCECODE	afsr
YAML_Fmt	544	487	YAML File[3]	text/x-yaml	YML	adSOURCECODE	afsr
Wiki_Fmt	545	488	MediaWiki File[3]	text/x-mediawiki		adWORDPROCESSOR	afsr
MS_Word_2007_Flat_XML_Fmt	546	301	Microsoft Word 2007 XML - Flat xml	text/xml	XML	adWORDPROCESSOR	mwxsr
Matroska_Fmt	547	489	Matroska video/audio File	video/x-matroska	MKV, MKA	adMOVIE	
SVG_Fmt	548	490	Scalable Vector Graphics image	image/svg+xml	SVG	adVECTORGRAPHIC	xmlsr
Shapefile_Fmt	549	491	Shapefile	application/x-shapefile	SHP, SHX	adGIS	
Flash_Video_Fmt	550	492	Flash video File	video/x-flv	FLV	adMOVIE	
Embedded_OpenType_Fmt	551	493	Embedded OpenType font	application/vnd.ms-fontobject	EOT	adFONT	
Web_Open_Font_Fmt	552	494	Web Open Font Format	font/woff	WOFF, WOFF2	adFONT	
OpenType_Fmt	553	495	OpenType Font	font/otf	OTF	adFONT	
MNG_Fmt	554	496	Multiple-image Network Graphics	video/x-mng	MNG	adANIMATION	
JNG_Fmt	555	497	JPEG Network Graphics	image/x-jng	JNG	adRASTERIMAGE	
AppleScript_Binary_Fmt	556	498	AppleScript Binary Source Code		SCPT	adSOURCECODE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Maya_Binary_Fmt	557	499	Autodesk Maya binary file		MB	adCAD	
Jupiter_Tesselation_Fmt	558	363	UGS Jupiter Tesselation file		JT	adCAD	
OGV_Fmt	559	500	Ogg Theora Video format	video/ogg	OGV	adMOVIE	
OGG_Container_Fmt	560	501	General Ogg Container format	application/ogg	OGG	adMISC	
GNU_Message_Catalog_Fmt	561	502	GNU Message Catalog format		MO	adMISC	
Windows_Shortcut_Fmt	562	503	Windows shortcut file	application/x-ms-shortcut	LNK	adMISC	
Apple_Typedstream_Fmt	563	504	Apple/NeXT typedstream data format			adMISC	
XCF_Fmt	564	505	GIMP XCF image	image/x-xcf	XCF	adRASTERIMAGE	
PaintShop_Pro_Fmt	565	506	PaintShop Pro image		PSP, PSPIMAGE	adRASTERIMAGE	
SQLite_Database_Fmt	566	507	SQLite database format	application/x-sqlite3	QHC	adDATABASE	
MySQL_Table_Fmt	567	508	MySQL table definition file		FRM	adDATABASE	
Microsoft_Program_DB_Fmt	568	509	Microsoft Program Database format		PDB	adDATABASE	
OpenEXR_Fmt	569	510	OpenEXR image format		EXR	adRASTERIMAGE	
XMV_Fmt	570	511	4X Movie File		4XM	adMOVIE	
AMV_Fmt	571	512	AMV video file		AMV	adMOVIE	
NIFF_Fmt	572	513	Notation Interchange File Format		NIF	adSOUND	
CuBase_Fmt	573	514	Steinberg CuBase file			adSOUND	
SoundFont_Fmt	574	515	SoundFont file			adSOUND	
WebP_Fmt	575	516	WebP image	image/webp	WEBP	adRASTERIMAGE	
ICC_Fmt	576	517	International Color Consortium files	application/vnd.iccprofile	ICC, ICM	adMISC	
PCF_Fmt	577	518	X11 Portable Compiled Font file	application/x-font-pcf	PCF	adFONT	
WebM_Fmt	578	519	WebM video file	video/webm	WEBM	adMOVIE	
AMFF_Fmt	579	520	Amiga Metafile		AMF	adVECTORGRAPHIC	
ANBM_Fmt	580	521	IFF Animated Bitmap			adRASTERIMAGE	
ANIM_Fmt	581	522	IFF Amiga animated raster graphics format			adRASTERIMAGE	
DEEP_Fmt	582	523	IFF-DEEP TVPaint image		DEEP	adRASTERIMAGE	
FAXX_Fmt	583	524	IFF-FAXX Facsimile image			adRASTERIMAGE	
ICON_Fmt	584	525	IFF Glow Icon image			adRASTERIMAGE	
ILBM_Fmt	585	526	Interleaved BitMap image		IFF	adRASTERIMAGE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
LWOB_Fmt	586	527	LightWave Object format		LWOB	adMISC	
MAUD_Fmt	587	528	IFF-MAUD MacroSystem audio format			adSOUND	
PBM_Fmt	588	529	IFF Planar BitMap			adRASTERIMAGE	
TDDD_Fmt	589	530	IFF TDDD and Imagine Object animation format		TDD	adRASTERIMAGE	
DjVu_Fmt	590	531	AT&T DjVu format	image/vnd.djvu	DJVU	adWORDPROCESSOR	
InDesign_Fmt	591	532	Adobe InDesign document	application/x-indesign	INDD	adDESKTOPPUBLSH	
Calamus_Fmt	592	533	Calamus Desktop Publishing			adDESKTOPPUBLSH	
Adaptive_MultiRate_Fmt	593	534	Adaptive Multi-Rate audio format	audio/amr	AMR	adSOUND	
FLAC_Fmt	594	535	Free Lossless Audio Codec format	audio/flac	FLAC	adSOUND	
Ogg_FLAC_Fmt	595	536	Ogg Container FLAC audio format		OGG	adSOUND	
SAS7BDAT_Fmt	596	537	SAS7BDAT database storage format		SAS7BDAT	adDATABASE	sassr
Design_Web_Format_Fmt	597	538	Autodesk Design Web Format	model/vnd.dwf	DWF	adCAD	
Adobe_Flash_Audio_Book_Fmt	598	539	Adobe Flash Player audio book	audio/mp4	F4B	adSOUND	mpeg4sr
Adobe_Flash_Audio_Fmt	599	540	Adobe Flash Player audio	audio/mp4	F4A	adSOUND	mpeg4sr
Adobe_Flash_Protected_Video_Fmt	600	541	Adobe Flash Player protected video	video/mp4	F4P	adMOVIE	mpeg4sr
Adobe_Flash_Video_Fmt	601	542	Adobe Flash Player video	video/x-f4v	F4V	adMOVIE	mpeg4sr
Audible_Audiobook_Fmt	602	543	Audible Enhanced Audiobook	audio/vnd.audible.aax	AAX	adSOUND	mpeg4sr
Canon_Camera_Fmt	603	544	Canon Digital Camera image			adRASTERIMAGE	
Canon_Raw_Fmt	604	545	Canon Raw image		CR3	adRASTERIMAGE	
Casio_Camera_Fmt	605	546	Casio Digital Camera image			adRASTERIMAGE	
Convergent_Design_Fmt	606	547	Convergent Design file			adRASTERIMAGE	
DMB_MAF_Audio_Fmt	607	548	DMB MAF audio			adSOUND	
DMB_MAF_Video_Fmt	608	549	DMB MAF video			adMOVIE	
DMP_Content_Fmt	609	550	Digital Media Project Content Format			adMISC	
DVB_Fmt	610	551	Digital Video Broadcast format	video/vnd.dvb.file	DVB	adMOVIE	
Dirac_Wavelet_Compression_Fmt	611	552	ISO-BMFF Dirac Wavelet compression			adMISC	
HEICS_Image_Sequence_Fmt	612	553	High Efficiency Image Format HEVC image sequence	image/heic-sequence	HEICS	adRASTERIMAGE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
HEIC_Image_Fmt	613	554	High Efficiency Image Format HEVC image	image/heic	HEIC	adRASTERIMAGE	
HEIFS_Image_Sequence_Fmt	614	555	High Efficiency Image Format image sequence	image/heif-sequence	HEIFS	adRASTERIMAGE	
HEIF_Image_Fmt	615	556	High Efficiency Image Format image	image/heif	HEIF	adRASTERIMAGE	
ISMACryp_Fmt	616	557	ISMACryp 2.0 Encrypted format			adENCAPSULATION	
ISO_3GPP2_Fmt	617	558	3GPP2 video file	video/3gpp2	3G2	adMOVIE	mpeg4sr
ISO_3GPP_Fmt	618	559	3GPP video file	video/3gpp	3GP	adMOVIE	mpeg4sr
ISO_JPEG2000_JP2_Fmt	619	560	ISO-BMFF JPEG 2000 image	image/jp2	JP2	adRASTERIMAGE	jp2000sr, kpjp2000rdr
ISO_JPEG2000_JPM_Fmt	620	561	ISO-BMFF JPEG 2000 compound image	image/jpm	JPM	adRASTERIMAGE	jp2000sr, kpjp2000rdr
ISO_JPEG2000_JPX_Fmt	621	562	ISO-BMFF JPEG 2000 with extensions	image/jpx	JPX	adRASTERIMAGE	jp2000sr, kpjp2000rdr
ISO_QuickTime_Fmt	622	563	Apple ISO-BMFF QuickTime video	video/quicktime	QT, MOV	adMOVIE	MCI
KDDI_Video_Fmt	623	564	KDDI Video file	video/3gpp2		adMOVIE	mpeg4sr
MAF_Photo_Player_Fmt	624	565	MAF Photo Player			adMISC	
MPEG4_AVC_Fmt	625	566	ISO-BMFF MPEG-4 with AVC extension	video/mp4		adMOVIE	mpeg4sr
MPEG4_M4A_Fmt	626	567	Apple MPEG-4 Part 14 audio	audio/x-m4a	M4A	adSOUND	mpeg4sr
MPEG4_M4B_Fmt	627	568	Apple MPEG-4 Part 14 audio book	audio/mp4	M4B	adSOUND	mpeg4sr
MPEG4_M4P_Fmt	628	569	Apple MPEG-4 Part 14 protected audio	audio/mp4	M4P	adSOUND	mpeg4sr
MPEG4_M4V_Fmt	629	570	Apple MPEG-4 Part 14 video	video/x-m4v	M4V	adMOVIE	mpeg4sr
MPEG4_Sony_PSP_Fmt	630	571	Sony PSP MPEG-4	audio/mp4	MP4	adSOUND	mpeg4sr
MPEG_21_Fmt	631	572	MPEG-21	audio/mp4		adMISC	mpeg4sr
Mobile_QuickTime_Fmt	632	573	Mobile QuickTime video	video/quicktime	MQV	adMOVIE	MCI
Motion_JPEG_2000_Fmt	633	574	Motion JPEG 2000	video/mj2	MJ2, MJP2	adMOVIE	jp2000sr, kpjp2000rdr
NTT_MPEG4_Fmt	634	575	NTT MPEG-4	video/mp4		adMOVIE	mpeg4sr
Nero_MPEG4_AVC_Profile	635	576	Nero MPEG-4 profile with AVC extension	video/mp4		adMOVIE	
Nero_MPEG4_Audio_Fmt	636	577	Nero AAC audio	audio/mp4		adSOUND	mpeg4sr
Nero_MPEG4_Profile	637	578	Nero MPEG-4 profile	video/mp4		adMOVIE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
OMA_DRM_Fmt	638	579	OMA DRM (ISOBMFF) Format			adMISC	
Panasonic_Camera_Fmt	639	580	Panasonic Digital Camera image			adRASTERIMAGE	
Ross_Video_Fmt	640	581	Ross video			adMOVIE	
SDA_Video_Fmt	641	582	SDA SD Memory Card video			adMOVIE	
Samsung_Stereoscopic_Fmt	642	583	Samsung stereoscopic stream			adMISC	
Sony_XAVC_Fmt	643	584	Sony XAVC video			adMOVIE	mpeg4sr
JPEG_2000_PGX_Fmt	644	585	JPEG 2000 PGX Verification Model image		PGX	adRASTERIMAGE	jp2000sr, kpjp2000rdr
Apple_Desktop_Services_Store_Fmt	645	586	Apple Desktop Services Store file		DS_Store	adMISC	
Core_Audio_Fmt	646	587	Apple Core Audio Format	audio/x-caf	CAF	adSOUND	
VICAR_Fmt	647	588	VICAR image format		IMG, MAP, VIC, VICAR	adRASTERIMAGE	
FITS_Fmt	648	589	Flexible Image Transport System FITS image	image/fits	FIT	adRASTERIMAGE	
DIF_Fmt	649	590	Digital Interface Format (DIF) DV video		DV	adMOVIE	
MPEG_Transport_Stream_Fmt	650	591	MPEG Transport Stream data	video/MP2T	TS, M2T, M2TS, MTS	adMISC	
MPEG_Sequence_Fmt	651	592	MPEG Sequence format	video/mpeg		adMISC	
Ogg_OGM_Fmt	652	593	Ogg OGM video format	video/ogg	OGM	adMOVIE	
Ogg_Speex_Fmt	653	594	Ogg Speex audio format	audio/ogg	SPX	adSOUND	
Ogg_Opus_Fmt	654	595	Ogg Opus audio format	audio/ogg	OGG	adSOUND	
Musepack_Audio_Fmt	655	596	Musepack audio format	audio/x-musepack	MPC	adSOUND	
ART_Image_Fmt	656	597	ART image format		ART	adRASTERIMAGE	
Vivo_Fmt	657	598	Vivo audio-video format	video/vnd.vivo	VIV	adMOVIE	
QCP_Fmt	658	599	Qualcomm QCP audio	audio/qcelp	QCP	adSOUND	
CSP_Codec_Fmt	659	600	Creative Signal Processor codec		CSP	adMISC	
TwinVQ_Fmt	660	601	NTT TwinVQ audio format		VQF	adSOUND	
Interplay_MVE_Fmt	661	602	Interplay MVE video format		MVE	adMOVIE	
IRIX_Moviemaker_Fmt	662	603	IRIX Silicon Graphics moviemaker video file	video/x-sgi-movie	MV, MOVIE	adMOVIE	
Sega_FILM_Fmt	663	604	Sega FILM video format		CPK, CAK	adMOVIE	
SMAF_Fmt	664	605	Synthetic music Mobile Application	application/vnd.smaf	MMF	adSOUND	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			Format				
NIST_SPHERE_Fmt	665	606	NIST SPeech HEader REsources format		NIST	adSOUND	
Chinese_AVS_Fmt	666	607	Chinese AVS video format			adMOVIE	
VQA_Fmt	667	608	Westwood Studios Vector Quantized Animation video file		VQA	adANIMATION	
YAFA_Fmt	668	609	Wildfire YAFA animation		YAFA	adANIMATION	
Origin_MVE_Fmt	669	610	Origin Wing Commander III MVE movie format		MVE	adMOVIE	
BBC_Dirac_Fmt	670	611	BBC Dirac video format	video/x-dirac	DRC	adMOVIE	
Maya_ASCII_Fmt	671	612	Autodesk Maya ASCII file format		MA	adCAD	
RenderMan_Fmt	672	613	Pixar RenderMan Interface Bytestream file		RIB	adVECTORGRAPHIC	
NOFF_Binary_Fmt	673	614	NOFF 3D Object File Format		NOFF	adVECTORGRAPHIC	
VTK_ASCII_Fmt	674	615	Visualization Toolkit VTK ASCII format		VTK	adVECTORGRAPHIC	
VTK_Binary_Fmt	675	616	Visualization Toolkit VTK Binary format		VTK	adVECTORGRAPHIC	
Wolfram_CDF_Fmt	676	617	Wolfram Mathematica Computable Document Format	application/cdf	CDF	adMISC	
Wolfram_Notebook_Fmt	677	618	Wolfram Mathematica Notebook Format		NB	adMISC	
HDF4_Fmt	678	619	Hierarchical Data Format HDF4	application/x-hdf	HDF, H4	adMISC	
HDF5_Fmt	679	620	Hierarchical Data Format HDF5	application/x-hdf	HDF, H5	adMISC	
ARMovie_Fmt	680	621	Acorn RISC ARMovie video format		RPL	adMOVIE	
Windows_TV_DVR_Fmt	681	622	Windows Television DVR format		WTV	adMOVIE	
InstallShield_Z_Fmt	682	623	InstallShield Z archive format	application/x-compress	Z	adENCAPSULATION	
MS_DirectDraw_Surface_Fmt	683	624	Microsoft DirectDraw Surface container format		DDS	adENCAPSULATION	
Bink_Fmt	684	625	Bink audio-video container format		BIK, BK2	adMOVIE	
LZMA_Fmt	685	626	LZMA compressed data format	application/x-lzma	LZMA	adENCAPSULATION	
True_Audio_Fmt	686	627	True Audio format	audio/x-tta	TTA	adSOUND	
Keepass_Fmt	687	628	Keepass Password file		KDB, KDBX	adMISC	
RPM_Fmt	688	629	RPM Package Manager file	application/x-rpm	RPM	adENCAPSULATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Printer_Font_Metrics_Fmt	689	630	Adobe Printer Font Metrics format	application/x-font-printer-metric	PFM	adFONT	
Adobe_Font_Metrics_Fmt	690	631	Adobe Font Metrics ASCII format	application/x-font-adobe-metric	AFM	adFONT	afmsr
Printer_Font_ASCII_Fmt	691	632	Adobe Printer Font ASCII format	application/x-font-type1	PFA	adFONT	pfasr
Netware_Loadable_Module_Fmt	692	633	Netware Loadable Module format		NLM	adMISC	
TCPdump_pcap_Fmt	693	634	TCPdump packet stream capture savefile format	application/vnd.tcpdump.pcap	PCAP	adMISC	
Multiple_Master_Font_Fmt	694	635	Adobe Multiple master font format		MMM	adFONT	
TrueType_Font_Collection_Fmt	695	636	TrueType font collection format	application/x-font-ttf	TTC	adFONT	
Shapefile_Spatial_Index_Fmt	696	637	Shapefile binary spatial index format	application/x-shapefile	SBX, SBN	adGIS	
Java_Key_Store_Fmt	697	638	Java Key Store format	application/x-java-keystore	KS	adMISC	
Java_JCE_Key_Store_Fmt	698	639	Java JCE Key Store format	application/x-java-jce-keystore		adMISC	
Quark_Xpress_Intel_Fmt	699	640	QuarkXPress Intel format	application/vnd.quark.quarkxpress	QXB	adDESKTOPPUBLSH	
Windows_Imaging_Fmt	700	641	Microsoft Windows Imaging Format WIM		WIM	adENCAPSULATION	
VMware_Virtual_Disk_Fmt	701	642	VMware Virtual Disk Format 5.0	application/x-vmdk	VMDK	adMISC	
XPConnect_Typelib_Fmt	702	643	XPConnect Typelib Format		XPT	adMISC	
MS_DOS_Compression_Fmt	703	644	Microsoft MS-DOS installation compression (SZDD, KWAJ)	application/x-ms-compress	EX_	adENCAPSULATION	
DLS_Fmt	704	645	DLS Downloadable Sounds format		DLS	adSOUND	
MS_Windows_Registry_Fmt	705	646	Microsoft Windows Registry format			adMISC	
Microsoft_Help_2_Fmt	706	647	Microsoft Help 2.0 format	application/x-ms-reader	HXD, HXW, HXH	adENCAPSULATION	
Qt_Translation_Fmt	707	648	Qt binary translation file format		QM	adMISC	
PEM_SSL_Certificate_Fmt	708	649	PEM-encoded SSL certificate	application/pkix-cert	CRT, PEM, CER, KEY	adENCAPSULATION	
PostScript_Printer_Description_Fmt	709	650	Adobe PostScript Printer Description file	application/vnd.cups-ppd	PPD	adMISC	
Speedo_Font_Fmt	710	651	Speedo Font format		SPD	adFONT	
InstallShield_Cabinet_Fmt	711	652	InstallShield Cabinet Archive format		CAB, HDR	adENCAPSULATION	
InstallShield_Uninstall_Fmt	712	653	InstallShield Uninstall format		ISU	adENCAPSULATION	
MS_OEDBX_Folder_Fmt	713	654	Outlook Express DBX folder database format		DBX	adENCAPSULATION	
LabVIEW_Fmt	714	655	National Instruments LabVIEW file format		VI	adMISC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
SAP_Archive_SAR_Fmt	715	656	SAP compression archive SAR format		SAR	adENCAPSULATION	
Netscape_Address_Book_Fmt	716	657	Netscape Address Book format		NAB	adMISC	
Universal_3D_Fmt	717	658	Universal 3D file format		U3D	adVECTORGRAPHIC	
Open_Inventor_ASCII_Fmt	718	659	Open Inventor ASCII format		IV	adVECTORGRAPHIC	
Open_Inventor_Binary_Fmt	719	660	Open Inventor Binary format		IV	adVECTORGRAPHIC	
X_Window_Dump_Fmt	720	661	X Window Dump image	image/x-xwindowdump	XWD	adRASTERIMAGE	
Git_Packfile_Fmt	721	662	Git Packfile format		PACK	adWORDPROCESSOR	gitpacksr
Xara_Xar_Fmt	722	663	Xara X Xar image format	application/vnd.xara	XAR	adVECTORGRAPHIC	
Internet_Archive_ARC_Fmt	723	664	Internet Archive ARC format	application/x-ia-arc	ARC	adENCAPSULATION	
Applix_Builder_Fmt	724	665	Applix Builder format		AB	adMISC	
Applix_Bitmap_Fmt	725	666	Applix Bitmap image format		IM	adRASTERIMAGE	
PEM_RSA_Private_Key_Fmt	726	667	PEM-encoded RSA private key		PEM	adENCAPSULATION	
MIFF_Fmt	727	668	Magick Image File Format		MIF, MIFF	adRASTERIMAGE	
Subversion_Dump_Fmt	728	669	Subversion Dump format			adENCAPSULATION	
Virtual_Hard_Disk_Fmt	729	670	Microsoft Virtual Hard Disk format	application/x-vhd	VHD	adENCAPSULATION	
Direct_Access_Archive_Fmt	730	671	PowerISO Direct Access Archive format		DAA	adENCAPSULATION	
Debian_Binary_Fmt	731	672	Debian binary package format	application/x-debian-package	DEB	adENCAPSULATION	
XUL_Fastload_Fmt	732	673	Mozilla XUL Fastload format		MFL	adMISC	
Nastran_OP2_Fmt	733	674	Nastran OP2 format		OP2	adCAD	
Binary_Logging_Fmt	734	675	CAD Binary Logging Format		BLF	adCAD	
Measurement_Data_Fmt	735	676	CAD Measurement Data Format		MDF	adCAD	
Abaqus_ODB_Fmt	736	677	Abaqus ODB Format		ODB	adCAD	
Open_Diagnostic_Data_Exchange_Fmt	737	678	Vector Open Diagnostic Data Exchange format		ODX	adCAD	xmlsr
Vector_ASCII_Fmt	738	679	Vector CAD ASCII ASC format		ASC	adCAD	
LSDYNA_State_Database_Fmt	739	680	LS-DYNA State Database format			adCAD	
LSDYNA_Binary_Output_Fmt	740	681	LS-DYNA binary output (binout) format			adCAD	
MS_Power_BI_Fmt	741	682	Microsoft Power BI Desktop format		PBIX	adANALYTICS	pbixsr
Tableau_Workbook_Fmt	742	683	Tableau Workbook format		TWB	adANALYTICS	xmlsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Tableau_Packaged_Workbook_Fmt	743	684	Tableau Packaged Workbook format		TWBX	adANALYTICS	unzip
Tableau_Extract_Fmt	744	685	Tableau Extract format		TDE	adANALYTICS	
Tableau_Data_Source_Fmt	745	686	Tableau Data Source format		TDS	adANALYTICS	xmlsr
Tableau_Packaged_Data_Source_Fmt	746	687	Tableau Packaged Data Source format		TDSX	adANALYTICS	unzip
Tableau_Preferences_Fmt	747	688	Tableau Preferences format		TPS	adANALYTICS	xmlsr
Tableau_Map_Source_Fmt	748	689	Tableau Map Source format		TMS	adANALYTICS	xmlsr
ABAP_Fmt	749	690	ABAP Source Code[4]	text/x-abap	ABAP	adSOURCECODE	afsr
AMPL_Fmt	750	691	AMPL Source Code[4]		AMPL	adSOURCECODE	afsr
APL_Fmt	751	692	APL Source Code[4]		APL	adSOURCECODE	afsr
ASN1_Fmt	752	693	ASN.1 Source Code[4]		ASN	adSOURCECODE	afsr
ATS_Fmt	753	694	ATS Source Code[4]			adSOURCECODE	afsr
Agda_Fmt	754	695	Agda Source Code[4]	text/x-agda	AGDA	adSOURCECODE	afsr
Alloy_Fmt	755	696	Alloy Source Code[4]	text/x-alloy	ALS	adSOURCECODE	afsr
Apex_Fmt	756	697	Apex Source Code[4]		CLS	adSOURCECODE	afsr
Arduino_Fmt	757	698	Arduino Source Code[4]	text/x-arduino	INO	adSOURCECODE	afsr
AsciiDoc_Fmt	758	699	AsciiDoc Source Code[4]	text/x-asciidoc	ASC	adSOURCECODE	afsr
AspectJ_Fmt	759	700	AspectJ Source Code[4]	text/x-aspectj	AJ	adSOURCECODE	afsr
Awk_Fmt	760	701	Awk Source Code[4]	text/x-awk	AWK	adSOURCECODE	afsr
BlitzMax_Fmt	761	702	BlitzMax Source Code[4]	text/x-bmx	BMX	adSOURCECODE	afsr
Bluespec_Fmt	762	703	Bluespec Source Code[4]		BSV	adSOURCECODE	afsr
Brainfuck_Fmt	763	704	Brainfuck Source Code[4]	text/x-brainfuck	B, BF	adSOURCECODE	afsr
Brightscript_Fmt	764	705	Brightscript Source Code[4]		BRS	adSOURCECODE	afsr
CLIPS_Fmt	765	706	CLIPS Source Code[4]		CLP	adSOURCECODE	afsr
CMake_Fmt	766	707	CMake Source Code[4]	text/x-cmake	CMAKE	adSOURCECODE	afsr
COBOL_Fmt	767	708	COBOL Source Code[4]	text/x-cobol	CBL, CCP, COB, CPY	adSOURCECODE	afsr
CWeb_Fmt	768	709	CWeb Source Code[4]		W	adSOURCECODE	afsr
CartoCSS_Fmt	769	710	CartoCSS Source Code[4]		MSS	adSOURCECODE	afsr
Ceylon_Fmt	770	711	Ceylon Source Code[4]	text/x-ceylon	CEYLON	adSOURCECODE	afsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Chapel_Fmt	771	712	Chapel Source Code[4]		CHPL	adSOURCECODE	afsr
Clarion_Fmt	772	713	Clarion Source Code[4]		CLW	adSOURCECODE	afsr
Clean_Fmt	773	714	Clean Source Code[4]		DCL, ICL	adSOURCECODE	afsr
Component_Pascal_Fmt	774	715	Component Pascal Source Code[4]	text/x-component-pascal	CP	adSOURCECODE	afsr
Cool_Fmt	775	716	Cool Source Code[4]		CL	adSOURCECODE	afsr
Coq_Fmt	776	717	Coq Source Code[4]	text/x-coq	V	adSOURCECODE	afsr
Creole_Fmt	777	718	Creole Source Code[4]		CREOLE	adSOURCECODE	afsr
Crystal_Fmt	778	719	Crystal Source Code[4]		CR	adSOURCECODE	afsr
Csound_Fmt	779	720	Csound Source Code[4]		ORC	adSOURCECODE	afsr
Csound_Document_Fmt	780	721	Csound Document Source Code[4]		CSD	adSOURCECODE	afsr
Cuda_Fmt	781	722	Cuda Source Code[4]	text/x-cuda	CU	adSOURCECODE	afsr
D_Fmt	782	723	D Source Code[4]	text/x-d	DCL, ICL	adSOURCECODE	afsr
DIGITAL_Command_Language_Fmt	783	724	DIGITAL Command Language Source Code[4]		COM	adSOURCECODE	afsr
DTrace_Fmt	784	725	DTrace Source Code[4]		D	adSOURCECODE	afsr
Dart_Fmt	785	726	Dart Source Code[4]	text/x-dart	DART	adSOURCECODE	afsr
E_Fmt	786	727	E Source Code[4]		E	adSOURCECODE	afsr
ECL_Fmt	787	728	ECL Source Code[4]	application/x-ecl	ECL	adSOURCECODE	afsr
Elm_Fmt	788	729	Elm Source Code[4]	text/x-elm	ELM	adSOURCECODE	afsr
Emacs_Lisp_Fmt	789	730	Emacs Lisp Source Code[4]	text/x-emacs-lisp	EL	adSOURCECODE	afsr
EmberScript_Fmt	790	731	EmberScript Source Code[4]		EM	adSOURCECODE	afsr
Fantom_Fmt	791	732	Fantom Source Code[4]	application/x-fantom	FAN	adSOURCECODE	afsr
Forth_Fmt	792	733	Forth Source Code[4]	text/x-forth	FOR, FORTH	adSOURCECODE	afsr
FreeMarker_Fmt	793	734	FreeMarker Source Code[4]		FTL	adSOURCECODE	afsr
Frege_Fmt	794	735	Frege Source Code[4]		FR	adSOURCECODE	afsr
G_code_Fmt	795	736	G-code Source Code[4]		G	adSOURCECODE	afsr
GAMS_Fmt	796	737	GAMS Source Code[4]		GMS	adSOURCECODE	afsr
GAP_Fmt	797	738	GAP Source Code[4]			adSOURCECODE	afsr
GDScript_Fmt	798	739	GDScript Source Code[4]		GD	adSOURCECODE	afsr
GLSL_Fmt	799	740	GLSL Source Code[4]	text/x-glslsrc	GLSL	adSOURCECODE	afsr
Game_Maker_Language_Fmt	800	741	Game Maker Language Source		GML	adSOURCECODE	afsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			Code[4]				
Gnuplot_Fmt	801	742	Gnuplot Source Code[4]	text/x-gnuplot	GNU, GP	adSOURCECODE	afsr
Golo_Fmt	802	743	Golo Source Code[4]		GOLO	adSOURCECODE	afsr
Gosu_Fmt	803	744	Gosu Source Code[4]	text/x-gosu	GS	adSOURCECODE	afsr
Gradle_Fmt	804	745	Gradle Source Code[4]		GRADLE	adSOURCECODE	afsr
GraphQL_Fmt	805	746	GraphQL Source Code[4]		GRAPHQL	adSOURCECODE	afsr
Graphviz_DOT_Fmt	806	747	Graphviz (DOT) Source Code[4]		DOT	adSOURCECODE	afsr
HLSL_Fmt	807	748	HLSL Source Code[4]		HLSL	adSOURCECODE	afsr
Hack_Fmt	808	749	Hack Source Code[4]			adSOURCECODE	afsr
Haml_Fmt	809	750	Haml Source Code[4]	text/x-haml	HAML	adSOURCECODE	afsr
Handlebars_Fmt	810	751	Handlebars Source Code[4]		HBS	adSOURCECODE	afsr
Hy_Fmt	811	752	Hy Source Code[4]	text/x-hy	HY	adSOURCECODE	afsr
IDL_Fmt	812	753	IDL Source Code[4]	text/x-idl	PRO	adSOURCECODE	afsr
IGOR_Pro_Fmt	813	754	IGOR Pro Source Code[4]	text/ipf	IPF	adSOURCECODE	afsr
Idris_Fmt	814	755	Idris Source Code[4]	text/x-idris	IDR	adSOURCECODE	afsr
Inform_7_Fmt	815	756	Inform 7 Source Code[4]		I7X	adSOURCECODE	afsr
Ioke_Fmt	816	757	Ioke Source Code[4]	text/x-iokesrc	IK	adSOURCECODE	afsr
Isabelle_Fmt	817	758	Isabelle Source Code[4]	text/x-isabelle		adSOURCECODE	afsr
J_Fmt	818	759	J Source Code[4]	text/x-j	IJS	adSOURCECODE	afsr
JSONiq_Fmt	819	760	JSONiq Source Code[4]		JQ	adSOURCECODE	afsr
JSX_Fmt	820	761	JSX Source Code[4]		JSX	adSOURCECODE	afsr
Jasmin_Fmt	821	762	Jasmin Source Code[4]		J	adSOURCECODE	afsr
Jolie_Fmt	822	763	Jolie Source Code[4]			adSOURCECODE	afsr
Julia_Fmt	823	764	Julia Source Code[4]	text/x-julia	JL	adSOURCECODE	afsr
KiCad_Layout_Fmt	824	765	KiCad Layout Source Code[4]			adSOURCECODE	afsr
KiCad_Schematic_Fmt	825	766	KiCad Schematic Source Code[4]		SCH	adSOURCECODE	afsr
Kotlin_Fmt	826	767	Kotlin Source Code[4]		KT	adSOURCECODE	afsr
LFE_Fmt	827	768	LFE Source Code[4]	text/x-kotlin	LFE	adSOURCECODE	afsr
LOLCODE_Fmt	828	769	LOLCODE Source Code[4]		LOL	adSOURCECODE	afsr
Lasso_Fmt	829	770	Lasso Source Code[4]	text/x-lasso	LAS, LASSO	adSOURCECODE	afsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Limbo_Fmt	830	771	Limbo Source Code[4]	text/limbo		adSOURCECODE	afsr
LiveScript_Fmt	831	772	LiveScript Source Code[4]	text/x-livescript	LS	adSOURCECODE	afsr
M_Fmt	832	773	M Source Code[4]		M	adSOURCECODE	afsr
MAXScript_Fmt	833	774	MAXScript Source Code[4]		MS	adSOURCECODE	afsr
Markdown_Fmt	834	775	Markdown Source Code[4]		MD	adSOURCECODE	afsr
Matlab_Fmt	835	463	Matlab Source Code[4]	text/x-matlab	M	adSOURCECODE	afsr
Max_Code_Fmt	836	776	Max Source Code[4]		MXT	adSOURCECODE	afsr
Mercury_Fmt	837	777	Mercury Source Code[4]			adSOURCECODE	afsr
Modelica_Fmt	838	778	Modelica Source Code[4]	text/x-modelica	MO	adSOURCECODE	afsr
Modula_2_Fmt	839	779	Modula-2 Source Code[4]	text/x-modula2	MOD	adSOURCECODE	afsr
Monkey_Fmt	840	780	Monkey Source Code[4]	text/x-monkey	MONKEY	adSOURCECODE	afsr
Moocode_Fmt	841	781	Moocode Source Code[4]	text/x-moocode	MOO	adSOURCECODE	afsr
NL_Fmt	842	782	NL Source Code[4]		NL	adSOURCECODE	afsr
NSIS_Fmt	843	783	NSIS Source Code[4]	text/x-nsis	NSI	adSOURCECODE	afsr
NetLogo_Fmt	844	784	NetLogo Source Code[4]		NLOGO	adSOURCECODE	afsr
NewLisp_Fmt	845	785	NewLisp Source Code[4]	text/x-newlisp	NL	adSOURCECODE	afsr
Nginx_Fmt	846	786	Nginx Source Code[4]	text/x-nginx-conf	VHOST	adSOURCECODE	afsr
Nix_Fmt	847	787	Nix Source Code[4]	text/x-nix	NIX	adSOURCECODE	afsr
Nu_Fmt	848	788	Nu Source Code[4]		NU	adSOURCECODE	afsr
OCaml_Fmt	849	789	OCaml Source Code[4]	text/x-ocaml		adSOURCECODE	afsr
OpenCL_Fmt	850	790	OpenCL Source Code[4]		CL	adSOURCECODE	afsr
OpenEdge_ABL_Fmt	851	791	OpenEdge ABL Source Code[4]	text/x-openedge		adSOURCECODE	afsr
OpenSCAD_Fmt	852	792	OpenSCAD Source Code[4]		SCAD	adSOURCECODE	afsr
Ox_Fmt	853	793	Ox Source Code[4]		OX	adSOURCECODE	afsr
Oxygene_Fmt	854	794	Oxygene Source Code[4]		OXYGENE	adSOURCECODE	afsr
Oz_Fmt	855	795	Oz Source Code[4]		OZ	adSOURCECODE	afsr
PAWN_Fmt	856	796	PAWN Source Code[4]	text/x-pawn	PWN	adSOURCECODE	afsr
PLpgSQL_Fmt	857	797	PLpgSQL Source Code[4]	text/x-plpgsql	PLSQL	adSOURCECODE	afsr
Pan_Fmt	858	798	Pan Source Code[4]		PAN	adSOURCECODE	afsr
Parrot_Assembly_Fmt	859	799	Parrot Assembly Source Code[4]		PASM	adSOURCECODE	afsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
PicoLisp_Fmt	860	800	PicoLisp Source Code[4]			adSOURCECODE	afsr
Pike_Fmt	861	801	Pike Source Code[4]	text/x-pike	PIKE	adSOURCECODE	afsr
Pony_Fmt	862	802	Pony Source Code[4]		PONY	adSOURCECODE	afsr
Processing_Fmt	863	803	Processing Source Code[4]		PDE	adSOURCECODE	afsr
PureBasic_Fmt	864	804	PureBasic Source Code[4]		PB	adSOURCECODE	afsr
QMake_Fmt	865	805	QMake File[4]			adSOURCECODE	afsr
RAML_Fmt	866	806	RAML Source Code[4]		RAML	adSOURCECODE	afsr
RDoc_Fmt	867	807	RDoc Source Code[4]		RDOC	adSOURCECODE	afsr
REXX_Fmt	868	808	REXX Source Code[4]	text/x-rexx	REXX	adSOURCECODE	afsr
Racket_Fmt	869	809	Racket Source Code[4]	text/x-racket		adSOURCECODE	afsr
Ragel_Fmt	870	810	Ragel Source Code[4]			adSOURCECODE	afsr
Rascal_Fmt	871	811	Rascal Source Code[4]		RSC	adSOURCECODE	afsr
Rebol_Fmt	872	812	Rebol Source Code[4]	text/x-rebol	REB, REBOL	adSOURCECODE	afsr
Red_Fmt	873	813	Red Source Code[4]	text/x-red	RED	adSOURCECODE	afsr
RenPy_Fmt	874	814	Ren'Py Source Code[4]		RPY	adSOURCECODE	afsr
RenderScript_Fmt	875	815	RenderScript Source Code[4]		RS	adSOURCECODE	afsr
Ring_Fmt	876	816	Ring Source Code[4]		RING	adSOURCECODE	afsr
RobotFramework_Fmt	877	817	RobotFramework Source Code[4]	text/x-robotframework	ROBOT	adSOURCECODE	afsr
SAS_Fmt	878	818	SAS Source Code[4]		SAS	adSOURCECODE	afsr
SPARQL_Fmt	879	819	SPARQL format[4]	application/sparql-query		adSOURCECODE	afsr
SQL_Fmt	880	820	SQL format[4]	text/x-sql		adSOURCECODE	afsr
SQLPL_Fmt	881	821	SQLPL Source Code[4]			adSOURCECODE	afsr
SaltStack_Fmt	882	822	SaltStack Source Code[4]		SLS	adSOURCECODE	afsr
Scheme_Fmt	883	823	Scheme Source Code[4]	text/x-scheme		adSOURCECODE	afsr
Scilab_Fmt	884	824	Scilab Source Code[4]	text/scilab	SCI	adSOURCECODE	afsr
Squirrel_Fmt	885	825	Squirrel Source Code[4]		NUT	adSOURCECODE	afsr
Stan_Fmt	886	826	Stan Source Code[4]		STAN	adSOURCECODE	afsr
Stata_Fmt	887	827	Stata Source Code[4]			adSOURCECODE	afsr
Stylus_Fmt	888	828	Stylus Source Code[4]		STYL	adSOURCECODE	afsr
SuperCollider_Fmt	889	829	SuperCollider Source Code[4]	text/supercollider	SC	adSOURCECODE	afsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
SystemVerilog_Fmt	890	830	SystemVerilog Source Code[4]	text/x-systemverilog	SV	adSOURCECODE	afsr
TXL_Fmt	891	831	TXL Source Code[4]		TXL	adSOURCECODE	afsr
Turing_Fmt	892	832	Turing Source Code[4]		T	adSOURCECODE	afsr
Turtle_Fmt	893	833	Turtle Source Code[4]	text/turtle	TTL	adSOURCECODE	afsr
UrWeb_Fmt	894	834	UrWeb Source Code[4]		UR, URS	adSOURCECODE	afsr
Vim_script_Fmt	895	835	Vim script File[4]	text/x-vim	VIM	adSOURCECODE	afsr
Visual_Basic_Fmt	896	836	Visual Basic Source Code[4]	text/x-vbasic	VB	adSOURCECODE	afsr
WebAssembly_Fmt	897	837	WebAssembly Source Code[4]		WAT	adSOURCECODE	afsr
WebIDL_Fmt	898	838	WebIDL Source Code[4]		WEBIDL	adSOURCECODE	afsr
X10_Fmt	899	839	X10 Source Code[4]	text/x-x10	X10	adSOURCECODE	afsr
XQuery_Fmt	900	840	XQuery Source Code[4]	text/xquery	XQM	adSOURCECODE	afsr
Xojo_Fmt	901	841	Xojo Source Code[4]			adSOURCECODE	afsr
Xtend_Fmt	902	842	Xtend Source Code[4]	text/x-xtend	XTEND	adSOURCECODE	afsr
YANG_Fmt	903	843	YANG Source Code[4]		YANG	adSOURCECODE	afsr
Zephir_Fmt	904	844	Zephir Source Code[4]		ZEP	adSOURCECODE	afsr
eC_Fmt	905	845	eC Source Code[4]	text/x-ecsrc	EC	adSOURCECODE	afsr
reStructuredText_Fmt	906	846	reStructuredText Source Code[4]	text/x-rst		adSOURCECODE	afsr
xBase_Fmt	907	847	xBase Source Code[4]			adSOURCECODE	afsr
Windows_Installer_Fmt	908	848	MSI Windows Installer format	application/x-ole-storage	MSI	adENCAPSULATION	olesr
Autodesk_3ds_Max_Fmt	909	849	Autodesk 3ds Max format		MAX	adCAD	olesr
PhotoDraw_Mix_Fmt	910	850	PhotoDraw MIX image	image/vnd.mix	MIX	adRASTERIMAGE	olesr
Softimage_SCN_Fmt	911	851	Softimage Scene SCN format		SCN	adCAD	
Parasolid_XT_Fmt	912	852	Parasolid ascii XT format		X_T	adCAD	
Parasolid_XB_Fmt	913	853	Parasolid binary XB format		X_B	adCAD	
IGES_Fmt	914	854	Initial Graphics Exchange Specification format	model/iges	IGS	adCAD	
ACE_Archive_Fmt	915	855	ACE archive format	application/x-ace-compressed	ACE	adENCAPSULATION	
Grasshopper_GHX_Fmt	916	856	Grasshopper GHX format		GHX	adCAD	xmlsr
MS_FrontPage_Macro_Fmt	917	857	Microsoft FrontPage macro file format		FPM	adWORDPROCESSOR	
MS_AtWork_Fax_Fmt	918	858	Microsoft AtWork Fax format		AWD	adFAXFORMAT	olesr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MS_Image_Composer_Fmt	919	859	Microsoft Image Composer format		MIC	adRASTERIMAGE	
MS_Visual_InterDev_Fmt	920	860	Microsoft Visual InterDev web project items file		WDM	adSWDEV	
Macromedia_Flash_FLA_OLE_Fmt	921	861	Macromedia Flash FLA Project File OLE format		FLA	adWORDPROCESSOR	
Corel_Draw_X4_Fmt	922	862	CorelDRAW version X4 onwards	application/x-vnd.corel.zcf.draw.document+zip	CDRX	adVECTORGRAPHIC	
Ogg_Daala_Fmt	923	863	Ogg Daala video format	video/daala	OGV	adMOVIE	
Ogg_BBC_Dirac_Fmt	924	864	Ogg BBC Dirac video format	video/x-dirac	OGV	adMOVIE	
PKCS_7_Fmt	925	865	PKCS #7 cryptographic format	application/pkcs7-signature	P7S	adENCAPSULATION	pkcs7sr
Time_Stamped_Data_Fmt	926	866	Time-stamped data format	application/timestamped-data	TSD	adENCAPSULATION	
Sereal_Fmt	927	867	Sereal data serialization format	application/sereal	SRL	adMISC	
Associated_Signature_Simple_Fmt	928	868	Associated Signature Container Simple format	application/vnd.etsi.asic-s+zip	ASICS	adENCAPSULATION	
Associated_Signature_Extended_Fmt	929	869	Associated Signature Container Extended format	application/vnd.etsi.asic-e+zip	ASICE	adENCAPSULATION	
iBooks_Fmt	930	870	Apple iBooks format	application/x-ibooks+zip	IBOOKS	adWORDPROCESSOR	epubsr
PDF_Forms_Data_Fmt	931	871	PDF Forms Data Format	application/vnd.fdf	FDF	adWORDPROCESSOR	
PDF_XML_Forms_Data_Fmt	932	872	PDF XML Forms Data Format	application/vnd.adobe.xfdf	XFDF	adWORDPROCESSOR	xmlsr
AxCrypt_Fmt	933	873	AxCrypt encrypted document	application/x-axcrypt	AXX	adENCAPSULATION	
Unix_Archive_Fmt	934	874	Unix Archive ar format	application/x-archive	AR	adENCAPSULATION	
Berkeley_Btree_Database_Fmt	935	875	Berkeley DB btree database format	application/x-berkeley-db	DB	adDATABASE	
Berkeley_Hash_Database_Fmt	936	876	Berkeley DB hash database format	application/x-berkeley-db	DB	adDATABASE	
Berkeley_Log_Database_Fmt	937	877	Berkeley DB log database format	application/x-berkeley-db		adDATABASE	
Berkeley_Queue_Database_Fmt	938	878	Berkeley DB queue database format	application/x-berkeley-db		adDATABASE	
BitTorrent_Fmt	939	879	BitTorrent file format	application/x-bittorrent	TORRENT	adMISC	
Chrome_Extension_Fmt	940	880	Google Chrome Extension format	application/x-chrome-package	CRX	adENCAPSULATION	
Dalvik_Executable_Fmt	941	881	Dalvik Executable dex format	application/x-dex	DEX	adEXECUTABLE	
Foxmail_Fmt	942	882	Foxmail email format	application/x-foxmail	BOX	adWORDPROCESSOR	
GRIB_Fmt	943	883	General Regularly-distributed Information in Binary form GRIB format	application/x-grib	GRB, GRIB2	adSCIENTIFIC	
Zstandard_Fmt	944	884	Zstandard compression format	application/zstd	ZSTD	adENCAPSULATION	zstdsr
LZ4_Fmt	945	885	LZ4 compressed file	application/x-lz4	LZ4	adENCAPSULATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MS_Money_Fmt	946	886	Microsoft Money format	application/x-msmoney	MNY	adSPREADSHEET	
NetCDF_Fmt	947	887	Network Common Data Form NetCDF format	application/x-netcdf	NC	adMISC	
SAS6_Data_Fmt	948	888	SAS 6 Data storage format	application/x-sas-data-v6	SD2	adDATABASE	
SAS_Transport_Fmt	949	889	SAS Transport File XPORT format	application/x-sas-xport	XPT, XPORT	adDATABASE	
Snappy_Framed_Fmt	950	890	Snappy Framed compression format	application/x-snappy-framed	SZ	adENCAPSULATION	
Stata_Data_Fmt	951	891	Stata Data Format	application/x-stata-dta	DTA	adDATABASE	
SPSS_SAV_Fmt	952	892	SPSS Statistics Data File Format		SAV	adDATABASE	
Zoo_Archive_Fmt	953	893	Zoo Compressed Archive Format	application/x-zoo	ZOO	adENCAPSULATION	
CDX_Fmt	954	894	ChemDraw CDX format	chemical/x-cdx	CDX	adSCIENTIFIC	
CDXML_Fmt	955	895	ChemDraw CDXML format	application/vnd.chemdraw+xml	CDXML	adSCIENTIFIC	xmlsr
BPG_Fmt	956	896	Better Portable Graphics BPG format	image/x-bpg	BPG	adRASTERIMAGE	
Apple_Icon_Fmt	957	897	Apple Icon image format	image/icns	ICNS	adRASTERIMAGE	
NITF_Fmt	958	898	National Imagery Transmission Format NITF image	image/nitf	NTF, NITF	adRASTERIMAGE	
ERDAS_Imagine_Fmt	959	899	ERDAS Imagine image format	application/x-erdas-hfa	HFA, RRD, AUX	adRASTERIMAGE	
MS_Office_Temporary_Owner_Fmt	960	900	Microsoft Office temporary owner file	application/x-ms-owner		adMISC	
EAC3_Audio_Fmt	961	901	Enhanced-AC3 (EAC3) Audio File format	audio/eac3	AC3	adSOUND	
COFF_Relocatable_Fmt	962	902	Common Object File Format (COFF) relocatable object	application/x-object-file	O	adOBJECTMODULE	
COFF_Executable_Fmt	963	903	Common Object File Format (COFF) executable	application/x-executable-file		adEXECUTABLE	
COFF_Dynamic_Lib_Fmt	964	904	Common Object File Format (COFF) dynamic library	application/x-library-file		adLIBRARY	
ELF_Core_Fmt	965	905	ELF Core file	application/x-coredump		adMISC	
Purify_Fmt	966	906	Rational Purify data file		PFY	adMISC	
Kryptel_Fmt	967	907	Kryptel encrypted file		EDC	adENCAPSULATION	
Windows_Core_Dump_Fmt	968	908	Windows heap or mini core dump file	application/x-dmp	DMP	adMISC	
Qt_Prerendered_Font_Fmt	969	909	Qt Prerendered Font format		QPF2	adFONT	
AIX_Relocatable_Fmt	970	910	AIX/RISC COFF relocatable object	application/x-object-file		adOBJECTMODULE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
AIX_Executable_Fmt	971	911	AIX/RISC COFF executable	application/x-executable-file		adEXECUTABLE	
AIX_Dynamic_Lib_Fmt	972	912	AIX/RISC COFF dynamic library	application/x-library-file	A	adLIBRARY	
HPUX_Relocatable_Fmt	973	913	HPUX/PA-RISC COFF relocatable object	application/x-object-file		adOBJECTMODULE	
HPUX_Executable_Fmt	974	914	HPUX/PA-RISC COFF executable	application/x-executable-file		adEXECUTABLE	
HPUX_Dynamic_Lib_Fmt	975	915	HPUX/PA-RISC COFF dynamic library	application/x-library-file	SL	adLIBRARY	
XML_EBCDIC_Fmt	976	916	EBCDIC-encoded XML file	application/xml	XML	adWORDPROCESSOR	
MPEG_JVT_H264_Fmt	977	917	MPEG JVT-NAL sequence H264 video	video/h264	264	adMOVIE	
Material_Exchange_Fmt	978	918	Material Exchange Format audio-video container format	application/mxf	MXF	adMOVIE	
MS_Agent_Character_Fmt	979	919	Microsoft Agent Character file		ACS	adMOVIE	
Quicken_Fmt	980	920	Quicken data file		QDF	adMISC	
MS_Outlook_Address_Fmt	981	921	Microsoft Outlook address file		WAB	adMISC	
MS_Answer_Wizard_Fmt	982	922	Microsoft Answer Wizard file			adMISC	
ADX_Fmt	983	923	ADX audio file		ADX	adSOUND	
System_Deployment_Image_Fmt	984	924	Microsoft System Deployment Image SDI format		SDI	adMISC	
Free_Lossless_Image_Fmt	985	925	Free Lossless Image Format (FLIF)	image/flif	FLIF	adRASTERIMAGE	
DPX_Fmt	986	926	Digital Picture Exchange (DPX) image format	image/dpx	DPX	adRASTERIMAGE	
Avro_Fmt	987	927	Apache Avro binary format		AVRO	adMISC	avrosr
InstallShield_Archive_Fmt	988	928	InstallShield archive (early versions) format		EX_	adENCAPSULATION	
Mac_Executable_Fmt	989	929	Mac OS-X (Mach-O) executable format			adEXECUTABLE	
GDSII_Fmt	990	930	GDSII data format		GDS, GDS2	adCAD	gdsiisr
ActiveMime_Fmt	991	931	Microsoft ActiveMime (mso) documents	application/x-mso	MSO	adMISC	
SmartCharts_Fmt	992	932	BizInt SmartCharts data format		CHP, CHRR	adMISC	
Webex_ARF_Fmt	993	933	Webex advanced network ARF recordings		ARF	adMOVIE	
Webex_WRF_Fmt	994	934	Webex local WRF recordings		WRF	adMOVIE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
PGP_NetShare_Fmt	995	935	Symantec PGP NetShare encrypted file			adENCAPSULATION	
Ability_WP_OLE_Fmt	996	936	Ability Write later versions format		AWW	adWORDPROCESSOR	olesr
Ability_SS_OLE_Fmt	997	937	Ability Spreadsheet later versions format		AWS	adSPREADSHEET	
InDesign_IDML_Fmt	998	938	Adobe InDesign IDML format	application/vnd.adobe.indesign-idml-package	IDML	adDESKTOPPUBLSH	
Executable_JAR_Fmt	999	939	Executable Java Archive (jar) file	application/java-archive	JAR	adENCAPSULATION	unzip
IDOL_IDX_Fmt	1000	940	IDOL Server IDX file		IDX	adENCAPSULATION	
Android_Package_Kit_Fmt	1001	941	Android Package Kit (APK) format	application/vnd.android.package-archive	APK	adEXECUTABLE	
Android_Binary_XML_Fmt	1002	942	Android Binary XML (compressed by aapt) format	application/xml	XML	adWORDPROCESSOR	
Java_WAR_Fmt	1003	943	Java WAR file format		WAR	adENCAPSULATION	
Java_EAR_Fmt	1004	944	Java EAR file format		EAR	adENCAPSULATION	
Atom_Syndication_Fmt	1005	945	Atom Syndication Format	application/atom+xml	ATOM	adWORDPROCESSOR	xmlsr
RSS_Fmt	1006	946	RSS syndication XML format	application/rss+xml	RSS	adWORDPROCESSOR	xmlsr
SMIL_Fmt	1007	947	Synchonized Multimedia Integration Language (SMIL) XML format	application/smil+xml	SMIL	adWORDPROCESSOR	xmlsr
XSLT_Fmt	1008	948	Extensible Stylesheet Language Transformations (XSLT) format	application/xslt+xml	XSL, XSLT	adWORDPROCESSOR	xmlsr
XML_Shareable_Playlist_Fmt	1009	949	XML Shareable Playlist Format (XSPF)	application/xspf+xml	XSPF	adWORDPROCESSOR	xmlsr
FictionBook_Fmt	1010	950	FictionBook e-book XML format	application/x-fictionbook+xml	FB2	adWORDPROCESSOR	xmlsr
Adobe_Premiere_Project_Fmt	1011	951	Adobe Premiere project format	image/vnd.adobe.premiere	PPJ	adMISC	
RDF_XML_Fmt	1012	952	RDF/XML format	application/rdf+xml	RDF	adWORDPROCESSOR	xmlsr
Really_Simple_Discovery_Fmt	1013	953	Really Simple Discovery (RSD) XML format	application/rsd+xml	RSD	adWORDPROCESSOR	xmlsr
SBML_Fmt	1014	954	Systems Biology Markul Language (SBML) XML format	application/sbml+xml	SBML	adWORDPROCESSOR	xmlsr
SRU_Fmt	1015	955	Search/Retrieve via URL (SRU) XML format	application/sru+xml	SRU	adWORDPROCESSOR	xmlsr
SSML_Fmt	1016	956	Speech Synthesis Markup Language (SSML) XML format	application/ssml+xml	SSML	adWORDPROCESSOR	xmlsr
PLS_Fmt	1017	957	Pronunciation Lexicon Specification (PLS) XML format	application/pls+xml	PLS	adWORDPROCESSOR	xmlsr
TEI_Fmt	1018	958	Text Encoding Initiative (TEI) XML	application/tei+xml	TEI	adWORDPROCESSOR	xmlsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			format				
METS_Fmt	1019	959	Metadata Encoding and Transmission Standard (METS) XML format	application/mets+xml	METS	adWORDPROCESSOR	xmlsr
MODS_Fmt	1020	960	Metadata Object Description Schema (MODS) XML format	application/mods+xml	MODS	adWORDPROCESSOR	xmlsr
Metalink_Fmt	1021	961	Metalink XML format	application/metalink4+xml	METALINK	adWORDPROCESSOR	xmlsr
Open_eBook_Fmt	1022	962	Open eBook (OEBPS) XML format	application/oebps-package+xml	OPF	adWORDPROCESSOR	xmlsr
SRGS_Fmt	1023	963	Speech Recognition Grammar Specification (SRGS) XML format	application/srgs+xml	SRGS	adWORDPROCESSOR	xmlsr
SPARQL_Results_Fmt	1024	964	SPARQL Query Results XML format	application/sparql-results+xml	SRX	adWORDPROCESSOR	xmlsr
Adobe_XML_Data_Package_Fmt	1025	965	Adobe XML Data Package format	application/vnd.adobe.xdp+xml	XDP	adWORDPROCESSOR	xmlsr
ESzigno_Fmt	1026	966	e-Szigno signed xml document	application/vnd.eszigno3+xml	ES3	adWORDPROCESSOR	xmlsr
Mozilla_XUL_Fmt	1027	967	Mozilla XML User Interface Language (XUL) XML format	application/vnd.mozilla.xul+xml	XUL	adWORDPROCESSOR	xmlsr
SyncML_Fmt	1028	968	Synchronization Markup Language (SyncML) XML format	application/vnd.syncml+xml	XML	adWORDPROCESSOR	xmlsr
VoiceXML_Fmt	1029	969	VoiceXML (VXML) XML format	application/voicexml+xml	VXML	adWORDPROCESSOR	xmlsr
TI_Target_Configuration_Fmt	1030	970	Texas Instruments CCXML target configuration XML format		CCXML	adWORDPROCESSOR	
LZFSE_Fmt	1031	971	Lempel-Ziv Finite State Entropy (LZFSE) compression format		LZFSE	adENCAPSULATION	
Kindle_eBook_Fmt	1032	972	Amazon Kindle or Mobipocket eBook format	application/vnd.amazon.ebook	AZW, PRC	adWORDPROCESSOR	
Oasis_Stream_Fmt	1033	973	Open Artwork System Interchange Standard (OASIS) format		OAS	adMISC	
Amazon_KFX_Fmt	1034	974	Amazon KFX eBook format		KFX	adWORDPROCESSOR	
KTX_Fmt	1035	975	KTX image format	image/ktx	KTX	adRASTERIMAGE	
GMSH_Mesh_Fmt	1036	976	GMSH Mesh polygon format	model/mesh	MSH	adCAD	
Collada_DAE_Fmt	1037	977	Collada Digital Asset Exchange (DAE) format	model/vnd.collada+xml	DAE	adCAD	xmlsr
YIN_Fmt	1038	978	YIN XML format	application/yin+xml	YIN	adWORDPROCESSOR	xmlsr
MPEG_Playlist_Fmt	1039	979	MPEG audio playlist format	audio/mpegurl	M3U	adSOUND	
Windows_Audio_Playlist_Fmt	1040	980	Windows Audio playlist format	audio/x-ms-wax	WAX	adSOUND	xmlsr
DTS_Audio_Fmt	1041	981	DTS Coherent Acoustics audio	audio/vnd.dts	DTS	adSOUND	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			format				
Chemical_Markup_Language_Fmt	1042	982	Chemical Markup Language (CML) XML format	chemical/x-cml	CML	adWORDPROCESSOR	xmlsr
CrystalMaker_Fmt	1043	983	CrystalMaker chemical format	chemical/x-cmdf	CMDF	adSCIENTIFIC	
VTK_XML_Fmt	1044	984	Visualization Toolkit VTK XML format	model/vnd.vtu	VTU	adVECTORGRAPHIC	xmlsr
IPFIX_Fmt	1045	985	IP Flow Information Export (IPFIX) format	application/ipfix	IPFIX	adMISC	
Portable_Font_Resource_Fmt	1046	986	Portable Font Resource font format	application/font-tdpfr	PFR	adFONT	
MARC_Fmt	1047	987	Machine-Readable Cataloging (MARC21) format	application/marc	MARC	adDATABASE	
MARC_XML_Fmt	1048	988	Machine-Readable Cataloging (MARC) XML format	application/marcxml+xml	XML	adWORDPROCESSOR	xmlsr
XAR_Fmt	1049	989	Extensible Archive (XAR) format			adENCAPSULATION	
Symbian_Installer_Fmt	1050	990	Symbian installer format	application/vnd.symbian.install	SIS	adENCAPSULATION	
SO_Drawing_XML_Fmt	1051	316	OpenDocument format (OpenOffice 1/StarOffice 6.7) Drawing XML	application/vnd.sun.xml.draw	SXD	adVECTORGRAPHIC	kpodfrdr
SO_Text_Global_XML_Fmt	1052	991	OpenDocument format (OpenOffice 1/StarOffice 6.7) Writer Master document XML	application/vnd.sun.xml.writer.global	SXG	adWORDPROCESSOR	
ODF_Chart_Fmt	1053	992	ODF Chart	application/vnd.oasis.opendocument.chart	ODC	adVECTORGRAPHIC	
ODF_Database_Fmt	1054	993	ODF Database	application/vnd.sun.xml.base	ODB	adDATABASE	
ODF_Image_Fmt	1055	994	ODF Image	application/vnd.oasis.opendocument.image	ODI	adRASTERIMAGE	
ODF_Text_Master_Fmt	1056	995	ODF Text Master	application/vnd.oasis.opendocument.text-master	ODM	adWORDPROCESSOR	odfwpsr
ODF_Text_Web_Fmt	1057	996	ODF Text Web	application/vnd.oasis.opendocument.text-web	OTH	adWORDPROCESSOR	odfwpsr
ODF_Chart_Template_Fmt	1058	997	ODF Chart Template	application/vnd.oasis.opendocument.chart-template	OTC	adVECTORGRAPHIC	
ODF_Formula_Template_Fmt	1059	998	ODF Formula Template	application/vnd.oasis.opendocument.formula-template	OTF	adWORDPROCESSOR	unzip
ODF_Drawing_Template_Fmt	1060	316	ODF Drawing/Graphics Template	application/vnd.oasis.opendocument.graphics-template	OTG	adVECTORGRAPHIC	kpodfrdr
ODF_Image_Template_Fmt	1061	999	ODF Image Template	application/vnd.oasis.opendocument.image-template	OTI	adRASTERIMAGE	
ODF_Presentation_Template_Fmt	1062	316	ODF Presentation Template	application/vnd.oasis.opendocument.presentation-template	OTP	adPRESENTATION	kpodfrdr
ODF_Spreadsheet_Template_Fmt	1063	315	ODF Spreadsheet Template	application/vnd.oasis.opendocument.spreadsheet-template	OTS	adSPREADSHEET	odfsssr
ODF_Text_Template_Fmt	1064	314	ODF Text Template	application/vnd.oasis.opendocument.text-template	OTT	adWORDPROCESSOR	odfwpsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
ODF_Chart_XML_Fmt	1065	1000	ODF Chart flat XML format	application/vnd.oasis.opendocument.chart.xml	FODC	adVECTORGRAPHIC	
ODF_Drawing_XML_Fmt	1066	1001	ODF Drawing/Graphics flat XML format	application/vnd.oasis.opendocument.formula.xml	FODG	adWORDPROCESSOR	
ODF_Formula_XML_Fmt	1067	1002	ODF Formula flat XML format	application/vnd.oasis.opendocument.graphics.xml	FODF	adVECTORGRAPHIC	
ODF_Image_XML_Fmt	1068	1003	ODF Image flat XML format	application/vnd.oasis.opendocument.image.xml	FODI	adRASTERIMAGE	
ODF_Presentation_XML_Fmt	1069	1004	ODF Presentation flat XML format	application/vnd.oasis.opendocument.presentation.xml	FODP	adPRESENTATION	
ODF_Spreadsheet_XML_Fmt	1070	1005	ODF Spreadsheet flat XML format	application/vnd.oasis.opendocument.spreadsheet.xml	FODS	adSPREADSHEET	
ODF_Text_XML_Fmt	1071	1006	ODF Text flat XML format	application/vnd.oasis.opendocument.text.xml	FODT	adWORDPROCESSOR	
ODF_Extension_Fmt	1072	1007	ODF Extension format	application/vnd.openofficeorg.extension	OXT	adMISC	
StarView_Metafile_Fmt	1073	1008	OpenOffice StarView MetaFile format	image/x-svm	SVM	adRASTERIMAGE	
BBeB_LRF_eBook_Fmt	1074	1009	Broad Band eBook (BBeB) in LRF format	application/x-ext-lrf	LRF	adWORDPROCESSOR	
GPG_Trust_DB_Fmt	1075	1010	GPG trust database format		GPG	adMISC	
VICE_Emulator_Fmt	1076	1011	VICE (Versatile Commodore Emulator) format		VSF	adMISC	
Portable_Game_Notation_Fmt	1077	1012	Portable Game Notation chess format	application/vnd.chess-pgn	PGN	adWORDPROCESSOR	
Doom_WAD_Fmt	1078	1013	Doom IWAD/PWAD format	application/x-doom	WAD	adMISC	
Device_Tree_Blob_Fmt	1079	1014	Linux Device Tree Blob format		DTB	adMISC	
BDF_Font_Fmt	1080	1015	Glyph Bitmap Distribution Format	application/x-font-bdf	BDF	adFONT	
PC_Screen_Font_Fmt	1081	1016	PC Screen Font format	application/x-font-psf	PSF	adFONT	
JNLP_Fmt	1082	1017	Java Network Launching Protocol	application/x-java-jnlp-file	JNLP	adWORDPROCESSOR	xmlsr
XAML_Browser_Application_Fmt	1083	1018	XAML Browser Application (XBAP) format	application/x-ms-xbap	XBAP	adWORDPROCESSOR	xmlsr
MS_Binder_Fmt	1084	1019	Microsoft Office Binder format	application/x-msbinder	OBP	adENCAPSULATION	olesr
XAP_Fmt	1085	1020	Microsoft Silverlight application (XAP) format	application/x-silverlight-app	XAP	adENCAPSULATION	
StuffIt_X_Fmt	1086	1021	StuffIt X (SITX) archive format	application/x-stuffitx	SITX	adENCAPSULATION	
FIG_Fmt	1087	1022	Facility for Interactive Generation of figures (FIG) image format	application/x-xfig	FIG	adVECTORGRAPHIC	
XPInstall_Fmt	1088	1023	XPInstall Cross-Platform Installer Module (XPI) format	application/x-xpinstall	XPI	adENCAPSULATION	
XDF_Fmt	1089	1024	Extensible Data Format (XDF) XML		XDF	adWORDPROCESSOR	xmlsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			format				
MXML_Fmt	1090	1025	MXML UI markup language XML format		MXML	adWORDPROCESSOR	xmlsr
MusicXML_Fmt	1091	1026	MusicXML format	application/vnd.recordare.musicxml	MXL	adENCAPSULATION	xmlsr
Finale_Fmt	1092	1027	Finale audio format		MUS	adSOUND	
Spotfire_DXP_Fmt	1093	1028	TIBCO Spotfire DXP data format	application/vnd.spotfire.dxp	DXP	adANALYTICS	
MS_Office_Theme_2007_Fmt	1094	1029	Microsoft Office theme format	application/vnd.ms-officetheme	THMX	adMISC	
Adobe_AIR_Installer_Fmt	1095	1030	Adobe AIR application installer package	application/vnd.adobe.air-application-installer-package+zip	AIR	adENCAPSULATION	
Flex_Project_Fmt	1096	1031	Adobe Flash Flex project file format	application/vnd.adobe.fxp	FXP	adENCAPSULATION	
FoxPro_Fmt	1097	1032	FoxPro compiled source format		FXP	adLIBRARY	
VST_Preset_Fmt	1098	1033	Virtual Studio Technology (VST) preset format		FXP	adSOUND	
Mischief_Image_Fmt	1099	1034	Mischief vector graphics image format		ART	adVECTORGRAPHIC	
FreeArc_Fmt	1100	1035	FreeArc archive format	application/x-freearc	ARC	adENCAPSULATION	
Autodesk_3ds_Fmt	1101	1036	Autodesk 3ds format	application/x-3ds	3DS	adCAD	
Monkeys_Audio_Fmt	1102	1037	Monkey's Audio format		APE	adSOUND	
CALS_Fmt	1103	1038	CALS raster image format		CAL	adRASTERIMAGE	
Dr_Halo_PAL_Fmt	1104	1039	Dr Halo raster image PAL file format		PAL	adRASTERIMAGE	
DPG_Fmt	1105	1040	Nintendo DS DPG video format		DPG	adMOVIE	
JPEG_XR_Fmt	1106	1041	JPEG XR (extended range) image format	image/vnd.ms-photo	JXR, HDP	adRASTERIMAGE	
TCR_eBook_Fmt	1107	1042	TCR/ZVR (Text Compression for Reader) eBook format		TCR, ZVR	adWORDPROCESSOR	
IHEX_Fmt	1108	1043	Intel Hex format		IHEX	adENCAPSULATION	
QCOW_Fmt	1109	1044	QEMU Copy On Write		QCOW	adENCAPSULATION	
VDI_Fmt	1110	1045	VirtualBox Disk Image		VDI	adENCAPSULATION	
OneNote_Alternate_Fmt	1111	1046	OneNote Alternative Packaging Format			adWORDPROCESSOR	onealtsr
RMS_Protected_Fmt	1112	1047	Rights Management Services (RMS)-protected format		PFILE, PPDF, PJPG, PTXT	adWORDPROCESSOR	pfilesr
Portfolio_PDF_Fmt	1113	1048	Portfolio PDF File	application/pdf	PDF	adWORDPROCESSOR	pdfsr

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Crystal_Reports_Fmt	1114	1049	SAP Crystal Reports format	application/x-rpt	RPT	adANALYTICS	olesr
Thumbs_db_Fmt	1115	1050	Microsoft Windows thumbs.db format		DB	adENCAPSULATION	
PagePlus_Fmt	1116	1051	Serif PagePlus format		PPP	adDESKTOPPUBLSH	olesr
MS_Project_Exchange_Fmt	1117	1052	Microsoft Project Exchange format		MPX	adSCHEDULE	
MS_Management_Pack_MPX_Fmt	1118	1053	Microsoft Systems Center Operation Manager (SCOM) management pack MPX format		MPX	adMISC	xmlsr
AutoCAD_VBA_Project_Fmt	1119	1054	AutoCAD VBA project format		DVB	adMISC	
PLY_ASCII_Fmt	1120	1055	Polygon File Format (PLY) ASCII format		PLY	adCAD	
PLY_Binary_Fmt	1121	1056	Polygon File Format (PLY) binary format		PLY	adCAD	
JavaView_JVX_Fmt	1122	1057	JavaView XML (JVX) format		JVX	adCAD	xmlsr
X3D_Fmt	1123	1058	Extensible 3d Graphics (X3D) XML format	model/x3d+xml	X3D	adCAD	
ZBrush_Project_Fmt	1124	1059	ZBrush ZProject (ZPR) format		ZPR	adCAD	
ZBrush_Tool_Fmt	1125	1060	ZBrush ZTtool (ZTL) format		ZTL	adCAD	
Windows_Installer_Patch_Fmt	1126	1061	Microsoft Windows Installer Patch Package (MSP) format		MSP	adENCAPSULATION	olesr
Windows_Installer_Transform_Fmt	1127	1062	Microsoft Windows Installer Transform (MST) format		MST	adENCAPSULATION	
Lotus_Approach_Fmt	1128	1063	Lotus Approach format	application/vnd.lotus-approach	APR, MPR	adDATABASE	
Outlook_SendRcv_Settings_Fmt	1129	1064	Microsoft Outlook 2002 Send-Receive Settings		SRS	adMISC	
MS_Publisher_Scheme_Fmt	1130	1065	Microsoft Publisher colour scheme		SCM	adMISC	
SO_Chart_Fmt	1131	1066	Star Office 4,5 Chart	application/vnd.stardivision.chart	SDS	adVECTORGRAPHIC	olesr
SO_Database_Fmt	1132	1067	Star Office 4,5 Database	application/vnd.stardivision.base	SDB	adDATABASE	olesr
SO_Library_Fmt	1133	1068	Star Office 4,5 Library		SBL	adLIBRARY	
PageMaker_Document_Fmt	1134	1069	Adobe PageMaker document	application/pagemaker	PMD	adDESKTOPPUBLSH	
MS_DTS_Fmt	1135	1070	Microsoft Data Transformation Services (DTS) package file		DTS	adMISC	
Cognos_PowerPlay_PPR_Fmt	1136	1071	Cognos PowerPlay up to version 7 (PPR) format		PPR	adANALYTICS	
Visual_Studio_SUO_Fmt	1137	1072	Microsoft Visual Studio solution user		SUO	adSWDEV	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			options (suo) file				
MS_GraphEdit_Fmt	1138	1073	Microsoft GraphEdit File format		GRF	adMISC	
ArcGIS_Graph_Fmt	1139	1074	ArcGIS Graph format		GRF	adGIS	
SID_Audio_Fmt	1140	1075	SID Audio format	audio/prs.sid	SID	adSOUND	
MrSID_Fmt	1141	1076	LizardTech MrSID image format	image/x-mrsid	SID	adRASTERIMAGE	
Cardfile_Fmt	1142	1077	Microsoft Windows Cardfile address book format	application/x-mscardfile	CRD	adWORDPROCESSOR	
MS_Word_Mac_4_Fmt	1143	205	Microsoft Word for Macintosh (version 4,5)	application/msword	DOC	adWORDPROCESSOR	mbsr
WordPerfect_5_Fmt	1144	80	WordPerfect (version 5)	application/x-corel-wordperfect	WOP, DOC	adWORDPROCESSOR	wosr
WordPerfect_6_Fmt	1145	178	Corel WordPerfect (version 6 and higher)	application/x-corel-wordperfect	WPD	adWORDPROCESSOR	wp6sr
WordPerfect_Graphics_1_Fmt	1146	85	WordPerfect Graphics (version 1)	application/vnd.wordperfect	WPG, QPG	adRASTERIMAGE, adVECTORGRAPHIC	
Organization_Chart_Fmt	1147	1078	OrgPlus Organization Chart	application/orgplus	OPX	adDATABASE	
Lotus_Organizer_Fmt	1148	1079	Lotus Organizer documents	application/vnd.lotus-organizer	OR2, OR3, OR4, OR5, OR6	adSCHEDULE	
MS_DBML_Fmt	1149	1080	Microsoft Database Markup Language XML document		DBML	adWORDPROCESSOR	
XMind_Fmt	1150	1081	XMind document	application/xmind	XMIND	adPRESENTATION	
MSI_Cerius_Fmt	1151	1082	MSI Cerius chemical formula document	chemical/x-cerius	MSI	adSCIENTIFIC	
GenBank_Fmt	1152	1083	GenBank DNA character sequence document	chemical/x-genbank	GB	adSCIENTIFIC	
GIS_World_File_Fmt	1153	1084	ESRI GIS World file		BPW, GFW, JGW, J2W, PGW, SDW, TFW, WLD	adGIS	afsr
GIS_Projection_Metadata_Fmt	1154	1085	ESRI Projection Metadata (PRJ) file		PRJ	adGIS	
PowerWorld_Binary_Fmt	1155	1086	PowerWorld Binary (PWB) file		PWB	adCAD	
PowerWorld_Display_Fmt	1156	1087	PowerWorld Display (PWD) file		PWD	adCAD	
ArcXML_Fmt	1157	1088	ESRI ArcIMS project XML file (ArcXML)		AXL	adGIS	
GAMS_GDX_Fmt	1158	1089	General Algebraic Modeling System (GAMS) Data Exchange (GDX) format		GDX	adSCIENTIFIC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
ArcMap_MXD_Fmt	1159	1090	ArcMap Map Exchange Document project (MXD)		MXD	adGIS	
RRDtool_Fmt	1160	1091	RRDtool (Round Robin Database) data file		RRD	adDATABASE	
HWPX_Fmt	1161	1092	Hangul HWPX document	application/hwp+zip	HWPX	adWORDPROCESSOR	hwpxsr
SolidWorks_2015_Fmt	1162	1093	SolidWorks (2015 onwards) file		SLDPRT, SLDDRW, SLDASM	adCAD	
MS_Photo_Editor_Fmt	1163	1094	Microsoft Photo Editor 'embedded GIF' file	application/vnd.ms-photo-editor		adRASTERIMAGE	
MS_Word_HTML_Fmt	1164	1095	Microsoft Word HTML format		DOC, HTM	adWORDPROCESSOR	htmlsr
MS_Excel_HTML_Fmt	1165	1096	Microsoft Excel HTML format		XLS, HTM	adWORDPROCESSOR	htmlsr
Portable_FloatMap_Fmt	1166	1097	Portable FloatMap (PFM) image	image/x-portable-floatmap	PFM	adRASTERIMAGE	
RGBE_Fmt	1167	1098	Radiance RGBE (HDR) image	image/vnd.radiance	HDR, PIC, RGBE, XYZE	adRASTERIMAGE	
APNG_Fmt	1168	1099	Animated Portable Network Graphics (Animated-PNG)	image/apng	APNG, PNG	adANIMATION	kppngrdr
Enhanced_Compressed_Wavelet_Fmt	1169	1100	Enhanced Compressed Wavelet image	image/ecw	ECW	adRASTERIMAGE	
Ensoniq_Waveset_Fmt	1170	1101	Ensoniq Waveset audio data file		ECW	adSOUND	
Corel_Photo_Paint_Fmt	1171	1102	Corel Photo Paint (version 7 and higher)	image/x-corelphotopaint	CPT	adRASTERIMAGE	
OpenRaster_Fmt	1172	1103	OpenRaster image	image/openraster	ORA	adRASTERIMAGE	
Krita_Fmt	1173	1104	Krita image	application/x-krita	KRA	adRASTERIMAGE	
Gerber_Fmt	1174	1105	Gerber image format	application/vnd.gerber	GBR	adVECTORGRAPHIC	
PGML_Fmt	1175	1106	Precision Graphics Markup Language		PGML	adVECTORGRAPHIC	xmlsr
Away3D_Fmt	1176	1107	Away3D scene file		AWD	adCAD	
CAD_3MF_Fmt	1177	1108	3D Manufacturing Format document	application/vnd.ms-package.3dmanufacturing-3dmodel+xml	3MF	adCAD	
AMF_Fmt	1178	1109	Additive manufacturing file format (AMF) document	application/x-amf	AMF	adCAD	xmlsr
C3D_Fmt	1179	1110	Coordinate 3D (C3D) format		C3D	adCAD	
CAD_3DSystems_BFF_Fmt	1180	1111	3D Sprint (3D Systems) SLA Build file		BFF	adCAD	
NRRD_Fmt	1181	1112	NRRD (nearly raw raster data)		NRRD	adRASTERIMAGE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			image format				
Cinema_4D_Fmt	1182	1113	Cinema 4D model		C4D	adCAD	
FBX_ASCII_Fmt	1183	1114	Kaydara FBX project (ASCII)		FBX	adCAD	
FBX_Binary_Fmt	1184	1115	Kaydara FBX project (binary)		FBX	adCAD	
Wavefront_OBJ_Fmt	1185	1116	Wavefront OBJ geometry definition file		OBJ	adCAD	
Wavefront_MTL_Fmt	1186	1117	Wavefront Material Template Library (MTL)		MTL	adCAD	
MS_Power_BI_Template_Fmt	1187	1118	Microsoft Power BI Desktop template format		PBIT	adANALYTICS	
Windows_Sticky_Notes_Fmt	1188	1119	Microsoft Windows Sticky Notes format		SNT	adWORDPROCESSOR	
BlakHole_Fmt	1189	1120	BlakHole compression format		BH	adENCAPSULATION	
PowerArchiver_Fmt	1190	1121	PowerArchiver PA compression format		PA	adENCAPSULATION	
PageMagic_Fmt	1191	1122	NEBS PageMagic format		DTP	adDESKTOPPUBLSH	olesr
PIM_Archiver_Fmt	1192	1123	PIM Archiver format		PIM	adENCAPSULATION	
Softdisk_Text_Compressor_Fmt	1193	1124	Softdisk Text Compressor format		CTX	adENCAPSULATION	
Ability_PhotoPaint_Fmt	1194	1125	Ability Office PhotoPaint image		APX	adRASTERIMAGE	
Softlib_Fmt	1195	1126	Softdisk Softlib compression format		SLB	adENCAPSULATION	
Timeworks_Publisher_Fmt	1196	1127	Timeworks Publisher (Publish It) format		DTP	adDESKTOPPUBLSH	
Scribe_Fmt	1197	1128	Scribe markup language and word processing system		MSS	adWORDPROCESSOR	afsr
SQLite_Write_Ahead_Log_Fmt	1198	1129	SQLite Write-Ahead Log file		WAL	adDATABASE	
SQLite_WAL_Index_Fmt	1199	1130	SQLite WAL-index (shm) file		SHM	adDATABASE	
AutoForm_Design_Fmt	1200	1131	AutoForm Design file		AFD	adCAD	
TSV_Fmt	1201	1132	Tab-separated values (TSV) file	text/tab-separated-values	TSV, TAB	adWORDPROCESSOR	afsr, afsr
OpenStreetMap_XML_Fmt	1202	1133	OpenStreetMap XML data		OSM	adGIS	
OpenStreetMap_PBF_Fmt	1203	1134	OpenStreetMap Protocolbuffer Binary Format data file (.osm.pbf)		PBF	adGIS	
Nero_Audio_Compilation_Fmt	1204	1135	Nero Audio-CD compilation file		NRA	adMISC	
Nero_ISO_Compilation_Fmt	1205	1136	Nero ISO compilation file		NRI	adMISC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
WordStar_for_Windows_Fmt	1206	1137	WordStar for Windows file		WSD	adWORDPROCESSOR	stringssr
MS_Outlook_PAB_Fmt	1207	1138	Microsoft Outlook Personal Address Book (PAB)		PAB	adMISC	
HLSL_FXO_Fmt	1208	1139	DirectX High-Level Shader Language (HLSL) pre-compiled shader		FXO	adCAD	
HLSL_CSO_Fmt	1209	1140	DirectX High-Level Shader Language (HLSL) compiled shader object		CSO	adCAD	
Oberon_Document_Fmt	1210	1141	Component Pascal / Oberon Document file		ODC	adSOURCECODE	
Oberon_Symbol_Fmt	1211	1142	Component Pascal / Oberon Symbol file		OSF	adOBJECTMODULE	
Oberon_Code_Fmt	1212	1143	Component Pascal / Oberon Code (executable and loadable object) file		OCF	adEXECUTABLE	
Python_Bytecode_Fmt	1213	1144	Python compiled bytecode	application/x-bytecode.python	PYC	adEXECUTABLE	
PCPaint_Fmt	1214	1145	PCPaint / Pictor Paint image format		PIC	adRASTERIMAGE	
PCRaster_Map_Fmt	1215	1146	PCRaster Map / Cross System Format geographical data		MAP, CSF	adGIS	
COM_Type_Library_Fmt	1216	1147	Microsoft Component Object Model (COM) Type library		TLB	adLIBRARY	
MS_Visual_C_Export_Fmt	1217	1148	Microsoft Visual C++ Export file		EXP	adLIBRARY	
Lotus_Organizer_Report_Fmt	1218	1149	Lotus Organizer report document		REP	adSCHEDULE	
Audible_Audiobook_AA_Fmt	1219	1150	Audible Audiobook (AA) file	audio/audible	AA	adSOUND	
DOS_RED_Fmt	1220	1151	MS-DOS RED installer library format		RED	adLIBRARY	
CA_ZIPXP_Fmt	1221	1152	CA Technologies ZIPXP compressed document		CAZ	adENCAPSULATION	
Kindle_Topaz_Fmt	1222	1153	Amazon Kindle Topaz eBook		AZW, AZW1, TPZ	adWORDPROCESSOR	
Windows_Shim_Database_Fmt	1223	1154	Microsoft Windows Shim Database file		SDB	adDATABASE	
MS_Incremental_Linker_Fmt	1224	1155	Microsoft Visual Studio incremental linker file		ILK	adSWDEV	
Lotus_Smart_Icon_Fmt	1225	1156	Lotus Smart Icon image file		SMI	adRASTERIMAGE	
Lotus_Organizer_Layout_Fmt	1226	1157	Lotus Organizer print/paper layout file		PLT	adSCHEDULE	
CMZ_Fmt	1227	1158	CMZ compression format		CMZ	adENCAPSULATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
RFFlow_Fmt	1228	1159	RFFlow flowchart document		FLO	adPRESENTATION	
InstallShield_Script_Fmt	1229	1160	InstallShield script document		INS	adENCAPSULATION	
InstallShield_Rules_Fmt	1230	1161	InstallShield Compiled Rules file		INX	adENCAPSULATION	
Windows_FTS_Fmt	1231	1162	Microsoft Windows 95/NT help full-text-search file		FTS	adDATABASE	
DVD_Info_Fmt	1232	1163	DVD Information (IFO) file	content/dvd	IFO	adDATABASE	
Emacs_Lisp_Bytecode_Fmt	1233	1164	Byte-compiled Lisp (Emacs/XEmacs)	application/x-bytecode.elisp	ELC	adEXECUTABLE	
Windows_Resource_Fmt	1234	1165	Microsoft Windows binary resource file		RES	adMISC	
MS_Precompiled_Header_Fmt	1235	1166	Microsoft Visual C/C++ binary pre-compiled header		PCH	adSWDEV	
Borland_Turbo_Project_Fmt	1236	1167	Borland Turbo C project file		PRJ	adSWDEV	
PS_Font_Descriptor_Fmt	1237	1168	PostScript binary Font Descriptor file		NTF	adFONT	
MySQL_Index_Fmt	1238	1169	MySQL MyISAM Table index		MYI	adDATABASE	
MS_SQL_Fmt	1239	1170	Microsoft SQL Server primary database file		MDF	adDATABASE	
DNL_eBook_Fmt	1240	1171	DNAML DNL eBook		DNL	adWORDPROCESSOR	
GD_Image_Fmt	1241	1172	GD Library image		GD, GD2	adRASTERIMAGE	
ITunes_Library_Fmt	1242	1173	Apple iTunes music library		ITL	adDATABASE	
MS_SQM_Fmt	1243	1174	Microsoft Windows Live Messenger/Mail log file		SQM	adMISC	
VIFF_Fmt	1244	1175	Khoros Visualization Image File Format (VIFF)	image/x-viff	XV, VIF, VIFF	adRASTERIMAGE	
JBIG_Fmt	1245	1176	JBIG (JBIG1) image	image/jbig	JBG, JBIG, BIE	adRASTERIMAGE	
CodeWarrior_Project_Fmt	1246	1177	CodeWarrior C/C++ project		MCP	adSWDEV	
PaintShop_Pro_JBF_Fmt	1247	1178	PaintShop Pro JBF image cache file	image/jbf	JBF	adMISC	
Delphi_Diagram_Portfolio_Fmt	1248	1179	Delphi Diagram Portfolio file		DDP	adMISC	
Adobe_Swatch_Exchange_Fmt	1249	1180	Adobe Swatch Exchange Format		ASE, ASEF	adRASTERIMAGE	
ASCII_Scene_Exporter_Fmt	1250	1181	Autodesk 3ds Max ASCII Scene Exporter file		ASE	adCAD	
AVR_Fmt	1251	1182	AVR (Audio Visual Research) format		AVR	adSOUND	
Winamp_AVS_Fmt	1252	1183	Winamp AVS (Advanced Visualization Studio) plug-in file		AVS	adSOUND	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
After_Effects_Project_Fmt	1253	1184	Adobe After Effects project		AEP	adMOVIE	
Anfy_Applet_Generator_Fmt	1254	1185	Anfy (Java) Applet Generator file		AJP	adMISC	
SmartCipher_Fmt	1255	1186	SmartCipher encrypted file			adENCAPSULATION	
General_Exchange_Fmt	1256	1187	General Exchange Format (GXF)	application/gxf	GXF	adMOVIE	
Maxis_XA_Fmt	1257	1188	Maxis XA audio file		XA	adSOUND	
NUT_Fmt	1258	1189	NUT Open Container Format		NUT	adMOVIE	
OpenMG_Audio_Fmt	1259	1190	Sony OpenMG Audio (OMA) container file		OMA, OMG	adSOUND	
TXD_Fmt	1260	1191	Renderware Texture Dictionary (TXD) file		TXD	adRASTERIMAGE	
DFA_Fmt	1261	1192	DreamForge DFA FMV format		DFA	adMOVIE	
FunCom_ISS_Fmt	1262	1193	FunCom ISS audio		ISS	adSOUND	
Sony_MSV_Fmt	1263	1194	Sony Compressed Audio (MSV/DVF)		DVF, ICS, MSV	adSOUND	
THP_Fmt	1264	1195	GameCube THP Video		THP	adMOVIE	
Smush_Animation_Fmt	1265	1196	LucasArts Smush SAN Animation Format		SAN, NUT	adANIMATION	
SIFF_Audio_Fmt	1266	1197	Beam Software SIFF audio file		SON	adSOUND	
SNES_SPC_Fmt	1267	1198	SNES SPC700 audio file		SPC	adSOUND	
Sierra_VMD_Fmt	1268	1199	Sierra Video and Music Data format		VMD	adMOVIE	
VTech_MJP_Fmt	1269	1200	VTech MHP video format		MJP	adMOVIE	
Nullsoft_Video_Fmt	1270	1201	Nullsoft Video format (NSV)		NSV	adMOVIE	
Shorten_Fmt	1271	1202	Shorten audio file		SHN	adSOUND	
Leitch_Video_Fmt	1272	1203	Leitch Exchange Format video (LXF)		LXF	adMOVIE	
ETV_Fmt	1273	1204	ETV video file		ETV	adMOVIE	
TAK_Audio_Fmt	1274	1205	TAK audio file		TAK	adSOUND	
Maelstrom_ANM_Fmt	1275	1206	Maelstrom ANM animation		ANM	adANIMATION	
SW_ANM_Fmt	1276	1207	Savage Warriors ANM animation		ANM	adANIMATION	
DeluxePaint_Animation_Fmt	1277	1208	DeluxePaint animation		ANM	adANIMATION	
Crack_Art_Fmt	1278	1209	Crack Art image		CA1, CA2, CA3	adRASTERIMAGE	
Time_Shift_Video_Fmt	1279	1210	Time Shift Video (TSV) format		TSV	adMOVIE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
XBV_Fmt	1280	1211	XBV video		XBV	adMOVIE	
HNM4_Fmt	1281	1212	CRYO HNM4 video		HNM	adMOVIE	
HNM6_Fmt	1282	1213	CRYO HNM6 video		HNM, HNS	adMOVIE	
NXV_Fmt	1283	1214	NXV video		NXV	adMOVIE	
VP5_Fmt	1284	1215	On2 VP5 video		VP5	adMOVIE	
FutureVision_FST_Fmt	1285	1216	FutureVision FST video		FST	adMOVIE	
Electronic_Arts_Audio_Fmt	1286	1217	Electronic Arts audio file		STR	adSOUND	
YOP_Fmt	1287	1218	Psygnosis YOP video		YOP	adMOVIE	
Matrox_Setup_Program_Fmt	1288	1219	Matrox Setup Program Archive MVA file		MVA	adMISC	
Vivado_Design_Suite_Fmt	1289	1220	Xilinx Vivado Design Suite file		VDS	adMISC	
Meridian_Lossless_Packing_Fmt	1290	1221	Meridian Lossless Packing Audio file		MLP	adSOUND	
Electronic_Arts_SEAD_Fmt	1291	1222	Electronic Arts SEAD audio		TGV	adSOUND	
Electronic_Arts_MPC_Fmt	1292	1223	Electronic Arts MPC video		MPC	adMOVIE	
PMP_Fmt	1293	1224	PMP video		PMP	adMOVIE	
DEGAS_Fmt	1294	1225	DEGAS (Design & Entertainment Graphic Arts System) image		PI1, PI2, PI3	adRASTERIMAGE	
DEGAS_Compressed_Fmt	1295	1226	DEGAS (Design & Entertainment Graphic Arts System) compressed image		PC1, PC2, PC3	adRASTERIMAGE	
AutoCAD_Plotter_Fmt	1296	1227	AutoCAD Plot Style and Configuration files		CTB, STB, PC3, PMP	adCAD	
Tiny_Stuff_Fmt	1297	1228	Tiny Stuff image		TNY, TN1, TN2, TN3.TN4.TN5.TN6	adRASTERIMAGE	
JV_Video_Fmt	1298	1229	Bitmap Brothers JV video		JV	adMOVIE	
REDCode_Fmt	1299	1230	REDCode video format		R3D	adMOVIE	
SIFF_Video_Fmt	1300	1231	Beam Software SIFF video file		VB	adMOVIE	
VP6_Fmt	1301	1232	On2 VP6 video		VP6	adMOVIE	
MTV_Fmt	1302	1233	Chinese MP4/MTV video		MTV	adMOVIE	
RSO_Fmt	1303	1234	Mindstorm RSO audio		RSO	adSOUND	
Star3_Fmt	1304	1235	Creative Labs Star 3 audio		ST3	adSOUND	
DXA_Fmt	1305	1236	Runesoft DXA video		DXA	adMOVIE	
MTH_Fmt	1306	1237	Nintendo GameCube video file		MTH	adMOVIE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MAD_Fmt	1307	1238	Electronic Arts MAD video file		MAD	adMOVIE	
Bink2_Fmt	1308	1239	Bink Video 2 audio-video container		BIK, BK2	adMOVIE	
PVA_Fmt	1309	1240	TechnoTrend PVA video		PVA	adMOVIE	
Interplay_ACMP_Fmt	1310	1241	Interplay ACMP audio			adSOUND	
Ipix_Fmt	1311	1242	Ipix spherical image		IPX	adRASTERIMAGE	
IVR_Fmt	1312	1243	RealNetworks Internet Video Recording (IVR) file		IVR	adMOVIE	
NuppelVideo_Fmt	1313	1244	NuppelVideo file		NUV	adMOVIE	
VFlash_PTX_Fmt	1314	1245	VTech V.Flash VTX image		PTX	adRASTERIMAGE	
PMD_Ringtone_Fmt	1315	1246	Polyphonic Ringtone PMD audio	application/x-pmd	PMD	adSOUND	
RoQ_Fmt	1316	1247	RoQ video		ROQ	adMOVIE	
CRYO_APC_Fmt	1317	1248	CRYO Interactive APC audio		APC, HNM, BF, ZIK	adSOUND	
VGZ_Fmt	1318	1249	VGZ video		VGZ	adMOVIE	
Novastorm_Video_Fmt	1319	1250	Novastorm Media video file		FA, FLM	adMOVIE	
UTalk_Fmt	1320	1251	MicroTalk/UTalk audio		UTK	adSOUND	
Xbox_XMV_Fmt	1321	1252	Microsoft Xbox XMV video		XMV	adMOVIE	
AbiWord_Fmt	1322	1253	AbiWord document	application/x-abiword	ABW	adWORDPROCESSOR	xmlsr
AbiWord_Template_Fmt	1323	1254	AbiWord template		ABT	adWORDPROCESSOR	
Psion_Word_Fmt	1324	1255	Psion EPOC Word document		PSI, PSITEXT	adWORDPROCESSOR	stringssr
Psion_Sheet_Fmt	1325	1256	Psion EPOC Sheet spreadsheet		PSISHEET	adSPREADSHEET	
Psion_Sketch_Fmt	1326	1257	Psion EPOC Sketch image			adRASTERIMAGE	
Psion_Record_Fmt	1327	1258	Psion EPOC Record audio			adSOUND	
Psion_MBM_Fmt	1328	1259	Psion EPOC Multi-Bitmap (MBM) image		MBM	adRASTERIMAGE	
Psion_TextEd_Fmt	1329	1260	Psion EPOC TextEd file			adWORDPROCESSOR	stringssr
Psion_AIF_Fmt	1330	1261	Psion EPOC Application Information File (AIF)		AIF	adRASTERIMAGE	
Psion_PIC_Fmt	1331	1262	Psion 3 PIC bitmap		PIC	adRASTERIMAGE	
Psion_Object_Fmt	1332	1263	Psion 3 OPL Object File		OPA, OPO	adENCAPSULATION	
Psion_Executable_Fmt	1333	1264	Psion 3 IMG/APP executable		IMG, APP	adEXECUTABLE	
Psion_Sound_Fmt	1334	1265	Psion 3 Sound file		WVE	adSOUND	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Psion_Database_Fmt	1335	1266	Psion EPOC Database			adDATABASE	
Psion_Word_3_Fmt	1336	1267	Psion 3 Word document		WRD	adWORDPROCESSOR	stringssr
Psion_Sheet_3_Fmt	1337	1268	Psion 3 Sheet spreadsheet		SPR	adSPREADSHEET	
Zoner_Draw_Fmt	1338	1269	Zoner Draw / Zoner Callisto Metafile (ZMF) version 4+		ZMF	adVECTORGRAPHIC	
Zoner_BMI_Fmt	1339	1270	Zoner BMI image		BMI	adRASTERIMAGE	
TealDoc_Fmt	1340	1271	TealDoc PalmOS eBook		PDB	adWORDPROCESSOR	
TealPaint_Fmt	1341	1272	TealPaint PalmOS eBook		PDB	adWORDPROCESSOR	
PalmDOC_Fmt	1342	1273	PalmDOC / Aportis DOC eBook	application/x-aportisdoc	PRC, PDB	adWORDPROCESSOR	
QiOO_Fmt	1343	1274	QiOO mobile eBook		JAR	adWORDPROCESSOR	
Plucker_Fmt	1344	1275	Plucker eBook	application/prs.plucker	PDB	adWORDPROCESSOR	
eReader_Fmt	1345	1276	eReader (Palm Reader/ Peanut Reader) eBook		PDB	adWORDPROCESSOR	
Quickword_Fmt	1346	1277	PalmOS Quickword document		PRC	adWORDPROCESSOR	stringssr
Quicksheet_Fmt	1347	1278	PalmOS Quicksheet document		PRC	adSPREADSHEET	
Quickpoint_Fmt	1348	1279	PalmOS Quickpoint document		PRC	adPRESENTATION	
TealMeal_Fmt	1349	1280	TealMeal PalmOS database		PDB	adDATABASE	
zTXT_Fmt	1350	1281	zTXT eBook	application/x-pdb-ztxt-ebook	PDB	adWORDPROCESSOR	
TomeRaider_Fmt	1351	1282	TomeRaider eBook		TR	adWORDPROCESSOR	
TomeRaider_PDB_Fmt	1352	1283	TomeRaider PDB eBook		TR2, TR3	adWORDPROCESSOR	
WordSmith_Fmt	1353	1284	PalmOS Wordsmith document			adWORDPROCESSOR	
iSilo_Fmt	1354	1285	PalmOS iSilo document	application/x-pdb-isilo-ebook	PDB	adWORDPROCESSOR	
SuperMemo_Fmt	1355	1286	PalmOS SuperMemo document		KNO, PDB	adWORDPROCESSOR	
BDicty_Fmt	1356	1287	PalmOS BDicty document		PDB	adWORDPROCESSOR	
PalmOS_Executable_Fmt	1357	1288	PalmOS executable	application/vnd.palm	PRC	adEXECUTABLE	
PalmOS_Library_Fmt	1358	1289	PalmOS dynamic library		PRC	adLIBRARY	
Shanda_Bambook_Fmt	1359	1290	Shanda Bambook eBook	application/x-snb-ebook	SNB	adWORDPROCESSOR	
PMLZ_Fmt	1360	1291	Palm Markup Language (PMLZ) eBook		PMLZ	adWORDPROCESSOR	
Rocket_eBook_Fmt	1361	1292	Rocket eBook	application/x-rocketbook	RB	adWORDPROCESSOR	
iBooks_Author_Fmt	1362	1293	Apple iBooks Author eBook	application/vnd.apple.ibauthor	IBA	adWORDPROCESSOR	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Statistica_Spreadsheet_Fmt	1363	1294	Statsoft Statistica Spreadsheet		STA	adSPREADSHEET	
Statistica_Graph_Fmt	1364	1295	Statsoft Statistica Graph File		STG	adVECTORGRAPHIC	
Statistica_Scrollsheet_Fmt	1365	1296	Statsoft Statistica Scrollsheet		SCR	adSPREADSHEET	
Apple_Newton_Package_Fmt	1366	1297	Apple Newton executable/installer/file		PKG	adEXECUTABLE	
Adobe_Zip_Extension_Fmt	1367	1298	Adobe Zip Format Extension Package (ZXP)	application/vnd.adobe.air-ucf-package+zip	ZXP	adENCAPSULATION	
Uniform_Office_Fmt	1368	1299	Uniform Office Format document		UOF	adWORDPROCESSOR	xmlsr
Uniform_Office_Text_Fmt	1369	1300	Uniform Office Format word processing document	application/vnd.uof.text	UOF, UOT	adWORDPROCESSOR	xmlsr
Uniform_Office_Spreadsheet_Fmt	1370	1301	Uniform Office Format spreadsheet	application/vnd.uof.spreadsheet	UOF, UOS	adSPREADSHEET	
Uniform_Office_Presentation_Fmt	1371	1302	Uniform Office Format presentation	application/vnd.uof.presentation	UOF, UOP	adPRESENTATION	
Uniform_Office_Zip_Fmt	1372	1303	Uniform Office Format document, zip format		UOF	adWORDPROCESSOR	
Uniform_Office_Text_Zip_Fmt	1373	1304	Uniform Office Format word processing document, zip format	application/vnd.uof.text+zip	UOF, UOT	adWORDPROCESSOR	
Uniform_Office_Spreadsheet_Zip_Fmt	1374	1305	Uniform Office Format spreadsheet, zip format	application/vnd.uof.spreadsheet+zip	UOF, UOS	adSPREADSHEET	
Uniform_Office_Presentation_Zip_Fmt	1375	1306	Uniform Office Format presentation, zip format	application/vnd.uof.presentation+zip	UOF, UOP	adPRESENTATION	
MacDraft_Fmt	1376	1307	MacDraft drawing		DRW, MDD	adCAD	
RagTime_Fmt	1377	1308	RagTime document		RAG, RTD	adDESKTOPPUBLSH	
MacDraw_Fmt	1378	1309	MacDraw drawing			adVECTORGRAPHIC	
Wingz_Fmt	1379	1310	Wingz spreadsheet		WKZ	adSPREADSHEET	
Claris_Draw_Fmt	1380	1311	Claris Draw document			adVECTORGRAPHIC	
BeagleWorks_Word_Fmt	1381	1312	BeagleWorks (later WordPerfect Works) Word Processor document		BW, WPW	adWORDPROCESSOR	stringssr
BeagleWorks_Database_Fmt	1382	1313	BeagleWorks (later WordPerfect Works) Database document		BW, WPW	adDATABASE	
BeagleWorks_Spreadsheet_Fmt	1383	1314	BeagleWorks (later WordPerfect Works) Spreadsheet document		BW, WPW	adSPREADSHEET	
BeagleWorks_Paint_Fmt	1384	1315	BeagleWorks (later WordPerfect Works) Paint document		BW, WPW	adRASTERIMAGE	
BeagleWorks_Draw_Fmt	1385	1316	BeagleWorks (later WordPerfect Works) Draw document		BW, WPW	adVECTORGRAPHIC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
GreatWorks_Word_Fmt	1386	1317	Symantec GreatWorks Word Processor document			adWORDPROCESSOR	stringssr
GreatWorks_Outline_Fmt	1387	1318	Symantec GreatWorks Outline document			adOUTLINE	
GreatWorks_Database_Fmt	1388	1319	Symantec GreatWorks Database document			adDATABASE	
GreatWorks_Spreadsheet_Fmt	1389	1320	Symantec GreatWorks Spreadsheet document			adSPREADSHEET	
GreatWorks_Draw_Fmt	1390	1321	Symantec GreatWorks Draw document			adVECTORGRAPHIC	
GreatWorks_Chart_Fmt	1391	1322	Symantec GreatWorks Chart document			adVECTORGRAPHIC	
MS_Works_3_Mac_WP_Fmt	1392	1323	Microsoft Works for Mac, version 3 and 4, Word Processor document	application/x-msworks	MSW, WPS	adWORDPROCESSOR	
MS_Works_3_Mac_DB_Fmt	1393	1324	Microsoft Works for Mac, version 3 and 4, Database	application/x-msworks	WDB	adDATABASE	
MS_Works_3_Mac_SS_Fmt	1394	1325	Microsoft Works for Mac, version 3 and 4, Spreadsheet	application/x-msworks	WKS	adSPREADSHEET	
MS_Works_3_Mac_Comm_Fmt	1395	1326	Microsoft Works for Mac, version 3 and 4, Communications document	application/x-msworks		adCOMMUNICATION	
MS_Works_3_Mac_Draw_Fmt	1396	1327	Microsoft Works for Mac, version 3 and 4, Draw document	application/x-msworks	MSW	adVECTORGRAPHIC	
SAP_VDS_Fmt	1397	1328	SAP 3d Visual Enterprise VDS document		VDS	adCAD	
ZIPVFS_Fmt	1398	1329	ZIPVFS SQLite compressed read/write database		SQLITE	adDATABASE	
Right_Hemisphere_Material_Fmt	1399	1330	Right Hemisphere Material file		RH, RHM	adCAD	
RH_Thumbnails_Fmt	1400	1331	Right Hemisphere thumbnail collection file		$RH	adCAD	
Westwood_Studios_Audio_Fmt	1401	1332	Westwood Studios Audio file		AUD	adSOUND	
Shockwave_Stream_Fmt	1402	1333	Shockwave Stream audio-video file		STREAM	adMOVIE	
EGG_Video_Fmt	1403	1334	EGG video file		EGG	adMOVIE	
IRCAM_Fmt	1404	1335	IRCAM audio file		IRCAM	adSOUND	
Sierra_Audio_Fmt	1405	1336	Sierra Entertainment audio file		SOL	adSOUND	
TiVo_Video_Fmt	1406	1337	TiVo video		TY+	adMOVIE	
OptimFROG_Fmt	1407	1338	OptimFROG audio		OFR, OFS	adSOUND	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
LPAC_Fmt	1408	1339	Lossless Predictive Audio Compression file		PAC	adSOUND	
RK_Audio_Fmt	1409	1340	RK Audio lossless compressed audio		RKA	adSOUND	
Asylum_Music_Fmt	1410	1341	Asylum Music Format		AMF	adSOUND	
Novastorm_Audio_Fmt	1411	1342	Novastorm Media audio file		SMP	adSOUND	
HHE_Fmt	1412	1343	HHE video		HHE	adMOVIE	
Portable_Voice_Fmt	1413	1344	Portable Voice Format audio		PVF	adSOUND	
CNM_Video_Fmt	1414	1345	Arxel CNM audio-video format		CNM	adMOVIE	
Phantom_Cine_Fmt	1415	1346	Phantom Cine video file		CINE	adMOVIE	
MPEG2_Transport_Stream_Fmt	1416	1347	MPEG-2 Transport Stream video		M2TS	adMOVIE	
Audacity_Project_Fmt	1417	1348	Audacity audio project file	application/x-audacity-project	AUP	adSOUND	
Voltage_VSF_Fmt	1418	1349	Micro Focus Voltage VSF encrypted file		VDF	adENCAPSULATION	
XLIFF_Fmt	1419	1350	XML Localization Interchange File Format (XLIFF)	application/xliff+xml	XLF	adWORDPROCESSOR	xmlsr
XBRL_Fmt	1420	1351	Extensible Business Reporting Language (XBRL)		XBRL	adWORDPROCESSOR	xmlsr
AuditXPressX_Fmt	1421	1352	AuditXPressX file		AXPX	adWORDPROCESSOR	
Box_Note_Fmt	1422	1353	Box Note document		BOXNOTE	adWORDPROCESSOR	
Hikvision_DVR_Fmt	1423	1354	Hikvision DVR video			adMOVIE	
Electronic_Arts_TGV_Fmt	1424	1355	Electronic Arts TGV video		TGV	adMOVIE	
Electronic_Arts_TGQ_Fmt	1425	1356	Electronic Arts TGQ video		TGQ	adMOVIE	
Reaper_Video_Fmt	1426	1357	Reaper Video		FMV	adMOVIE	
Lightweight_Video_Fmt	1427	1358	Lightweight Video Format (LVF)		LVF	adMOVIE	
Liquid_Audio_Fmt	1428	1359	Liquid Audio		LQT	adSOUND	
Extended_Instrument_Fmt	1429	1360	eXtended Instrument generic audio tracker		XI	adSOUND	
MAML_Fmt	1430	1361	Microsoft Assistance Markup Language		AML	adWORDPROCESSOR	xmlsr
MS_Chat_Character_Fmt	1431	1362	Microsoft Comic Chat Character		AVB	adRASTERIMAGE	
MS_Border_Fmt	1432	1363	Microsoft Office Border images		BDR	adRASTERIMAGE	
MS_Binary_Log_Fmt	1433	1364	Microsoft Binary Log file		BLG	adMISC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MS_Reader_eBook_Fmt	1434	1365	Microsoft Reader eBook file		LIT	adWORDPROCESSOR	
MS_Reader_Annotations_Fmt	1435	1366	Microsoft Reader annotation file		EBO	adWORDPROCESSOR	
Amazon_KFX_Aux_Fmt	1436	1367	Amazon KFX eBook auxiliary format (2015)		KFX, AZW	adWORDPROCESSOR	
Amazon_KFX_Ion_Fmt	1437	1368	Amazon KFX eBook Ion format (2015)		KFX, AZW, ION	adWORDPROCESSOR	
MS_DPAPI_Fmt	1438	1369	Microsoft Data Protection API (DPAPI) data			adMISC	
MS_Streets_Fmt	1439	1370	Microsoft Streets & Trips map		EST	adGIS	
MS_Fast_Find_Index_Fmt	1440	1371	Microsoft Office Fast Find Index		FFX	adMISC	
MS_Fresh_Paint_Fmt	1441	1372	Microsoft Fresh Paint image		FPPX	adRASTERIMAGE	
MS_Mathematics_Fmt	1442	1373	Microsoft Mathematics worksheet		GCW	adSCIENTIFIC	
MS_Instrument_Definition_Fmt	1443	1374	Microsoft MIDI Instrument Definition File		IDF	adSOUND	
MS_Pocket_Streets_Fmt	1444	1375	Microsoft Pocket Streets map		MPS	adGIS	
Obfuscated_OpenType_Fmt	1445	1376	Obfuscated OpenType font (ODTTF)	application/vnd.ms-package.obfuscated-opentype	ODTTF	adFONT	
Pfaff_PCS_Fmt	1446	1377	Pfaff PCS embroidery image		PCS	adVECTORGRAPHIC	
Janome_JEF_Fmt	1447	1378	Janome JEF embroidery format		JEF	adVECTORGRAPHIC	
Husqvarna_HUS_Fmt	1448	1379	Husqvarna Viking HUS embroidery format		HUS	adVECTORGRAPHIC	
Husqvarna_VIP_Fmt	1449	1380	Husqvarna Viking-Pfaff VIP embroidery format		VIP	adVECTORGRAPHIC	
Brother_PEC_Fmt	1450	1381	Brother PEC embroidery format		PEC	adVECTORGRAPHIC	
Brother_PES_Fmt	1451	1382	Brother PEC embroidery format		PES	adVECTORGRAPHIC	
Viking_SHV_Fmt	1452	1383	Viking SHV embroidery format		SHV	adVECTORGRAPHIC	
VP3_Fmt	1453	1384	VP3 embroidery format		VP3	adVECTORGRAPHIC	
SEW_Fmt	1454	1385	SEW embroidery format		SEW	adVECTORGRAPHIC	
Data_Stitch_Tajima_Fmt	1455	1386	Data Stitch Tajima (DST) embroidery image		DST	adVECTORGRAPHIC	
Singer_XXX_Fmt	1456	1387	Singer XXX embroidery image		XXX	adVECTORGRAPHIC	
Bernina_ART_Fmt	1457	1388	Bernina ART embroidery image		ART	adVECTORGRAPHIC	
MS_Prefetch_Fmt	1458	1389	Microsoft Windows Prefetch (uncompressed) file		PF	adMISC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MS_Prefetch_Compressed_Fmt	1459	1390	Microsoft Windows Prefetch (compressed) file		PF	adMISC	
MS_MapPoint_Fmt	1460	1391	Microsoft MapPoint map		PTM	adGIS	
MS_Live_Meeting_Fmt	1461	1392	Microsoft Office Live Meeting Connection		RTC	adSCHEDULE	
MS_Speech_Definitions_Fmt	1462	1393	Microsoft text-to-speech Speech Definitions File		SDF	adMISC	
MS_Speech_Data_Fmt	1463	1394	Microsoft text-to-speech Speech Data File		SPD	adDATABASE	
MS_SQL_CE_Fmt	1464	1395	Microsoft SQL Server Compact (CE) edition database		SDF	adDATABASE	
MS_ICE_Project_Fmt	1465	1396	Microsoft Image Composite Editor (ICE) Project		SPJ	adMISC	
MS_DVR_Fmt	1466	1397	Microsoft Digital Video Recording (DVR-MS)	video/x-ms-dvr	DVR-MS	adMOVIE	
Symbol_Dynamics_EXP_Fmt	1467	1398	Symbol Dynamics EXP v1-4 document		WXP	adWORDPROCESSOR	stringssr
XNA_Compiled_Fmt	1468	1399	Microsoft XNA Compiled Format		XNB	adENCAPSULATION	
Outlook_Shortcut_Fmt	1469	1400	Microsoft Outlook or Exchange folder shortcut		XNK	adMISC	
ChiWriter_Fmt	1470	1401	ChiWriter document (up to version 3)		CHI	adWORDPROCESSOR	
ChiWriter4_Fmt	1471	1402	ChiWriter document (version 4)		CHI	adWORDPROCESSOR	
Lightning_Strike_Fmt	1472	1403	Lightning Strike image	image/cis-cod	COD	adRASTERIMAGE	
Blackberry_Executable_Fmt	1473	1404	Blackberry executable		COD	adEXECUTABLE	
EndNote_Library_Fmt	1474	1405	EndNote Library (up to version 9)	application/x-endnote-library	ENL	adDATABASE	
EndNote_Library_X_Fmt	1475	1406	EndNote Library (version X onwards)		ENL, ENLX	adDATABASE	
EndNote_Filter_Fmt	1476	1407	EndNote Filter	application/x-puid-fmt-327	ENF	adDATABASE	
EndNote_Style_Fmt	1477	1408	EndNote Style	application/x-endnote-style	ENS	adDATABASE	
EndNote_Connection_Fmt	1478	1409	EndNote Connection	application/x-endnote-connect	ENZ	adDATABASE	
Camtasia_Recording_Fmt	1479	1410	Camtasia Recording		CAMREC	adMOVIE	
Camtasia_Project_Fmt	1480	1411	Camtasia XML Project		CAMPROJ	adWORDPROCESSOR	
TechSmith_Project_Fmt	1481	1412	TechSmith JSON Project		TSCPROJ	adWORDPROCESSOR	
ABIF_Fmt	1482	1413	Applied Biosystems Inc. Format		AB1, FSA	adSCIENTIFIC	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			(ABIF)				
CIF_Fmt	1483	1414	Crystallographic Information File	chemical/x-cif	CIF	adSCIENTIFIC	
Sibelius_Fmt	1484	1415	Sibelius musical score		SIB	adSOUND	
Geogebra_Worksheet_Fmt	1485	1416	Geogebra worksheet	application/vnd.geogebra.file	GGB	adSCIENTIFIC	
Geogebra_Tool_Fmt	1486	1417	Geogebra tool		GGT	adSCIENTIFIC	
Polynomial_Texture_Map_Fmt	1487	1418	Polynomial Texture Map (PTM)		PTM	adRASTERIMAGE	
Poly_Tracker_Fmt	1488	1419	Poly Tracker audio		PTM	adSOUND	
PC_Outline_Fmt	1489	1420	PC-Outline document		PCO	adWORDPROCESSOR	
Spline_Font_Database_Fmt	1490	1421	Spline Font Database (SFD) font		SFD	adFONT	
QuickTime_Image_Fmt	1491	1422	QuickTime (QTIF) image	image/x-quicktime	QTIF, QIF, QTI	adRASTERIMAGE	
XBin_Image_Fmt	1492	1423	XBin image		XB	adRASTERIMAGE	
Segmented_Hypergraphics_Fmt	1493	1424	MS Segmented Hypergraphics image		SHG	adRASTERIMAGE	
LEADTools_CMP_Fmt	1494	1425	LEADTools CMP image		CMP	adRASTERIMAGE	
WBMP_Fmt	1495	1426	Wireless Bitmap image (WBMP)	image/vnd.wap.wbmp	WBMP	adRASTERIMAGE	
Blender_Fmt	1496	1427	Blender (v2) CAD file	application/x-blender	BLEND	adCAD	
Blender_v1_Fmt	1497	1428	Blender (v1) CAD file	application/x-blender	BLEND	adCAD	
Scribus_Fmt	1498	1429	Scribus document	application/vnd.scribus	SLA	adDESKTOPPUBLSH	
LyX_Fmt	1499	1430	LyX document	application/x-lyx	LYX	adWORDPROCESSOR	lyxsr
NZB_Fmt	1500	1431	NewzBin NZB format	application/x-nzb	NZB	adWORDPROCESSOR	
KWord_Fmt	1501	1432	KOffice KWord document	application/vnd.kde.kword	KWD	adWORDPROCESSOR	
KSpread_Fmt	1502	1433	KOffice KSpread document	application/vnd.kde.kspread	KSP	adSPREADSHEET	
KPresenter_Fmt	1503	1434	KOffice KPresenter document	application/vnd.kde.kpresenter	KPR	adPRESENTATION	
KWord_GZ_Fmt	1504	1435	KOffice (up to v1.1) kWord document	application/x-kword	KWD	adWORDPROCESSOR	
KSpread_GZ_Fmt	1505	1436	KOffice (up to v1.1) kSpread document	application/x-kspread	KSP	adSPREADSHEET	
KPresenter_GZ_Fmt	1506	1437	KOffice (up to v1.1) kPresenter document	application/x-kpresenter	KPR	adPRESENTATION	
Karbon_Fmt	1507	1438	KOffice Karbon document	application/vnd.kde.karbon	KARBON	adVECTORGRAPHIC	
KChart_Fmt	1508	1439	KOffice KChart document	application/vnd.kde.kchart	CHRT	adSPREADSHEET	
KPlato_Fmt	1509	1440	KOffice KPlato document	application/x-vnd.kde.kplato	KPLATO	adSCHEDULE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
GIMP_Pattern_Fmt	1510	1441	GIMP Pattern file		PAT	adRASTERIMAGE	
GIMP_Brush_Fmt	1511	1442	GIMP Brush file		GBR	adRASTERIMAGE	
GIMP_Animated_Brush_Fmt	1512	1443	GIMP Animated Brush file		GIH	adRASTERIMAGE	
Git_Pack_Index_Fmt	1513	1444	Git Pack Index format		IDX	adENCAPSULATION	
Git_Index_Fmt	1514	1445	Git Index format		INDEX	adENCAPSULATION	
MS_Tape_Fmt	1515	1446	Microsoft Tape Format		MTF, BAK	adENCAPSULATION	
STL_Binary_Fmt	1516	1447	3D Systems Stereolithography STL Binary Format			adCAD	
Unix_Shadow_Fmt	1517	1448	Unix /etc/shadow password file			adMISC	
MS_SQL_Log_Fmt	1518	1449	Microsoft SQL Server log		LDF	adDATABASE	
DER_Certificate_Fmt	1519	1450	DER-encoded X509 certificate	application/x-x509-user-cert	DER, CER	adENCAPSULATION	
EDIFACT_Fmt	1520	1451	EDIFACT-encoded EDI document	application/edifact	EDI	adDATABASE	
X12_Fmt	1521	1452	X12-encoded EDI document	application/edi-x12	EDI	adDATABASE	
Mathcad_Fmt	1522	1453	Mathcad MCD document	application/vnd.mcd	MCD	adSCIENTIFIC	
Mathcad_XML_Fmt	1523	1454	Mathcad XMCD document	application/x-mathcad	XMCD	adSCIENTIFIC	xmlsr
EDrawings_Fmt	1524	1455	eDrawings Publisher document		EASM, EPRT, EDRW	adCAD	
First_Choice_DB_Fmt	1525	1456	PFS First Choice database	database/x-firstchoice	FOL	adDATABASE	
First_Choice_WP_Fmt	1526	1457	PFS First Choice word-processing document		DOC	adWORDPROCESSOR	
First_Choice_SS_Fmt	1527	1458	PFS First Choice spreadsheet	application/x-first-choice	SS	adSPREADSHEET	
Professional_Plan_Fmt	1528	1459	PFS Professional Plan spreadsheet	application/x-pfs-plan		adSPREADSHEET	
PFS_Write_Fmt	1529	1460	PFS Professional Write document	application/x-pfsprofessionalwrite	PFS	adWORDPROCESSOR	
Symantec_QA_Fmt	1530	1461	Symantec Q&A Database		DTF	adDATABASE	
Bitmap_Graphics_Array_Fmt	1531	1462	OS/2 Bitmap Graphics Array	image/bga	BGA, BMP, ICO	adRASTERIMAGE	
OS2_Help_Fmt	1532	1463	OS/2 Help/INF document		HLP, INF	adWORDPROCESSOR	
Frame_Vector_Fmt	1533	1464	Frame Vector Metafile		FMV	adVECTORGRAPHIC	
RBase_2_Fmt	1534	1465	R:Base database (v2-v4)		RBF	adDATABASE	
Harvard_Graphics_Symbol2_Fmt	1535	1466	Harvard Graphics Symbol File (v2)		SYM	adVECTORGRAPHIC	
Freelance_Graphics_Fmt	1536	1467	Lotus Freelance Graphics image		DRW	adRASTERIMAGE	
Snoop_Capture_Fmt	1537	1468	Snoop Packet Capture file		CAP, SNOOP	adENCAPSULATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Python_Pickle_Fmt	1538	1469	Python Pickle file		PICKLE, PKL, P	adEXECUTABLE	
Matlab_Pcode_Fmt	1539	1470	Matlab P-code file		P	adSOURCECODE	
Rhinoceros_3D_Fmt	1540	1471	Rhinoceros 3D Model		3DM	adCAD	
GL_Transmission_Binary_Fmt	1541	1472	Graphics Language (GL) Binary Transmission Format	model/gltf+binary	GLB	adCAD	
CAD_3DXML_Fmt	1542	1473	3DVIDIA 3DXML archive	application/x-3dxmlplugin	3DXML	adCAD	
CAD_3DXML_XML_Fmt	1543	1474	3DVIDIA 3DXML XML document		3DXML	adCAD	
Autodesk_Fusion_360_Fmt	1544	1475	Autodesk Fusion 360 model		F3D	adCAD	
DELFTship_Fmt	1545	1476	DELFTship or FREE!ship model		FBM	adCAD	
Autodesk_Inventor_Drawing_Fmt	1546	1477	Autodesk Inventor drawing		IDW	adCAD	
Autodesk_Inventor_Part_Fmt	1547	1478	Autodesk Inventor part		IPT	adCAD	
Autodesk_Inventor_Assembly_Fmt	1548	1479	Autodesk Inventor assembly		IAM	adCAD	
Autodesk_Revit_Fmt	1549	1480	Autodesk Revit document		RVT, RFA, RTE, RFT	adCAD	
FreeCAD_Fmt	1550	1481	FreeCAD document		FCSTD	adCAD	
Solid_Edge_Part_Fmt	1551	1482	Solid Edge part		PAR	adCAD	olesr
Solid_Edge_Assembly_Fmt	1552	1483	Solid Edge assembly		ASM	adCAD	olesr
Solid_Edge_SheetMetal_Fmt	1553	1484	Solid Edge sheet metal		PSM	adCAD	olesr
SolidWorks_Visualize_Project_Fmt	1554	1485	SolidWorks Visualize project		SVPJ	adCAD	
Apache_Parquet_Fmt	1555	1486	Apache Parquet document		PARQUET	adDATABASE	parquetsr
AES_Crypt_Fmt	1556	1487	AES Crypt document		AES	adENCAPSULATION	
SO_Math_XML_Fmt	1557	1488	OpenDocument format (OpenOffice 1/StarOffice 6,7) Math XML	application-vnd.sun.xml.math	SXM	adMISC	
MathML_Fmt	1558	1489	MathML document	application/mathml+xml	MML, MATHML	adMISC	
Photoshop_Brush_Fmt	1559	1490	Adobe Photoshop Brush document	image/x-adobe-photoshop-brush	ABR	adMISC	
Photoshop_Color_Book_Fmt	1560	1491	Adobe Photoshop Color Book		ACB	adMISC	
Premiere_Project_Fmt	1561	1492	Adobe Premiere Elements/Pro project		PRPROJ, PREL	adMISC	
Premiere_Title_Fmt	1562	1493	Adobe Premiere title document		PTL	adMISC	
Premiere_Pro_Title_Fmt	1563	1494	Adobe Premiere Pro title document		PRTL	adMISC	
Memgraph_Fmt	1564	1495	Memgraph database plist format	application/x-bplist-memgraph	MEMGRAPH	adDATABASE	
Memgraph_XML_Fmt	1565	1496	Memgraph database XML format		MEMGRAPH	adDATABASE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
AV1_Image_Fmt	1566	1497	AV1 Image Format (AVIF)	image/avif	AVIF	adRASTERIMAGE	
AV1_Image_Sequence_Fmt	1567	1498	AV1 Image Sequence Format (AVIFS)	image/avif-sequence	AVIFS	adANIMATION	
IVF_Fmt	1568	1499	IVF container document		IVF	adRASTERIMAGE	
AV1_Image_IVF_Fmt	1569	1500	AV1 Image (IVF container)	image/avif	AVIF, AVIFS	adRASTERIMAGE	
VP8_IVF_Fmt	1570	1501	VP8 Video (IVF container)		VP8	adMOVIE	
HPROF_Fmt	1571	1502	HPROF Java Profiler document	application/vnd.java.hprof	HPROF	adMISC	
XLIFF_Compressed_Fmt	1572	1503	XML Localization Interchange File Format compressed (XLIFF)	application/xliff+zip	XLZ	adWORDPROCESSOR	
Scenarist_Caption_Fmt	1573	1504	Scenarist Closed Caption document		SCC	adWORDPROCESSOR	
SubRip_Text_Fmt	1574	1505	SubRip Text (STT) subtitles document		SRT	adWORDPROCESSOR	
EBU_Subtitling_Fmt	1575	1506	EBU Subtitling data exchange format		STL	adWORDPROCESSOR	
Apache_ORC_Fmt	1576	1507	Apache ORC (Optimized Row Columnar) data		ORC	adDATABASE	orcsr
NES_Sound_Fmt	1577	1508	NES Sound File		NSF	adSOUND	
IW13_IWA_Fmt	1578	1509	Apple iWork 2013 IWA document		IWA	adMISC	
BioRad_Image_Fmt	1579	1510	BioRad confocal image		PIC	adSCIENTIFIC	
NIfTI_Fmt	1580	1511	NIfTI (NII) neuroimaging document		NII	adSCIENTIFIC	
MRC_DV_Fmt	1581	1512	MRC Deltavision (DV) / Priism image		DV	adSCIENTIFIC	
MRC_CCP4_Fmt	1582	1513	MRC CCP4 2014 image		MRC	adSCIENTIFIC	
ECAT_PET_Fmt	1583	1514	ECAT medical PET image		V	adSCIENTIFIC	
OME_XML_Fmt	1584	1515	Open Microscopy Environment (OME) XML document		XML	adSCIENTIFIC	
Panasonic_RAW_Fmt	1585	1516	Panasonic RAW or Leica RWL image	image/x-panasonic-raw	RAW, RWL	adRASTERIMAGE	
Panasonic_RW2_Fmt	1586	1517	Panasonic RW2 image	image/x-panasonic-rw2	RW2	adRASTERIMAGE	
FujiFilm_RAF_Fmt	1587	1518	FujiFilm RAF image	image/x-fuji-raf	RAF	adRASTERIMAGE	
Olympus_ORF_Fmt	1588	1519	Olympus ORF image	image/x-olympus-orf	ORF	adRASTERIMAGE	
HEVC_Fmt	1589	1520	High Efficiency Video Coding (HEVC) MP4 document	video/h265	HEVC, H265	adMOVIE	
PAM_Fmt	1590	1521	Portable Arbitrary Map (PAM) image	image/x-portable-arbitrarymap	PAM	adRASTERIMAGE	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Paris_Audio_Fmt	1591	1522	Paris Audio Format		FAP, PAF	adSOUND	
Calendar_Creator_Fmt	1592	1523	Broderbund Calendar Creator document (v4+)		CC3, CE3, CC5, BCC	adSCHEDULE	
IWork_2013_Protected_Fmt	1593	1524	iWork 2013 password-protected document		PAGES, NUMBERS, KEY	adWORDPROCESSOR	
Corel_Wavelet_WVL_Fmt	1594	1525	Corel Wavelet WVL image		WVL	adRASTERIMAGE	
Corel_Wavelet_WI_Fmt	1595	1526	Corel Wavelet WI image		WI	adRASTERIMAGE	
Corel_Painter_RIF_Fmt	1596	1527	Corel Painter RIFF image		RIF	adRASTERIMAGE	
OmniPage_MET_Fmt	1597	1528	Caere OmniPage MET document		MET	adMISC	
OmniPage_OPD_Fmt	1598	1529	Caere OmniPage OPD document		OPD	adMISC	
GPS_Exchange_Fmt	1599	1530	GPS Exchange Format	application/gpx+xml	GPX	adGIS	
GL_Transmission_Fmt	1600	1531	GL Transmission Text Format	model/gltf+json	GLTF	adCAD	
CorelChart_Fmt	1601	1532	CorelChart document		CCH	adVECTORGRAPHIC	
LocoScript_PCW_Fmt	1602	1533	LocoScript document for Amstrad PCW			adWORDPROCESSOR	
LocoScript_DOS_Fmt	1603	1534	LocoScript document for MS-DOS			adWORDPROCESSOR	
IWork_2005_Protected_Fmt	1604	1535	iWork 2005-2009 password-protected document		PAGES, NUMBERS, KEY	adWORDPROCESSOR	
JAR_Pack_Fmt	1605	1536	Java Archive compressed with pack200	application/x-java-pack200	PACK	adENCAPSULATION	
GDIFF_Fmt	1606	1537	GDIFF (Generic Diff) document	application/gdiff		adMISC	
AFP_Fmt	1607	1538	IBM Advanced Function Presentation (AFP) image	application/vnd.ibm.modcap	AFP	adRASTERIMAGE	
NSIF_Fmt	1608	1539	NATO Secondary Image Format (NSIF) image		NSF	adRASTERIMAGE	
XSL_FO_Fmt	1609	1540	XSL Formatting Object (XSL-FO)		FO, XSLFO	adWORDPROCESSOR	xmlsr
Consolidated_CDA_Fmt	1610	1541	Consolidated CDA document		XML	adWORDPROCESSOR	xmlsr
WebAssembly_Binary_Fmt	1611	1542	WebAssembly (WASM) binary-code	application/wasm	WASM	adEXECUTABLE	
Visual_Studio_SDF_Fmt	1612	1543	Microsoft Visual Studio browsing database (sdf) file		SDF	adSWDEV	
MS_Pocket_Word_PocketPC_Fmt	1613	1544	Microsoft Pocket Word for Pocket PC		PSW, PWI	adWORDPROCESSOR	
PEA_Fmt	1614	1545	PEA (Pack, Encrypt, Authenticate) archive		PEA	adENCAPSULATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
MS_Pocket_Excel_PocketPC_Fmt	1615	1546	Microsoft Pocket Excel for Pocket PC		PXL	adSPREADSHEET	
TTML_Fmt	1616	1547	Timed Text Markup Language (TTML) document		TTML	adWORDPROCESSOR	
Visual_SourceSafe_SCC_Fmt	1617	1567	Microsoft Visual SourceSafe SCC (Source Code Control) file		SCC	adMISC	
NetBeans_Profiler_Fmt	1618	1548	Java NetBeans Profiler snapshot		NPS	adSWDEV	
Mac_Alias_Fmt	1619	1549	Mac OS alias file			adMISC	
Firebird_DB_Fmt	1620	1550	Firebird database		FDB	adDATABASE	
InterBase_DB_Fmt	1621	1551	InterBase database		GDB	adDATABASE	
LZip_Fmt	1622	1552	lzip compressed archive	application/lzip	LZ	adENCAPSULATION	
UltraCompressor_Fmt	1623	1553	UltraCompressor II archive		UC2	adENCAPSULATION	
PostgreSQL_Filenode_Fmt	1624	1554	PostgreSQL mapped relation file (pg_filenode.map)		MAP	adDATABASE	
Zebra_Metafile_Fmt	1625	1555	Zoner Zebra Metafile image		ZBR	adVECTORGRAPHIC	
Kodak_Cineon_Fmt	1626	1556	Kodak Cineon image		CIN	adRASTERIMAGE	
Apple_Image2_Fmt	1627	1557	Apple iOS Image2 document		IMG2	adOS	
Apple_Image3_Fmt	1628	1558	Apple iOS Image3 document		IMG3	adOS	
Apple_Image4_Fmt	1629	1559	Apple iOS Image4 document		IMG4, IM4M	adOS	
Apple_EFI_Image_Fmt	1630	1560	Apple EFI Image		EFIRES	adOS	
Secure_Capsule_Fmt	1631	1561	MacOS Secure Capsule firmware update		SCAP	adOS	
Compact_Font_Fmt	1632	1562	Adobe Compact Font Format (CFF)	application/font-cff	CFF	adFONT	
QML_Cached_Fmt	1633	1563	QML Cached document		QMLC	adSWDEV	
KV_Mail_Subfile_Fmt	1634	1564	Internal mail file produced by KeyView extraction from a mail container format		MAIL	adWORDPROCESSOR	afsr
JSON_Fmt	1635	1565	JSON document	application/json	JSON	adWORDPROCESSOR	
DesignPro_Fmt	1636	1566	Avery DesignPro document		ZDL, ZDP	adPRESENTATION	
Edraw_Max_Fmt	1637	1568	Edraw Max document		EDDX	adPRESENTATION	
ActivInspire_Fmt	1638	1569	ActivInspire flipchart document		FLIPCHART	adPRESENTATION	
ActivStudio_Fmt	1639	1570	ActivStudio and ActivPrimary document		FLP	adPRESENTATION	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Gravit_Designer_Fmt	1640	1571	Gravit Designer document		GVDESIGN	adVECTORGRAPHIC	
SANM_Fmt	1641	1572	LucasArts Smush SANM animation		SNM, ZNM	adANIMATION	
ICEDraw_Fmt	1642	1573	iCEDraw character graphics image		IDF	adRASTERIMAGE	
MS_Equation_Fmt	1643	1574	Microsoft Equation Editor object			adWORDPROCESSOR	
Affinity_Fmt	1644	1575	Affinity Photo/Publisher/Designer document		AFPHOTO, AFPUB, AFDESIGN, AFTEMPLATE	adRASTERIMAGE	
IOS_App_Store_Package_Fmt	1645	1576	iOS App Store Package		IPA	adENCAPSULATION	
Minitab_Worksheet_Fmt	1646	1577	Minitab worksheet v5-6		MTW	adSCIENTIFIC	
Minitab_Worksheet_12_Fmt	1647	1578	Minitab worksheet v12-13		MTW	adSCIENTIFIC	
Minitab_Worksheet_14_Fmt	1648	1579	Minitab worksheet v14-18		MTW	adSCIENTIFIC	
Minitab_Worksheet_19_Fmt	1649	1580	Minitab worksheet v19-		MWX	adSCIENTIFIC	
Minitab_Project_Fmt	1650	1581	Minitab project up to v18		MPJ	adSCIENTIFIC	
Minitab_Project_19_Fmt	1651	1582	Minitab project v19-		MPX	adSCIENTIFIC	
NIST_ITL_Fmt	1652	1583	NIST-ITL standard data		XML	adSCIENTIFIC	
Silo_SIA_Fmt	1653	1584	Nevercenter Silo 3D ASCII model		SIA	adCAD	
Silo_SIB_Fmt	1654	1585	Nevercenter Silo 3D binary model		SIB	adCAD	
XCBF_Fmt	1655	1586	XML Common Biometric Format		XML	adSCIENTIFIC	
Zoner_Draw_OLE_Fmt	1656	1587	Zoner Draw / Zoner Callisto Metafile (ZMF) version 2-3		ZMF	adVECTORGRAPHIC	
Zoner_Photo_Studio_Fmt	1657	1588	Zoner Photo Studio document		ZPS	adRASTERIMAGE	
Calligra_Plan_Fmt	1658	1589	Calligra Plan document	application/x-vnd.kde.plan	PLAN	adSCHEDULE	
Symbol_Dynamics_EXP5_Fmt	1659	1590	Symbol Dynamics EXP v5+ document		WXP	adWORDPROCESSOR	stringssr
REX2_Fmt	1660	1591	REX2 audio file		RX2	adSOUND	
WPS_Office_WP_Fmt	1661	1592	Kingsoft WPS Office Writer	application/wps-office.wps	WPS, DOC	adWORDPROCESSOR	mw8sr
WPS_Office_PG_Fmt	1662	1593	Kingsoft WPS Office Presentation	application/wps-office.dps	DPS, PPT	adPRESENTATION	kpp97rdr
WPS_Office_SS_Fmt	1663	1594	Kingsoft WPS Office Spreadsheet	application/wps-office.et	ET, XLS	adSPREADSHEET	xlssr
MS_InfoPath_Fmt	1664	1595	Microsoft InfoPath document		XSN	adENCAPSULATION	
MS_InfoPath_XSF_Fmt	1665	1596	Microsoft InfoPath form definition		XSF	adWORDPROCESSOR	
PerfectWorks_Fmt	1666	1597	Novell PerfectWorks document		WPW	adWORDPROCESSOR	
CAJ_Fmt	1667	1598	Chinese Academic Journal CAJ		CAJ	adWORDPROCESSOR	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
			document (2010-)				
CAJ2_Fmt	1668	1599	Chinese Academic Journal CAJ document (2005-2010)		CAJ	adWORDPROCESSOR	
KDH_Fmt	1669	1600	Chinese Academic Journal KDH document (2000-2005)		KDH, CAJ	adWORDPROCESSOR	
MS_DLL_Fmt	1670	1601	Microsoft Dynamic Link Library (DLL)		DLL, PYD	adLIBRARY	
Hancom_Cell_2010_Fmt	1671	1602	Hancom Office Cell 2010 document		CELL	adSPREADSHEET	
ESRI_Layer_Fmt	1672	1603	ESRI Layer file	application/x-esri-layer	LYR	adGIS	
JPEG_XL_Fmt	1673	1604	JPEG XL image	image/jxl	JXL	adRASTERIMAGE	
NES_ROM_Fmt	1674	1605	Nintendo Entertainment System (NES) ROM	application/x-nesrom	NES	adMISC	
Base64_ASCII_Fmt	1675	1606	Base64-encoded ASCII text file			adENCAPSULATION	
InDesign1_Fmt	1676	1607	Adobe InDesign v1 document	application/x-indesign	INDD	adDESKTOPPUBLSH	
HP_PCL_XL_Fmt	1677	1608	HP Printer Control Language XL (PCL XL)	application/vnd.hp-pclxl	PXL, PRN	adVECTORGRAPHIC	pxlsr
SubStation_Alpha_Fmt	1678	1609	SubStation Alpha subtitle document		SSA, ASS	adWORDPROCESSOR	
SAMI_Fmt	1679	1610	Synchronized Accessible Media Interchange (SAMI) subtitle document		SMI, SAMI	adWORDPROCESSOR	
Advanced_Authoring_Fmt	1680	1611	Advanced Authoring Format (AAF) for data interchange		AAF	adMOVIE	
MF_COBOL_Library_Fmt	1681	1612	Micro Focus COBOL library		LBR	adLIBRARY	
MF_COBOL_Intermediate_Fmt	1682	1613	Micro Focus Net Express intermediate file		INT	adLIBRARY	
MF_COBOL_Generated_Fmt	1683	1614	Micro Focus COBOL generated code file		GNT	adLIBRARY	
Autodesk_EAGLE_Fmt	1684	1615	Autodesk EAGLE library		LBR	adCAD	
Autodesk_EAGLE_XML_Fmt	1685	1616	Autodesk EAGLE XML library		LBR	adCAD	
Omnis_Studio_Fmt	1686	1617	Omnis Studio file		DF1, LBR, LBS	adDATABASE	
Seclore_Fmt	1687	1618	a Seclore-encrypted document whose format cannot be determined			adENCAPSULATION	
Acorn_Draw_Fmt	1688	1619	Acorn Draw image			adVECTORGRAPHIC	
Hadoop_Sequence_File_Fmt	1689	1620	Apache Hadoop sequence file		SEQUENCEFILE	adDATABASE	
Archicad_GSM_Fmt	1690	1621	Archicad library part (GSM) file	model/vnd.gdl	GSM	adCAD	

Format Name	Number	Category	Description	MIME Type	Extension	File Class	Readers
Autodesk_Point_Cloud_Fmt	1691	1622	Autodesk Indexed Point Cloud		PCG	adCAD	
Autodesk_ReCap_Scan_Fmt	1692	1623	Autodesk ReCap Scan		RCS	adCAD	
Autodesk_ReCap_Project_Fmt	1693	1624	Autodesk ReCap Project		RCP	adCAD	
BRL_CAD_Binary_Fmt	1694	1625	BRL-CAD binary database (v5)		G	adCAD	
Cartesian_Perceptual_Compression_Fmt	1695	1626	Cartesian Perceptual Compression image	image/cpi	CPC, CPI	adRASTERIMAGE	
Clarion_Database_Fmt	1696	1627	Clarion database		DAT	adDATABASE	
ColoRIX_Fmt	1697	1628	ColoRIX image		RIX, SCX, SCI	adRASTERIMAGE	
Compressed_ISO_Fmt	1698	1629	Compressed ISO CD image (CISO)	application/x-compressed-iso	CSO	adENCAPSULATION	
Corel_RAVE_Fmt	1699	1630	Corel R.A.V.E. animation		CLK	adANIMATION	
Clicker_eBook_Fmt	1700	1631	Crick Clicker eBook		CLK	adWORDPROCESSOR	

[1]MHT, EML, and MBX files might return either format 2, 233, or 395, depending on the text in the file. In general, files that contain fields such as **To**, **From**, **Date**, or **Subject** are considered to be email messages; files that contain fields such as **content-type** and **mime-version** are considered to be MHT files; and files that do not contain any of those fields are considered to be text files.

[2]All CAT file extensions, for example CATDrawing, CATProduct, CATPart, and so on.

[3]This format is returned only if you enable source code identification. See Source Code Identification, on page 96.

[4]This format is returned only if you enable extended source code identification. See Source Code Identification, on page 96.

File Classes

Attribute Number	Description	File class
0	No file class	AutoDetNoFormat
01	Word processor	adWORDPROCESSOR
02	Spreadsheet	adSPREADSHEET
03	Database	adDATABASE
04	Raster image	adRASTERIMAGE
05	Vector graphic	adVECTORGRAPHIC
06	Presentation	adPRESENTATION
07	Executable	adEXECUTABLE
08	Encapsulation	adENCAPSULATION
09	Sound	adSOUND
10	Desktop publishing	adDESKTOPPUBLSH
11	Outline/planning	adOUTLINE
12	Miscellaneous	adMISC
13	Mixed format	adMIXED
14	Font	adFONT
15	Time scheduling	adSCHEDULE
16	Communications	adCOMMUNICATION
17	Object module	adOBJECTMODULE
18	Library module	adLIBRARY
19	Fax	adFAXFORMAT
20	Movie	adMOVIE
21	Animation	adANIMATION
22	Source Code	adSOURCECODE
23	Computer-Aided Design	adCAD

Attribute Number	Description	File class
24	BI and analysis tools	adANALYTICS
25	Scientific data	adSCIENTIFIC
26	Geographic Info System	adGIS
27	Software Development	adSWDEV
28	Operating System	adOS

Appendix B: Document Readers

This section lists the KeyView document readers that are available to filter, export, and view supported file formats.

Key to Document Readers Table

The document readers table includes the following information.

Column	Description
Reader	The name of the reader.
Description	A description of the reader.
Filter	Shows whether KeyView can filter text from the main content of the file.
Export	Shows whether KeyView supports export to HTML, XML, and PDF.
View	Shows whether KeyView provides viewing capability.
Extract	Shows whether KeyView can extract sub-files.
Metadata	Shows whether KeyView can extract metadata (properties such as title, author, and subject).
Charset	Shows whether KeyView can detect and extract the character set. Even though a file format might be able to provide character set information, some documents might not contain character set information. Therefore, the document reader would not be able to determine the character set of the document.
H/F	Shows whether KeyView can extract headers and footers.
Associated File Formats	The file formats that are supported by the reader.

Key to Symbols

Symbol	Description
Y	The feature is supported.

Key to Symbols, continued

Symbol	Description
N	The feature is not supported.
P	Partial metadata is extracted from this format. Some non-standard fields are not extracted.
T	Only text is extracted from this format. Formatting information is not extracted.
M	Only metadata (title, subject, author, and so on) is extracted from this format. Text and formatting information are not extracted.

Document Readers

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
ActiveX components	Microsoft Visio (2013)	N	N	Y[1]	N	Y	N	N	MS_Visio_2013_Fmt
ad1sr	AD1 Evidence file	N	N	Y	Y	N	n/a	N	AD1_Fmt
afmsr	Adobe Font Metrics	Y	T	T	N	N	N	N	Adobe_Font_Metrics_Fmt
afsr	ASCII Text	Y	Y	Y	N	N	N	N	ABAP_Fmt, AMPL_Fmt, APL_Fmt, ASCII_Text_Fmt, ASN1_Fmt, ATS_Fmt, Agda_Fmt, Alloy_Fmt, Apex_Fmt, AppleScript_Fmt, Arduino_Fmt, AsciiDoc_Fmt, AspectJ_Fmt, Assembly_Fmt, Awk_Fmt, BlitzMax_Fmt, Bluespec_Fmt, Brainfuck_Fmt, Brightscript_Fmt, CLIPS_Fmt, CMake_Fmt, COBOL_Fmt, CPlusPlus_Fmt, CWeb_Fmt, C_Fmt, CartoCSS_Fmt, Ceylon_Fmt, Chapel_Fmt, Clarion_Fmt, Clean_Fmt, Clojure_Fmt, CoffeeScript_Fmt, Component_Pascal_Fmt, Cool_Fmt, Coq_Fmt, Creole_Fmt, Crystal_Fmt, Csharp_Fmt, Csound_Document_Fmt, Csound_

[1]Visio 2013 is supported in Viewing only, with the support of ActiveX components from the Microsoft Visio 2013 Viewer. Image fidelity is supported but other features, such as highlighting, are not.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
									Fmt, Css_Fmt, Cuda_Fmt, DIGITAL_ Command_Language_Fmt, DTrace_Fmt, D_Fmt, Dart_Fmt, Dockerfile_Fmt, ECL_ Fmt, E_Fmt, Eiffel_Fmt, Elm_Fmt, Emacs_ Lisp_Fmt, EmberScript_Fmt, Erlang_Fmt, Fantom_Fmt, Forth_Fmt, Fortran_Fmt, FreeMarker_Fmt, Frege_Fmt, Fsharp_Fmt, GAMS_Fmt, GAP_Fmt, GDScript_Fmt, GIS_World_File_Fmt, GLSL_Fmt, G_code_ Fmt, Game_Maker_Language_Fmt, Gnuplot_Fmt, Go_Fmt, Golo_Fmt, Gosu_ Fmt, Gradle_Fmt, GraphQL_Fmt, Graphviz_DOT_Fmt, Groovy_Fmt, HLSL_ Fmt, Hack_Fmt, Haml_Fmt, Handlebars_ Fmt, Haskell_Fmt, Hy_Fmt, IDL_Fmt, IGOR_Pro_Fmt, Idris_Fmt, Inform_7_Fmt, Ini_Fmt, Ioke_Fmt, Isabelle_Fmt, JSONiq_ Fmt, JSX_Fmt, J_Fmt, Jasmin_Fmt, Java_ Fmt, Javascript_Fmt, Jolie_Fmt, Julia_Fmt, KV_Mail_Subfile_Fmt, KiCad_Layout_Fmt, KiCad_Schematic_Fmt, Kotlin_Fmt, LFE_ Fmt, LOLCODE_Fmt, Lasso_Fmt, Limbo_ Fmt, Lisp_Fmt, LiveScript_Fmt, Lua_Fmt, MAXScript_Fmt, ML_Fmt, MSDOS_Batch_ File_Fmt, M_Fmt, Makefile_Fmt, Markdown_Fmt, Mathematica_Fmt, Matlab_Fmt, Max_Code_Fmt, Mercury_ Fmt, Modelica_Fmt, Modula_2_Fmt, Monkey_Fmt, Moocode_Fmt, NL_Fmt, NSIS_Fmt, NetLogo_Fmt, NewLisp_Fmt, Nginx_Fmt, Nix_Fmt, Nu_Fmt, OCaml_Fmt, ObjC_Fmt, ObjCpp_Fmt, ObjJ_Fmt, OpenCL_Fmt, OpenEdge_ABL_Fmt,

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
									OpenSCAD_Fmt, Ox_Fmt, Oxygene_Fmt, Oz_Fmt, PAWN_Fmt, PHP_Fmt, PLSQL_Fmt, PLpgSQL_Fmt, Pan_Fmt, Parrot_Assembly_Fmt, Pascal_Fmt, Perl_Fmt, PicoLisp_Fmt, Pike_Fmt, Pony_Fmt, Powershell_Fmt, Processing_Fmt, Prolog_Fmt, Puppet_Fmt, PureBasic_Fmt, Python_Fmt, QMake_Fmt, RAML_Fmt, RDoc_Fmt, REXX_Fmt, R_Fmt, Racket_Fmt, Ragel_Fmt, Rascal_Fmt, Rebol_Fmt, Red_Fmt, RenPy_Fmt, RenderScript_Fmt, Ring_Fmt, RobotFramework_Fmt, Ruby_Fmt, Rust_Fmt, SAS_Fmt, SGML_Fmt, SPARQL_Fmt, SQLPL_Fmt, SQL_Fmt, SaltStack_Fmt, Scala_Fmt, Scheme_Fmt, Scilab_Fmt, Scribe_Fmt, Shell_Fmt, Smalltalk_Fmt, Squirrel_Fmt, Stan_Fmt, Stata_Fmt, Stylus_Fmt, SuperCollider_Fmt, Swift_Fmt, SystemVerilog_Fmt, TSV_Fmt, TSV_Fmt, TXL_Fmt, Tcl_Fmt, Tex_Fmt, Turing_Fmt, Turtle_Fmt, TypeScript_Fmt, UrWeb_Fmt, Verilog_Fmt, Vim_script_Fmt, Visual_Basic_Fmt, WebAssembly_Fmt, WebIDL_Fmt, Wiki_Fmt, X10_Fmt, XQuery_Fmt, Xojo_Fmt, Xtend_Fmt, YAML_Fmt, YANG_Fmt, Zephir_Fmt, eC_Fmt, reStructuredText_Fmt, xBase_Fmt
aiffsr	Audio Interchange File Format	M	N	N	N	Y	N	N	AIFF_Fmt
asfsr	Advanced Systems Format (1.2)	N	N	N	N	Y	N	N	ASF_Fmt, WMA_Fmt, WMV_Fmt
assr	Applix Spreadsheets	Y	Y	Y	N	N	Y	N	Applix_Spreadsheets_Fmt

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	(4.2, 4.3, 4.4)								
avrosr[1]	Apache Avro binary format	Y	N	N	N	N	N	N	Avro_Fmt
awsr	Applix Words (3.11, 4, 4.1, 4.2, 4.3, 4.4)	Y	Y	Y	N	N	Y	Y	Applix_Words_Fmt
axsr	Applix Asterix	Y	T	T	N	N	N	N	Applix_Alis_Fmt
b1sr	B1	N	N	Y	Y	N	n/a	N	B1_Fmt
bkfsr	Microsoft Backup File	N	N	Y	Y	N	n/a	N	BKF_Fmt
bmpsr	Windows Bitmap Image	M	M	N	N	Y	N	N	BMP_Fmt
bzip2sr	Bzip2 Compressed File	N	N	Y	Y	N	n/a	N	BZIP2_Fmt
cabsr	Microsoft Cabinet File (1.3)	N	N	Y	Y	N	n/a	N	CAB_Fmt
cdsr	Convergent Technologies DEF Comm. Format	Y	T	T	N	N	N	N	CT_DEF_Fmt
cebsr[2]	Founder Chinese E-paper Basic (3.2.1)	Y	N	N	N	N	N	N	Founder_CEB_Fmt

[1]The avrosr reader is only available on certain platforms (see avrosr in the platform differences section).
[2]The cebsr reader is only available on certain platforms (see cebsr in the platform differences section). Because of known security vulnerabilities in the third party library used for this format, cebsr is disabled in formats.ini and needs to be explicitly enabled if you wish to use it.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
chmsr	Microsoft Compiled HTML Help (3)	N	N	Y	Y	N	n/a	N	CHM_Fmt
csvsr	CSV (Comma Separated Values)	Y	Y	Y	N	N	N	N	CSV_Fmt
dbfsr	dBase Database (III+, IV)	Y	Y	Y	N	N	N	N	dBase_Fmt
dbxsr	Microsoft Outlook Express DBX Message Database (5.0, 6.0)	N	N	Y	Y	Y	Y	N	MS_OEDBX_Fmt
dcasr	IBM DCA/RFT (Revisable Form Text) (SC23-0758-1)	Y	Y	Y	N	N	Y	N	DCA_RFT_Fmt
dcmsr	Digital Imaging & Communications in Medicine (DICOM)	M	N	N	N	Y	N	N	Dicom_Fmt
difsr	Data Interchange Format	Y	Y	Y	N	N	N	N	DIF_SpreadSheet_Fmt
dmgsr	Mac Disk Copy Disk Image	N	N	Y	Y	N	n/a	N	DMG_Fmt
dw4sr	DisplayWrite (4)	Y	Y	Y	N	N	Y	N	IBM_Display_Write_Fmt
dxlsr	IBM Domino Data in XML format[1]	N	N	Y	Y	Y	N	N	Lotus_Domino_DXL_Fmt

[1]Supports non-encrypted embedded files only.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
emlsr[1]	Text Mail (MIME) / Microsoft Outlook Express (Windows 6, MacIntosh 5)	Y	T	T	Y	Y	Y	N	SMTP_Fmt
emxsr	Legato EMailXtender Archives	N	N	Y	Y	N	n/a	N	EMX_Fmt
encase2sr	Expert Witness Compression Format (EnCase) (7)	N	N	Y	Y	N	n/a	N	EnCase_Fmt
encasesr	Expert Witness Compression Format (EnCase) (6)	N	N	Y	Y	N	n/a	N	EnCase_Fmt
entsr	Microsoft Entourage Database (2004)	N	N	Y	Y	Y	Y	N	ENT_Fmt
epubsr	Open Publication Structure eBook (2.0, 3.0)	Y	Y	Y	N	Y	Y	N	Epub_Fmt, iBooks_Fmt
exesr	MSDOS/Windows Executable	N	N	Y	N	N	n/a	N	MS_Executable_Fmt
foliosr	Folio Flat File (3.1)	Y	Y	Y	N	Y	Y	Y	Folio_Flat_Fmt
gdsiisr	GDSII data format	Y	T	T	N	N	N	N	GDSII_Fmt
gifsr	GIF (87, 89)	M	M	N	N	Y	N	N	GIF_87a_Fmt, GIF_89a_Fmt

[1]This reader supports both clear signed and encrypted S/MIME. KeyView supports S/MIME for PST, EML, MBX, and MSG files.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
gitpacksr	Git Packfile	N	N	Y	Y	N	n/a	N	Git_Packfile_Fmt
gwfssr	GroupWise FileSurf email	N	N	Y	Y	Y	N	N	GWFS_Email_Fmt
hl7sr	Health level7 message (2.0)	Y	Y	Y	N	Y	Y	N	Hl7_Fmt
htmlsr[1]	HTML	N	N	N	N	Y	N	N	MS_Excel_HTML_Fmt, MS_Word_HTML_Fmt
htmsr	HTML/XHTML (3, 4)	Y	Y	Y	N	Y[2]	Y	N	HTML_Fmt, Netscape_Bookmark_File_Fmt
hwposr	Haansoft Hangul HWP (2002, 2005, 2007, 2010)	Y	Y	Y	Y	Y	Y	N	HWP_Fmt
hwpsr	Haansoft Hangul HWP (97)	Y	Y	Y	N	Y	Y	N	HWP_Fmt
hwpxsr	Haansoft Hangul HWPX	Y	T	T	N	N	Y	N	HWPX_Fmt
ichatsr	Apple iChat Log (1, AV 2, AV 2.1, AV 3)	Y	Y	Y	N	N	N	N	Apple_iChat_Fmt
icssr	Microsoft Outlook iCalendar (1.0, 2.0)	N	N	Y	Y	Y	Y	N	ICS_Fmt
isosr	ISO-9660 CD Disc Image	N	N	Y	Y	N	n/a	N	ISO_Fmt

[1]The htmlsr reader is only available on certain platforms (see htmlsr in the platform differences section).
[2]HTML only supports partial metadata extraction

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
iwss13sr[1]	Apple iWork Numbers ('13, '16, '18, iCloud 2018)	Y	T	T	N	N	Y	N	IWSS13_Fmt
iwsssr	Apple iWork Numbers ('08, '09)	Y	Y	Y	N	Y	Y	N	IWSS_Fmt
iwwp13sr[2]	Apple iWork Pages ('13, '16, '18, iCloud 2018)	Y	T	T	N	N	N	N	IWWP13_Fmt
iwwpsr	Apple iWork Pages ('08, '09)	Y	Y	Y	N	Y	Y	N	IWWP_Fmt
jp2000sr	JPEG (2000)	M	M	N	N	Y	N	N	ISO_JPEG2000_JP2_Fmt, ISO_JPEG2000_JPM_Fmt, ISO_JPEG2000_JPX_Fmt, JPEG_2000_JP2_File_Fmt, JPEG_2000_PGX_Fmt, Motion_JPEG_2000_Fmt
jpgsr	JPEG Interchange Format (JFIF)	M	M	N	N	Y	N	N	JPEG_File_Interchange_Fmt
jtdsr	JustSystems Ichitaro (8 to 2013, 2018)	Y	Y	Y	N	P	N	Y	ICHITARO_Compr_Fmt, ICHITARO_Fmt
kpagrdr	Applix Presents/Graphics (4.0, 4.2, 4.3, 4.4)	Y	Y	Y	N	N	N	N	Applix_Graphics_Fmt

[1]The iwss13sr reader is only available on certain platforms (see iwss13sr in the platform differences section).
[2]The iwwp13sr reader is only available on certain platforms (see iwwp13sr in the platform differences section).

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
kpanirdr	Windows Animated Cursor	N	Y	Y	N	N	N	N	Windows_Animated_Cursor_Fmt
kpbmprdr	Windows Bitmap Image	Y[1]	Y	Y	N	N	N	N	BMP_Fmt
kpCATrdr	CATIA formats (5)	Y	N	N	N	Y	N	N	CATIA_Fmt
kpcdrrdr	CorelDRAW[2] (through 9.0, 10, 11, 12, X3)	N	Y	Y	N	N	N	N	Corel_Draw_Fmt
kpcgmrdr[3]	Computer Graphics Metafile	Y	Y	Y	N	N	N	N	CGM_Binary_Fmt, CGM_Character_Fmt, CGM_ClearText_Fmt
kpchtrdr	Microsoft Excel (2-7) and Lotus 1-2-3 Charts (2-5)	N	Y	Y	N	N	N	N	
kpdcxrdr	DCX Fax System	N	Y	Y	N	N	N	N	DCX_Fmt
kpDWGrdr[4]	Autodesk AutoCAD DWG Drawing (R13 onwards)	Y	Y	Y	N	Y	Y	N	AutoDesk_DWG_Fmt
kpDXFrdr[5]	Autodesk AutoCAD	Y	Y	Y	N	Y	Y	N	AutoCAD_DXF_Binary_Fmt, AutoCAD_

[1]Filtering is supported through OCR, which is only available on certain platforms (see Optical Character Recognition in the platform differences section), and is licensed separately.
[2]CDR/CDR with TIFF header.
[3]Files with non-partitioned data are supported.
[4]The kpDWGrdr reader exists to provide DWG support on platforms where kpODArdr is not available (see kpDWGrdr in the platform differences section), but does not support graphics for versions after 2004 or text for versions after 2013.
[5]The kpDXFrdr reader exists to provide DXF support on platforms where kpODArdr is not available (see kpDXFrdr in the platform differences section), but does not support graphics for versions after 2004.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	DXF Drawing (R13 onwards)								DXF_Text_Fmt
kpemfrdr	Enhanced Metafile	Y	Y	Y	N	Y	N	N	Enhanced_Metafile_Fmt
kpepsrdr	Encapsulated PostScript (raster) (TIFF header)	N	Y	Y	N	N	N	N	EPSF_Fmt, Preview_EPSF_Fmt
kpGFLrdr	Omni Graffle	Y	N	N	N	Y	Y	N	Omni_Graffle_XML_Fmt
kpgifrdr	GIF (87, 89)	Y[1]	Y	Y	N	N	N	N	GIF_87a_Fmt, GIF_89a_Fmt
kpicordr	Windows Icon Cursor	N	Y	Y	N	N	N	N	Windows_Icon_Fmt
kpIWPG13rdr[2]	Apple iWork Keynote ('13, '16, '18, iCloud 2018)	Y	T	N	N	N	N	N	IWPG13_Fmt
kpIWPGrdr	Apple iWork Keynote (2, 3, '08, '09)	Y	Y	Y	N	Y	Y	N	IWPG13_Fmt, IWPG_Fmt
kpJBIG2rdr	JBIG2	Y[3]	Y	Y	N	N	N	N	JBIG2_Fmt
kpjp2000rdr	JPEG (2000)	Y[4]	Y	Y	N	N	N	N	ISO_JPEG2000_JP2_Fmt, ISO_

[1]Filtering is supported through OCR, which is only available on certain platforms (see Optical Character Recognition in the platform differences section), and is licensed separately.
[2]The kpIWPG13rdr reader is only available on certain platforms (see kpIWPG13rdr in the platform differences section).
[3]Filtering is supported through OCR, which is only available on certain platforms (see Optical Character Recognition in the platform differences section), and is licensed separately.
[4]Filtering is supported through OCR, which is only available on certain platforms (see Optical Character Recognition in the platform differences section), and is licensed separately.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
									JPEG2000_JPM_Fmt, ISO_JPEG2000_JPX_Fmt, JPEG_2000_JP2_File_Fmt, JPEG_2000_PGX_Fmt, Motion_JPEG_2000_Fmt
kpjpgrdr	JPEG Interchange Format (JFIF)	Y[1]	Y	Y	N	N	N	N	JPEG_File_Interchange_Fmt
kpmacrdr	MacPaint	N	Y	Y	N	N	N	N	MacPaint_Fmt
kpmsordr	Microsoft Office Drawing	N	Y	Y	N	N	N	N	MS_Office_Drawing_Fmt
kpODArdr[2]	ODA	Y	Y	Y	N	Y	Y	N	AutoCAD_DXF_Binary_Fmt, AutoCAD_DXF_Text_Fmt, AutoDesk_DWG_Fmt
kpodfrdr	OASIS Open Document Format (1, 2[3])	Y	Y	Y	Y[4]	Y	Y	N	ODF_Drawing_Fmt, ODF_Drawing_Template_Fmt, ODF_Presentation_Fmt, ODF_Presentation_Template_Fmt, SO_Drawing_XML_Fmt, SO_Presentation_XML_Fmt
kpp40rdr	Microsoft PowerPoint (98)	Y	Y	Y	N	P[5]	N	N	PowerPoint_Win_Fmt
kpp95rdr	Microsoft PowerPoint	Y	Y	Y	N	P	Y	N	PowerPoint_95_Fmt

[1]Filtering is supported through OCR, which is only available on certain platforms (see Optical Character Recognition in the platform differences section), and is licensed separately.
[2]The kpODArdr reader is only available on certain platforms (see kpODArdr in the platform differences section).
[3]Generated by OpenOffice Impress 2.0, StarOffice 8 Impress, and IBM Lotus Symphony Presentation 3.0.
[4]Supported using the olesr embedded objects reader.
[5]Microsoft PowerPoint Windows only

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	Windows (95)								
kpp97rdr	Microsoft PowerPoint (97-2004)	Y	Y	Y	N	P	Y	Y[1]	PowerPoint_2000_Fmt, PowerPoint_97_Fmt, WPS_Office_PG_Fmt
kppctrdr	Macintosh Raster / QuickDraw (2)	N	Y	Y	N	N	N	N	Mac_PICT_Fmt
kppcxrdr	PC PaintBrush (3)	N	Y	Y	N	N	N	N	PC_Paintbrush_Fmt
kppdf2rdr[2]	Adobe PDF (1.1 to 1.7, 2.0)	N	N	Y	N	N	N	N	PDF_Fmt
kppdfrdr	Adobe PDF (1.1 to 1.7, 2.0)	N	Y	Y	N	N	N	N	PDF_Fmt
kppicrdr	Lotus PIC	Y	Y	Y	N	N	N	N	Lotus_PIC_Fmt
kppngrdr	Portable Network Graphics	Y[3]	Y	Y	N	N	N	N	APNG_Fmt, PNG_Fmt
kpppxrdr	Microsoft PowerPoint Windows XML (2007 onwards)	Y	Y	Y	Y	Y	Y	Y	MS_PPT_2007_Fmt, MS_PPT_Macro_2007_Fmt
kpprerdr	Lotus Freelance Graphics 2 (2)	Y	Y	Y	N	N	N	N	Freelance_OS2_Fmt, Freelance_Win_Fmt

[1]Microsoft PowerPoint Windows only
[2]kppdf2rdr is an alternate graphic-based reader that produces high-fidelity output but does not support other features such as highlighting or text searching. The kppdf2rdr reader is only available on certain platforms (see kppdf2rdr in the platform differences section).
[3]Filtering is supported through OCR, which is only available on certain platforms (see Optical Character Recognition in the platform differences section), and is licensed separately.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
kpprzrdr	Lotus Freelance Graphics (96, 97, 98, R9, 9.8)	Y	Y	Y	N	N	N	N	Freelance_96_Fmt, Freelance_97_Fmt, Freelance_DOS_Fmt
kpsddrdr	StarOffice Impress (3, 4, 5)	Y	T	N	N	N	N	N	SO_Presentation_Fmt
kpsdwrdr	Lotus AMIDraw Graphics	N	Y	Y	N	N	N	N	Ami_Pro_Draw_Fmt, SO_Text_Fmt
kpsgirdr	SGI RGB Image	N	Y	Y	N	N	N	N	SGI_Image_Fmt
kpshwrdr	Corel Presentations (6, 7, 8, 9, 10, 11, 12, X3)	Y	Y	Y	N	N	N	N	Corel_Presentations_Fmt
kpsunrdr	Sun Raster Image	N	Y	Y	N	N	N	N	Sun_Raster_Fmt
kpTGArdr	Truevision Targa (2)	N	Y	Y	N	N	N	N	Targa_Fmt
kptifrdr	TIFF Tagged Image File (through 6.0[1])	Y[2]	Y	Y	N	N	N	N	TIFF_Fmt
kpUGrdr	Unigraphics (UG) NX	Y	N	N	N	N	N	N	Unigraphics_NX_Fmt
kpVSD2rdr	Microsoft Visio (4, 5,	Y	Y	Y	N	Y	Y	N	MS_Visio_Fmt

[1]The following compression types are supported: no compression, CCITT Group 3 1-Dimensional Modified Huffman, CCITT Group 3 T4 1-Dimensional, CCITT Group 4 T6, LZW, JPEG (only Gray, RGB and CMYK color space are supported), and PackBits.
[2]Filtering is supported through OCR, which is only available on certain platforms (see Optical Character Recognition in the platform differences section), and is licensed separately.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	2000, 2002, 2003, 2007, 2010[1])								
kpVSDXrdr	Microsoft Visio (2013)	Y	Y	Y	Y	Y	Y	N	MS_Visio_2013_Fmt, MS_Visio_2013_Macro_Fmt, MS_Visio_2013_Stencil_Fmt, MS_Visio_2013_Stencil_Macro_Fmt, MS_Visio_2013_Template_Fmt, MS_Visio_2013_Template_Macro_Fmt
kpwg2rdr	WordPerfect Graphics 2 (2, 7)	N	Y	Y	N	N	N	N	WordPerfect_Graphics_Fmt
kpwmfrdr	Windows Metafile (3)	Y[2]	Y	Y	N	N	N	N	Windows_Metafile_Fmt, Windows_Metafile_NoHdr_Fmt
kpwpgrdr	WordPerfect Graphics 1 (1)	N	Y	Y	N	N	N	N	WordPerfect_Graphics_Fmt
kpXFDLrdr	Extensible Forms Description Language	Y	Y	Y	N	Y	Y	N	XFDL_Fmt
kvgz	GZIP archive (2)	N	N	Y	N	N	n/a	N	GZ_Compress_Fmt
kvgzsr	GZIP archive (2)	N	N	N	Y	N	n/a	N	GZ_Compress_Fmt
kvhqxsr	BinHex	N	N	Y	Y	N	n/a	N	BinHex_Fmt
kvzee	UNIX Compress	N	N	Y	N	N	n/a	N	Compress_Fmt

[1]Viewing and Export use the graphic reader, kpVSD2rdr for Microsoft Visio 2003, 2007, and 2010, and vsdsr for all earlier versions. Image fidelity in Viewing and Export is therefore only supported for versions 2003 and above. Filter uses the graphic reader kpVSD2rdr for Microsoft Visio 2003, 2007, and 2010, and vsdsr for all earlier versions.
[2]Windows Metafiles can contain both raster images (KeyView file class 4) and vector graphics (KeyView file class 5). Filtering is supported only for vector graphics (class 5).

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
kvzeesr	UNIX Compress	N	N	N	Y	N	n/a	N	Compress_Fmt
l123sr	Lotus 1-2-3 (96, 97, R9, 9.8)	Y	Y	Y	N	P	Y	N	Lotus_123_97_Fmt, Lotus_123_Format_Fmt, Lotus_123_R9_Fmt
lasr	Lotus AMI Pro and Write Plus (2, 3)	Y	Y	Y	N	P[1]	Y[2]	Y	Ami_Pro_Fmt, Ami_Pro_StyleSheet_Fmt
lwpsr[3]	Lotus Word Pro and SmartMaster (96, 97, R9)	Y	Y	Y	N	P[4]	N	Y[5]	Lotus_Word_Pro_96_Fmt, Lotus_Word_Pro_97_Fmt
lyxsr	LyX Word Processor	Y	T	T	N	N	N	N	LyX_Fmt
lzhsr	Microsoft LZH Compressed Folder	N	N	N	Y	N	n/a	N	LZH_Fmt
macbinsr	MacBinary	N	N	Y	Y	N	n/a	N	MacBinary_Fmt
mbsr	Microsoft Word Macintosh (4, 5, 6, 98)	Y	Y	Y	N	Y	N	Y	MS_Word_Mac_4_Fmt, MS_Word_Mac_Fmt
mbxsr[6]	Text Mail (MIME),	Y[8]	N	T	Y	Y	Y	N	MIME_Fmt

[1]Lotus AMI Pro only
[2]Lotus AMI Pro only
[3]The lwpsr reader is only available on certain platforms (see lwpsr in the platform differences section).
[4]Lotus Word Pro only
[5]Lotus Word Pro only
[6]This reader supports both clear signed and encrypted S/MIME. KeyView supports S/MIME for PST, EML, MBX, and MSG files.

[8]Text Mail only

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	Microsoft Outlook Express (Windows 6, MacIntosh 5), Mailbox[1] (Thunderbird 1.0, Eudora 6.2)								
MCI	Microsoft Media Control Interface	N	N	Y	N	N	N	N	AIFF_Fmt, AU_Audio_Fmt, ISO_QuickTime_Fmt, MIDI_Audio_Fmt, MPEG_Audio_Fmt, MS_Video_Fmt, MS_WAVE_Audio_Fmt, Mobile_QuickTime_Fmt, QuickTime_Fmt
mdbsr	Microsoft Access (95 onwards)	Y	T	T	N	N	Y[2]	N	MS_Access_2000_Fmt, MS_Access_2007_Fmt, MS_Access_95_Fmt, MS_Access_97_Fmt, MS_Access_Fmt
mhtsr	MIME HTML (MHTML)	Y	Y	Y	N	Y	Y	N	MHT_Fmt
mifsr	Adobe FrameMaker Interchange Format (5, 5.5, 6, 7)	Y	Y	Y	N	N	Y	N	Maker_Interchange_Fmt
misr	Microsoft Word Windows (1.0, 2.0)	Y	Y	Y	N	N	N	Y	MS_Word_Win_Fmt
mp3sr	MPEG-1 Audio layer3 (ID3 v1 and v2)	M	M	Y	N	Y	N	N	MPEG_Audio_Fmt

[1]KeyView supports MBX files created by Eudora Email and Mozilla Thunderbird. MBX files created by other common mail applications are typically filtered, converted, and displayed.
[2]Charset is not supported for Microsoft Access 95 or 97.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
mpeg4sr	MPEG video	M	N	N	N	Y	N	N	Adobe_Flash_Audio_Book_Fmt, Adobe_Flash_Audio_Fmt, Adobe_Flash_Protected_Video_Fmt, Adobe_Flash_Video_Fmt, Audible_Audiobook_Fmt, ISO_3GPP2_Fmt, ISO_3GPP_Fmt, ISO_IEC_MPEG_4_Fmt, KDDI_Video_Fmt, MPEG4_AVC_Fmt, MPEG4_M4A_Fmt, MPEG4_M4B_Fmt, MPEG4_M4P_Fmt, MPEG4_M4V_Fmt, MPEG4_Sony_PSP_Fmt, MPEG_21_Fmt, NTT_MPEG4_Fmt, Nero_MPEG4_Audio_Fmt, QuickTime_Fmt, Sony_XAVC_Fmt
mppsr	Microsoft Project (2000 onwards)	Y	Y	Y	Y	Y	Y	N	MS_Project_2000_Fmt, MS_Project_2007_Fmt, MS_Project_41_Fmt, MS_Project_4_Fmt, MS_Project_98_Fmt
msgsr[1]	Microsoft Outlook (97 onwards), Documentum EMCMF	Y[2]	T[3]	Y[4]	Y	Y	Y[5]	N	EMCMF_Fmt, MS_Outlook_Fmt
mspubsr	Microsoft Publisher (98 to 2016)	Y	T	T	Y	Y	Y	N	MS_Publisher_98_Fmt, MS_Publisher_Fmt
msw6sr	Microsoft Works Word Processor for Windows (6, 2000)	Y	Y	Y	N	N	N	Y	MS_Works_Win_WP_Fmt

[1]This reader supports both clear signed and encrypted S/MIME. KeyView supports S/MIME for PST, EML, MBX, and MSG files.

[2]Except Documentum EMCMF
[3]Except Documentum EMCMF
[4]For Outlook this is Text only
[5]Returns "Unicode" character set for Outlook version 2003 and up, and "Unknown" character set for previous versions.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
mswsr	Microsoft Works Word Processor for Windows (1, 2, 3, 4)	Y	Y	Y	N	N	N	Y	MS_Works_Win_WP_Fmt
multiarcsr[1]	Compressed formats	N	N	Y[2]	Y	N	n/a	N	ARJ_Fmt, RAR5_Fmt, XZ_Fmt
mw6sr	Microsoft Word for Windows (6, 7, 8, 95)	Y	Y	Y	N	Y	Y	Y	MS_Word_95_Fmt
mw8sr	Microsoft Word (97-2004)	Y	Y	Y	Y[3]	Y	Y	Y[4]	MS_Word_2000_Fmt, MS_Word_97_Fmt, WPS_Office_WP_Fmt
mwsr	Microsoft Word PC (4-6) and Windows Write (1-3)	Y	Y	Y	N	N	Y[5]	Y[6]	MS_Windows_Write_Fmt, MS_Word_PC_Driver_Fmt, MS_Word_PC_Fmt, MS_Word_PC_Glossary_Fmt, MS_Word_PC_Misc_Fmt, MS_Word_PC_StyleSheet_Fmt
mwssr	Microsoft Works Spreadsheet (2, 3, 4)	Y	Y	Y	N	N	Y	N	MS_Works_DOS_SS_Fmt, MS_Works_Mac_SS_Fmt, MS_Works_Win_SS_Fmt
mwxsr	Microsoft Word XML (2007 onwards)	Y	Y	Y	Y	Y	Y	Y	MS_Word_2007_Flat_XML_Fmt, MS_Word_2007_Fmt, MS_Word_Macro_2007_Fmt

[1]The multiarcsr reader is only available on certain platforms (see multiarcsr in the platform differences section). 7zip is supported with the multiarcsr reader on some platforms for Extract.
[2]7-zip and SUN PEX archives only
[3]Supported using the embedded objects reader olesr.
[4]Microsoft Word for Windows only
[5]Microsoft Windows Write only
[6]Microsoft Word PC only

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
nnsr	NBI OASys Net Archive	Y	T	T	N	N	N	N	NBI_Net_Archive_Fmt
nsfsr[1]	IBM Lotus Notes database (4, 5, 6.0, 6.5, 7.0, 8.0)	N	N	Y	Y	Y	N	N	Lotus_Notes_NSF_Fmt
oa2sr	Fujitsu Oasys (7)	Y	Y	Y	N	P	N	N	Oasys_Fmt
odfsssr	OASIS Open Document Format (1, 2[2])	Y	Y	Y	Y[3]	Y	Y	N	ODF_Spreadsheet_Fmt, ODF_Spreadsheet_Template_Fmt
odfwpsr	OASIS Open Document Format (1, 2[4])	Y	Y	Y	Y[5]	Y	Y	Y	ODF_Text_Fmt, ODF_Text_Master_Fmt, ODF_Text_Template_Fmt, ODF_Text_Web_Fmt, SO_Text_XML_Fmt
olesr	Windows Scrap File	N	N	N	Y	Y	n/a	N	Ability_WP_OLE_Fmt, Autodesk_3ds_Max_Fmt, Crystal_Reports_Fmt, FPX_Fmt, MS_AtWork_Fax_Fmt, MS_Binder_Fmt, MicroStation_V8_DGN_Fmt, OLE_Fmt, PageMagic_Fmt, PagePlus_Fmt, PhotoDraw_Mix_Fmt, PowerPoint_Mac_Fmt, SO_Chart_Fmt, SO_Database_Fmt, SO_Math_Fmt, Scrap_Fmt, SolidWorks_Fmt, Solid_Edge_Assembly_Fmt, Solid_Edge_Part_Fmt, Solid_Edge_SheetMetal_Fmt, Windows_Installer_Fmt, Windows_

[1]The nsfsr reader is only available on certain platforms (see nsfsr in the platform differences section).
[2]Generated by OpenOffice Calc 2.0, StarOffice 8 Calc, and IBM Lotus Symphony Spreadsheet 3.0.
[3]Supported using the embedded objects reader olesr.
[4]Generated by OpenOffice Writer 2.0, StarOffice 8 Writer, and IBM Lotus Symphony Documents 3.0.
[5]Supported using the embedded objects reader olesr.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
									Installer_Patch_Fmt
olmsr	Microsoft Outlook for Macintosh (2011)	N	N	Y	Y	N	Y	N	MS_OutlookOLM_Fmt
onesr	Microsoft OneNote (2007, 2010, 2013, 2016)	Y	Y	Y	Y	N	Y	N	OneNote_Fmt
onealtsr	Microsoft OneNote Alternative Packaging Format (2007 onwards)	Y	T	T	Y	N	N	N	OneNote_Alternate_Fmt
onmsr	Legato Extender	N	N	Y	Y	Y	N	N	Legato_Extender_ONM_Fmt
oo3sr	Omni Outliner (v3, OPML, OOutline)	Y	Y	Y	N	N	Y	N	OO3_Fmt, OOUTLINE_Fmt, OPML_Fmt
orcsr[1]	Apache ORC (Optimized Row Columnar) data	Y	N	N	N	N	N	N	Apache_ORC_Fmt
parquetsr[2]	Apache Parquet Database Format	Y	N	N	N	Y	N	N	Apache_Parquet_Fmt
pbixsr	Microsoft Power BI Desktop (1.11)	Y	T	T	N	N	Y	N	MS_Power_BI_Fmt
pdf2sr[3]	Adobe PDF (1.1 to 1.7, 2.0)	Y	Y	N	Y	Y	N	N	PDF_Fmt

[1]The orcsr reader is only available on certain platforms (see orcsr in the platform differences section).
[2]The parquetsr reader is only available on certain platforms (see parquetsr in the platform differences section).
[3]The pdf2sr reader is only available on certain platforms (see pdf2sr in the platform differences section).

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
pdfsr	Adobe PDF (1.1 to 1.7, 2.0)	Y	Y	N	Y[1]	Y	Y	N	PDF_Fmt, Portfolio_PDF_Fmt
pfasr	ASCII Printer and PostScript fonts	Y	T	T	N	N	N	N	PostScript_Font_Fmt, Printer_Font_ASCII_Fmt
pffsr[2]	Microsoft Outlook Offline Storage File (97 onwards)	N	N	Y	Y	Y	Y	N	MS_OutlookOST_Fmt
pfilesr	Rights Management Services (RMS)-protected format	Y[3]	T[4]	T[5]	N	Y	N	N	RMS_Protected_Fmt
pkcs7sr[6]	PKCS #7 cryptographic format	N	N	Y	Y	N	N	N	PKCS_7_Fmt
pngsr	Portable Network Graphics	M	M	N	N	Y	N	N	PNG_Fmt
psdsr	Adobe Photoshop	N	N	N	N	Y[7]	N	N	PSD_Fmt
pstnsr	Microsoft Outlook	N	N	Y	Y	Y	Y	N	MS_OutlookPST_Fmt

[1]Includes support for extraction of subfiles from PDF Portfolio documents.
[2]The pffsr reader is only available on certain platforms (see pffsr in the platform differences section).
[3]KeyView filters only the internal redirection text. The underlying document text is not accessible without the decryption key.
[4]KeyView filters only the internal redirection text. The underlying document text is not accessible without the decryption key.
[5]KeyView filters only the internal redirection text. The underlying document text is not accessible without the decryption key.
[6]This reader supports PKCS #7 signed-data encapsulating PKCS #7 data only.
[7]Only XMP metadata is extracted for this format.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	Personal Folder[1] (97 onwards)								
pstsr[2]	Microsoft Outlook Personal Folder[3] (97 onwards)	N	N	Y	Y	Y	N	N	MS_OutlookPST_Fmt
pstxsr	Microsoft Outlook Personal Folder[4] (97 onwards)	N	N	Y	Y	Y	Y	N	MS_OutlookPST_Fmt
pwsr	PRIMEWORD	Y	T	T	N	N	N	N	PRIMEWORD_Fmt
pxlsr	HP PCL XL (PCL 6)	Y	T	T	N	N	N	N	HP_PCL_XL_Fmt
qpssr	Corel Quattro Pro (5, 6, 7, 8)	Y	Y	Y	N	P	Y	N	Quattro_Pro_Win_Fmt
qpwsr	Corel Quattro Pro (X4)	Y	N	Y	N	P	Y	N	QPW_Fmt
rarsr	RAR archive (2.0	N	N	N	Y	N	n/a	N	RAR_Fmt

[1]KeyView provides several readers capable of processing PST files. The pstsr reader uses the Microsoft Messaging Application Programming Interface (MAPI), works only on Windows, and requires that Microsoft Outlook is installed. The pstxsr reader is available only on certain platforms (see pstxsr in the platform differences section) and does not require Microsoft Outlook. The pstnsr reader is an alternative reader that does not require Microsoft Outlook, for all platforms not supported by pstxsr. For more information about these readers, see "Extract Subfiles from Outlook Personal Folders Files" in Chapter 3.
[2]This reader supports both clear signed and encrypted S/MIME. KeyView supports S/MIME for PST, EML, MBX, and MSG files.

[3]KeyView provides several readers capable of processing PST files. The pstsr reader uses the Microsoft Messaging Application Programming Interface (MAPI), works only on Windows, and requires that Microsoft Outlook is installed. The pstxsr reader is available only on certain platforms (see pstxsr in the platform differences section) and does not require Microsoft Outlook. The pstnsr reader is an alternative reader that does not require Microsoft Outlook, for all platforms not supported by pstxsr. For more information about these readers, see "Extract Subfiles from Outlook Personal Folders Files" in Chapter 3.
[4]KeyView provides several readers capable of processing PST files. The pstsr reader uses the Microsoft Messaging Application Programming Interface (MAPI), works only on Windows, and requires that Microsoft Outlook is installed. The pstxsr reader is available only on certain platforms (see pstxsr in the platform differences section) and does not require Microsoft Outlook. The pstnsr reader is an alternative reader that does not require Microsoft Outlook, for all platforms not supported by pstxsr. For more information about these readers, see "Extract Subfiles from Outlook Personal Folders Files" in Chapter 3.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	through 3.5)								
riffsr	Microsoft Wave Sound	M	N	N	N	Y	N	N	MS_WAVE_Audio_Fmt
rpmsgsr[1]	Microsoft Outlook Restricted Permission Message	N	N	N	Y[2]	N	Y	N	RPMSG_Fmt
rtfsr	Rich Text Format (1 through 1.7)	Y	Y	Y	N	P	Y	Y	MS_Pocket_Word_Fmt, MS_RTF_Fmt
sassr	SAS7BDAT reader	Y	T	T	N	N	N	N	SAS7BDAT_Fmt
skypesr	Skype Log (3)	Y	Y	Y	N	N	N	N	Skype_Fmt
sosr	OpenOffice, LibreOffice(1-5), StarOffice (6-9)	Y	T	T	N	Y	Y	N	SO_Spreadsheet_XML_Fmt
starcsr	StarOffice Calc (3, 4, 5)	Y	T	T	N	N	N	N	SO_Spreadsheet_Fmt
starwsr	StarOffice Writer (3, 4, 5)	Y	T	T	N	N	N	N	SO_Text_Fmt
stringssr	Generic 'strings' reader	Y	T	T	N	N	N	N	BeagleWorks_Word_Fmt, CEOwrite_Fmt, CPT_Comm_Fmt, CWK_Fmt, DG_CDS_Fmt, DSA101_Fmt, Data_Point_VistaWord_Fmt, Enable_WP_Fmt, GreatWorks_Word_Fmt, HP_Word_PC_

[1]The rpmsgsr reader is only available on certain platforms (see rpmsgsr in the platform differences section).
[2]Extraction of embedded email messages is not currently supported.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
									Fmt, IBM_DCF_Script_Fmt, IBM_Writing_Assistant_Fmt, Lotus_Notes_CDF_Fmt, Lyrix_Fmt, MASS_11_Fmt, MS_Works_DOS_WP_Fmt, MS_Works_Mac_WP_Fmt, MacWrite_Fmt, MacWrite_II_Fmt, Multimate_Adv_Fmt, Multimate_Adv_Fnote_Fmt, Multimate_Adv_II_Fmt, Multimate_Adv_II_Fnote_Fmt, Multimate_Fmt, Multimate_Fnote_Fmt, Navy_DIF_Fmt, ODA_Q1_11_Fmt, ODA_Q1_12_Fmt, Office_Writer_Fmt, Psion_TextEd_Fmt, Psion_Word_3_Fmt, Psion_Word_Fmt, Q_A_DOS_Fmt, Q_A_Win_Fmt, Quadratron_Q_One_v1_Fmt, Quadratron_Q_One_v2_Fmt, Quickword_Fmt, SAMNA_Word_IV_Fmt, Symbol_Dynamics_EXP5_Fmt, Symbol_Dynamics_EXP_Fmt, Targon_Word_Fmt, Uniplex_WP_Fmt, Volkswriter_Fmt, WANG_WITA_Fmt, WANG_WPS_Comm_Fmt, WPS_PLUS_Fmt, WordERA_Fmt, WordMARC_Fmt, WordPerfect_Fmt, WordStar_2000_Fmt, WordStar_Fmt, WordStar_for_Windows_Fmt, Word_Connection_Fmt, WriteNow_Fmt, Xerox_860_Comm_Fmt, Xerox_Writer_Fmt
swfsr	Macromedia Flash (through 8.0)	Y	Y	Y	N	N	Y[1]	N	Macromedia_Flash_Fmt
swsr	Informix SmartWare II Word Processor	Y	T	T	N	N	N	N	SmartWare_II_WP_Fmt
tarsr	TAR Tape Archive	N	N	Y	Y	N	n/a	N	TAR_Fmt

[1]The character set cannot be determined for versions 5.x and lower.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
tifsr	TIFF Tagged Image File (through 6.0[1])	M	M	N	N	Y	N	N	TIFF_Fmt
tnefsr	Transport Neutral Encapsulation Format	N	N	Y	Y	Y	Y	N	TNEF_Fmt
unihtmsr	Unicode HTML	Y	Y	Y	N	Y	Y	N	Unicode_HTML_Fmt
unisr	Unicode Text (3, 4)	Y	Y	Y	N	N	Y	N	Unicode_Fmt
unzip	PKZIP/Zip Compression	N	N	Y[2]	Y	N	n/a	N	Executable_JAR_Fmt, KMZ_Fmt, ODF_Formula_Fmt, ODF_Formula_Template_Fmt, PKZIP_Fmt, Tableau_Packaged_Data_Source_Fmt, Tableau_Packaged_Workbook_Fmt
uudsr	UU-Encoding (all versions)	N	N	Y	Y	N	n/a	N	UUEncoded_Fmt
vcfsr	Microsoft Outlook vCard Contact (2.1, 3.0, 4.0)	Y	Y	T	N	Y	N	N	VCF_Fmt
vsdsr	Microsoft Visio (4, 5, 2000, 2002, 2003, 2007, 2010[3])	Y	Y	Y	Y	Y	Y	N	MS_Visio_Fmt
wkssr	Lotus 1-2-3 (2, 3, 4,	Y	Y	Y	N	N	Y	N	Lotus_123_Worksheet_Fmt

[1]The following compression types are supported: no compression, CCITT Group 3 1-Dimensional Modified Huffman, CCITT Group 3 T4 1-Dimensional, CCITT Group 4 T6, LZW, JPEG (only Gray, RGB and CMYK color space are supported), and PackBits.
[2]PKZIP, WinZip, and Java Archive only
[3]Viewing and Export use the graphic reader, kpVSD2rdr for Microsoft Visio 2003, 2007, and 2010, and vsdsr for all earlier versions. Image fidelity in Viewing and Export is therefore only supported for versions 2003 and above. Filter uses the graphic reader kpVSD2rdr for Microsoft Visio 2003, 2007, and 2010, and vsdsr for all earlier versions.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
	5)								
wosr	Corel WordPerfect Windows (5, 5.1)	Y	Y	Y	N	P	Y	Y	WordPerfect_5_Fmt
wp6sr	Corel WordPerfect (6 onwards)	Y	Y	Y	N	P	Y	N	WordPerfect_6_Fmt
wpmsr	Corel WordPerfect Macintosh (1.02, 2, 2.1, 2.2, 3, 3.1)	Y	Y	Y	N	N	Y	N	WordPerfect_Mac_Fmt
xlsbsr	Microsoft Excel Binary Format (2007 onwards)	Y	Y	Y	N	Y	N	N	MS_Excel_Binary_2007_Fmt
xlssr	Microsoft Excel (2.2 to 2004)	Y	Y	Y	Y[1]	Y	Y	Y[2]	Excel_2000_Fmt, Excel_95_Fmt, Excel_97_Fmt, Excel_Chart_Fmt, Excel_Fmt, Excel_Macro_Fmt, WPS_Office_SS_Fmt
xlsxsr	Microsoft Excel Windows XML (2007 onwards)	Y	Y	Y	Y	Y	Y	Y	MS_Excel_2007_Fmt, MS_Excel_Macro_2007_Fmt
xmlsr	XML	Y	T	T	N	Y	Y	N	AMF_Fmt, AbiWord_Fmt, Adobe_XML_Data_Package_Fmt, Atom_Syndication_Fmt, CDXML_Fmt, Chemical_Markup_Language_Fmt, Collada_DAE_Fmt, Consolidated_CDA_Fmt, ESzigno_Fmt, FictionBook_Fmt, Grasshopper_GHX_Fmt, JNLP_Fmt, JavaView_JVX_Fmt, KML_Fmt, MAML_Fmt, MARC_XML_Fmt, METS_

[1]Supported using the embedded objects reader olesr.
[2]Microsoft Excel for Windows only

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
									Fmt, MODS_Fmt, MS_Excel_XML_Fmt, MS_Management_Pack_MPX_Fmt, MS_Visio_XML_Fmt, MS_Word_XML_Fmt, MXML_Fmt, Mathcad_XML_Fmt, Metalink_Fmt, Mozilla_XUL_Fmt, MusicXML_Fmt, Open_Diagnostic_Data_Exchange_Fmt, Open_eBook_Fmt, PDF_XML_Forms_Data_Fmt, PGML_Fmt, PLS_Fmt, RDF_XML_Fmt, RSS_Fmt, Really_Simple_Discovery_Fmt, SBML_Fmt, SMIL_Fmt, SPARQL_Results_Fmt, SRGS_Fmt, SRU_Fmt, SSML_Fmt, SVG_Fmt, SyncML_Fmt, TEI_Fmt, Tableau_Data_Source_Fmt, Tableau_Map_Source_Fmt, Tableau_Preferences_Fmt, Tableau_Workbook_Fmt, Uniform_Office_Fmt, Uniform_Office_Text_Fmt, VTK_XML_Fmt, VoiceXML_Fmt, WML_Fmt, Windows_Audio_Playlist_Fmt, XAML_Browser_Application_Fmt, XBRL_Fmt, XDF_Fmt, XLIFF_Fmt, XML_Fmt, XML_Shareable_Playlist_Fmt, XSLT_Fmt, XSL_FO_Fmt, YIN_Fmt
xpssr	Microsoft XML Paper Specification	Y	T	T	N	N	N	N	MS_XPS_Fmt
xywsr	XyWrite / Nota Bene (4.12)	Y	Y	Y	N	N	N	N	XyWrite_Fmt
yimsr[1]	Yahoo! Instant Messenger	Y	Y	Y	N	N	N	N	YIM_Fmt

[1]To successfully use this reader, you must set the KV_YAHOO_ID environment variable to the Yahoo user ID. You can optionally set the KV_OTHER_YAHOO_ID environment variable to the other Yahoo user ID. If you do not set it, "Other" is used by default. If you enter incorrect values for the environment variables, erroneous data is generated.

Reader	Description	Filter	Export	View	Extract	Metadata	Charset	H/F	Associated File Formats
z7zsr	7-Zip archive (4.57)	N	N	Y	Y	N	n/a	N	Z7Z_Fmt
zstdsr	Zstandard compression	N	N	N	Y	N	n/a	N	Zstandard_Fmt

Appendix C: Platform Differences

Most KeyView features and document readers are available across all platforms. This section describes the supported platforms for certain features that are not available on every platform.

Feature Differences

Feature	Windows		Linux			macOS		Solaris				AIX	
	x64	x86	x64	x86	AArch64	M1	x64	x64	x86	SPARC64	SPARC	ppc64	ppc32
Export .NET API	✓	✓	-	-	-	-	-	-	-	-	-	-	-
RMS Decryption	✓	-	✓	-	-	-	-	✓	-	✓	-	-	-
Out-of-process conversion	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	✓
Advanced character set detection	✓	✓	✓	✓	✓	-	-	✓	-	✓	-	✓	-
Source code identification	✓	-	✓	-	✓	✓	✓	-	-	-	-	-	-
Optical Character Recognition	✓	-	✓	-	-	-	-	-	-	-	-	-	-
Rasterizing vector graphics to PNG, WMF and CGM	✓	✓	-	-	-	-	-	-	-	-	-	-	-
GraphicFontScale option	✓	✓	-	-	-	-	-	-	-	-	-	-	-
Windows device-dependent bitmaps in RTF (MS_RTF_Fmt)	✓	✓	-	-	-	-	-	-	-	-	-	-	-

Reader Differences

Reader	Windows		Linux			macOS		Solaris				AIX	
	x64	x86	x64	x86	AArch64	M1	x64	x64	x86	SPARC64	SPARC	ppc64	ppc32
avrosr (Apache Avro reader)	✓	-	✓	-	-	-	-	-	-	-	-	-	-
cebsr (Founder Chinese E-paper Basic reader)	-	✓	-	-	-	-	-	-	-	-	-	-	-
htmlsr (HTML reader for XMP extraction)	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-	-
iwss13sr (Apple iWork 2013 Numbers reader)	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-
iwwp13sr (Apple iWork 2013 Pages reader)	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-
kpDWGrdr (Autodesk AutoCAD Drawing reader for platforms without kpODArdr)	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓
kpDXFrdr (Autodesk AutoCAD DXF reader for platforms without kpODArdr)	-	-	-	-	-	-	-	✓	✓	✓	✓	✓	✓
kpIWPG13rdr (Apple iWork 2013 Keynote reader)	✓	✓	✓	✓	✓	✓	✓	✓	-	-	-	-	-
kpODArdr (Autodesk AutoCAD reader)	✓	✓	✓	✓	-	✓	✓	-	-	-	-	-	-
kppdf2rdr (alternative graphic-based PDF reader)	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-

Reader	Windows		Linux			macOS		Solaris				AIX	
	x64	x86	x64	x86	AArch64	M1	x64	x64	x86	SPARC64	SPARC	ppc64	ppc32
lwpsr (Lotus Word Pro reader)	-	✓	-	-	-	-	-	-	-	-	-	-	-
multiarcsr (multiple archive formats reader)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-
nsfsr (Lotus Notes database reader)	✓	✓	-	✓	-	-	-	-	-	-	-	-	✓
orcsr (Apache ORC reader)	✓	-	✓	-	✓	✓	✓	-	-	-	-	-	-
parquetsr (Apache Parquet reader)	✓	-	✓	-	-	-	-	-	-	-	-	-	-
pdf2sr (alternative PDF reader)	✓	✓	✓	✓	-	-	-	-	-	-	-	-	-
pffsr (Microsoft Outlook Offline Folders File reader)	✓	✓	✓	✓	✓	-	-	-	-	-	-	-	-
pstsr (MAPI-based PST reader)	✓	✓	-	-	-	-	-	-	-	-	-	-	-
pstnsr (native PST reader for platforms without pstxsr)	-	-	-	✓	-	✓	✓	✓	✓	✓	✓	✓	✓
pstxsr (native PST reader)	✓	✓	✓	-	✓	-	-	-	-	-	-	-	-
rpmsgsr (Microsoft Outlook Restricted Permission Message reader)	✓	-	✓	-	-	-	-	✓	-	✓	-	-	-

This topic shows only those readers that are unavailable on at least one platform. For a complete list of a readers, see Document Readers, on page 180.

Appendix D: Character Sets

This section provides information on the handling of character sets in the KeyView suite of products, which includes KeyView Filter SDK, KeyView Export SDK, and KeyView Viewing SDK.

Multibyte and Bidirectional Support

The KeyView SDKs can process files that contain multibyte characters. A multibyte character encoding represents a single character with consecutive bytes. KeyView can also process text from files that contain bidirectional text. Bidirectional text contains both Latin-based text which is read from left to right, and text that is read from right to left (Hebrew and Arabic).

The following table indicates which character encodings are supported by KeyView for each format.

Multibyte and bidirectional support

Format	Single-byte	Multibyte	Bidirectional
Archive			
7-Zip (7Z)	n/a	n/a	n/a
AD1 Evidence file	n/a	n/a	n/a
ADJ	n/a	n/a	n/a
B1	n/a	n/a	n/a
BinHex (HQX)	n/a	n/a	n/a
Bzip2 (BZ2)	n/a	n/a	n/a
EnCase – Expert Witness Compression Format (E01)	n/a	n/a	n/a
GZIP (GZ)	n/a	n/a	n/a
ISO (ISO)	n/a	n/a	n/a
Java Archive (JAR)	n/a	n/a	n/a
Legato EMailXtender Archive (EMX)	n/a	n/a	n/a
MacBinary (BIN)	n/a	n/a	n/a
Mac Disk Copy Disk Image	n/a	n/a	n/a

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
(DMG)			
Microsoft Backup File (BKF)	n/a	n/a	n/a
Microsoft Cabinet format (CAB)	n/a	n/a	n/a
Microsoft Compiled HTML Help (CHM)	n/a	n/a	n/a
Microsoft Compressed Folder (LZH)	n/a	n/a	n/a
PKZip (ZIP)	n/a	n/a	n/a
Microsoft Outlook DBX (DBX)	Y	Y	Y
Microsoft Outlook Offline Storage File (OST)	Y	Y	Y
RAR Archive (RAR)	n/a	n/a	n/a
Tape Archive (TAR)	n/a	n/a	n/a
UNIX Compress (Z)	n/a	n/a	n/a
UUEncoding (UUE)	n/a	n/a	n/a
Windows Scrap File (SHS)	n/a	n/a	n/a
WinZip (ZIP)	n/a	n/a	n/a
Binary			
Executable (EXE)	n/a	n/a	n/a
Link Library (DLL)	n/a	n/a	n/a
Computer-aided Design			
AutoCAD Drawing (DWG)	Y	Y	Y
AutoCAD Drawing Exchange (DXF)	Y	Y	Y
CATIA formats (CAT)	Y	N	N
Microsoft Visio (VSD)	Y	Y	Y
Database			
dBase Database	Y	N	N
Microsoft Access (MDB)	Y	Y	N
Microsoft Project (MPP)	Y	Y	N

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
Desktop Publishing			
Microsoft Publisher	N	Y	N
Display			
Adobe Portable Document Format (PDF)	Y	Y[1]	Y
Graphics			
Computer Graphics Metafile (CGM)	Y	N	N
Corel DRAW (CDR)	n/a	n/a	n/a
DCX Fax System (DCX)	Y	N	N
DICOM – Digital Imaging and Communications in Medicine (DCM)	n/a	n/a	n/a
Encapsulated PostScript (EPS)	Y	N	N
Enhanced Metafile (EMF)	Y	Y	N
Graphic Interchange Format (GIF)	n/a	n/a	n/a
JBIG2	n/a	n/a	n/a
JPEG	n/a	n/a	n/a
JPEG 2000	n/a	n/a	n/a
Lotus AMIDraw Graphics (SDW)	n/a	n/a	n/a
Lotus Pic (PIC)	n/a	n/a	n/a
Macintosh Raster (PICT/PCT)	n/a	n/a	n/a
MacPaint (PNTG)	n/a	n/a	n/a
Microsoft Office Drawing (MSO)	n/a	n/a	n/a

1Multibyte PDFs are supported, provided the PDF document is created by using either Character ID-keyed (CID) fonts, predefined CJK CMap files, or `ToUnicode` font encodings, and does not contain embedded fonts. See the Adobe website and the Adobe Acrobat documentation for more information. Any multibyte characters that are not supported are displayed using the replacement character. By default, the replacement character is a question mark (?).

To determine the type of font encodings that are used in a PDF, open the PDF in Adobe Acrobat, and select File > Document Info > Fonts. If the Encoding column lists Custom or Embedded encodings, you might encounter problems converting the PDF.

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
Omni Graffle (GRAFFLE)	Y	N	N
PC PaintBrush (PCX)	n/a	n/a	n/a
Portable Network Graphics (PNG)	n/a	n/a	n/a
SGI RGB Image (RGB)	n/a	n/a	n/a
Sun Raster Image (RS)	n/a	n/a	n/a
Tagged Image File (TIFF)	Y	N	N
Truevision Targa (TGA)	n/a	n/a	n/a
Windows Animated Cursor (ANI)	n/a	n/a	n/a
Windows Bitmap (BMP)	n/a	n/a	n/a
Windows Icon Cursor (ICO)	n/a	n/a	n/a
Windows Metafile (WMF)	Y	Y	N
WordPerfect Graphics 1 (WPG)	Y	N	N
WordPerfect Graphics 2 (WPG)	Y	N	N
Mail			
Documentum EMCMF Format	Y	Y	Y
Domino XML Language (DXL)	Y	Y	N
GroupWise FileSurf	Y	N	N
Legato Extender (ONM)	Y	Y	N
Lotus Notes database (NSF)	Y	Y	Y
Mailbox (MBX)	Y	Y	Y
Microsoft Entourage Database	Y	Y	Y
Microsoft Outlook (MSG)	Y	Y	Y
Microsoft Outlook Express (EML)	Y	Y	Y
Microsoft Outlook iCalendar	Y	Y	Y
Microsoft Outlook for Macintosh	Y	Y	Y
Microsoft Outlook Offline Storage File	Y	Y	Y
Microsoft Outlook Personal File Folders (PST)	Y	Y	Y

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
Microsoft Outlook vCard Contact			
Text Mail (MIME)	Y	Y	Y
Transport Neutral Encapsulation Format	Y	Y	Y
Multimedia			
Advanced Systems Format (ASF)	n/a	n/a	n/a
Audio Interchange File Format (AIFF)	n/a	n/a	n/a
Microsoft Wave Sound (WAV)	n/a	n/a	n/a
MIDI (MID)	n/a	n/a	n/a
MPEG 1 Audio Layer 3 (MP3)	n/a	n/a	n/a
MPEG 1 Video (MPG)	n/a	n/a	n/a
MPEG 2 Audio (MPEGA)	n/a	n/a	n/a
MPEG 4 Audio (MP4)	n/a	n/a	n/a
NeXT/Sun Audio (AU)	n/a	n/a	n/a
QuickTime Movie (QT/MOV)	n/a	n/a	n/a
Windows Video (AVI)	n/a	n/a	n/a
Presentations			
Apple iWork Keynote (GZ)	Y	Y	N
Applix Presents (AG)	character set 1252 only	N	N
Corel Presentations (SHW)	character set 1252 only	N	N
Extensible Forms Description Language (XFD)	Y	Y	N
Lotus Freelance Graphics 2 (PRE)	character set 850 only	N	N
Lotus Freelance Graphics (PRZ)	Y	Japanese, Simple Chinese, Traditional Chinese, Thai only	N

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
Macromedia Flash (SWF)	Y	Y	N
Microsoft OneNote	Y	Y	N
Microsoft PowerPoint PC (PPT)	character set 1252 only	Traditional Chinese only	N
Microsoft PowerPoint Windows (PPT)	Y	Japanese, Simple Chinese, Traditional Chinese, Korean only	Hebrew only
Microsoft PowerPoint Macintosh (PPT)	Y	N	N
Microsoft PowerPoint Windows XML 2007 and 2010 (PPTX)	Y	Y	Y
OASIS Open Document (ODP)	Y	Y	N
OpenOffice Impress (ODP)	Y	Y	N
StarOffice Impress (ODP)	Y	Y	N
Spreadsheets			
Apple iWork Numbers (GZ)	Y	Y	N
Applix Spreadsheets (AS)	character set 1252 only	N	N
Comma Separated Values (CSV)	character set 1252 only	N	N
Corel Quattro Pro (QPW/WB3)	Y	N	N
Data Interchange Format (DIF)	Y	Y	Y[1]
Lotus 1-2-3 (123)	Y	Y	Y
Lotus 1-2-3 (WK4)	Y	Y	N
Lotus 123 Charts (123)	Y	Y	N
Microsoft Excel Charts (XLS)	Y	Y	N
Microsoft Excel Macintosh (XLS)	Y	N	N
Microsoft Excel Windows (XLS)	Y	Y	Y [2]
Microsoft Excel Windows XML 2007 (XLSX)	Y	Y	N
Microsoft Office Excel Binary Format (XLSB)	Y	Y	N

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
Microsoft Works Spreadsheet (S30/S40)	Y	N	N
OASIS Open Document (ODS)	Y	Y	N
OpenOffice Calc (ODS)	Y	Y	N
StarOffice Calc (ODS)	Y	Y	N
Text and Markup			
ANSI (TXT)	Y	Y	Y[2]
ASCII (TXT)	Y	Y	Y[2]
HTML (HTM)	Y	Y	Y[2, 2]
Microsoft Excel Windows XML 2003	Y	Y	Y
Microsoft Word for Windows XML 2003	Y	Y	Y
Microsoft Visio XML 2003	Y	Y	Y
Rich Text Format (RTF)	Y	Y	Y [3]
Unicode HTML	Y	Y	Y [2,3]
Unicode Text (TXT)	Y	Y	Y[2]
XHTML	Y	Y	Y[3]
XML	Y	Y	Y
Word Processing			
Adobe Maker Interchange Format (MIF)	character set 1252 only	N	N
Apple iChat Log (ICHAT)	Y	Y	N
Apple iWork Pages (GZ)	Y	Y	N
Applix Words (AW)	character set 1252 only	N	N
DisplayWrite (IP)	character set 500, 1026 only	N	N
Folio Flat File (FFF)	character set 1252 only	N	N

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
Founder Chinese E-paper Basic (CEB)	Y	Y	N
Fujitsu Oasys (OA2)	Y	Y	N
Hangul (HWP)	Y	Y	N
Health level7 (HL7)	Y	Y	Y
IBM DCA/RTF (DC)	character sets 500, 1026 only	N	N
JustSystems Ichitaro (JTD)	Y	Y	N
Lotus AMI Pro (SAM)	Y	Simple Chinese, Traditional Chinese, Japanese, Thai only	Y
Lotus AMI Professional Write Plus (AMI)	Y	Simple Chinese, Traditional Chinese, Japanese, Thai only	N
Lotus Word Pro (LWP)	Y	Y	Y[3]
Lotus SmartMaster (MWP)	Y	Y	N
Microsoft Word PC (DOC)	character set 1252 only	N	N
Microsoft Word Windows V1-2 (DOC)	Y	N	N
Microsoft Word Windows V6, 7, 8, 95 (DOC)	Y	Y	Hebrew only[3]
Microsoft Word Windows V97 through 2003 (DOC)	Y	Y	Y[3]
Microsoft Word Windows XML 2007 and 2010 (DOCX)	Y	Y	Y[3]
Microsoft Word Macintosh (DOC)	Y	N	Y[3]
Microsoft Works (WPS)	Y	Japanese only	N
Microsoft Write (WRI)	Y	Japanese only	N
OASIS Open Document (ODT)	Y	Y	N
Omni Outliner (OO3)	Y	Y	N
OpenOffice Writer (ODT)	Y	Y	N

Multibyte and bidirectional support, continued

Format	Single-byte	Multibyte	Bidirectional
Open Publication Structure eBook (EPUB)	Y	Y	Y
StarOffice Writer (ODT)	Y	Y	N
Skype Log (DBB)	Y	Y (null-terminated charsets)	N
WordPad (RTF)	Y	Y	Y
WordPerfect Linux (WPS)	Y	N	N
WordPerfect Macintosh (WPS)	Y	N	N
WordPerfect Windows (WO)	Y	N	N
XML Paper Specification (XPS)	Y	Y	N
XYWrite Windows (XY4)	character set 1252 only	N	N
Yahoo! Instant Messenger (DAT)	Y	Y (null-terminated charsets)	N

[1]The text direction in the output file might not be correct.

[2]In Export SDK, a bidirectional right-to-left (`RTL`) tag is extracted from this format and included in the direction element (`<dir=RTL>`) of the output.

Coded Character Sets

This section lists which character set you can use to specify the target character set. The coded character sets are enumerated in `kvcharset.h` and defined in the Export class.

Code Character Sets

Coded Character Set	Description	Can be set as target charset?
KVCS_ UNKNOWN	Unknown character set	N
KVCS_SJIS	Japanese (uses multibyte encoding), cp932	Y
KVCS_GB	Simplified Chinese (China, Singapore, Malaysia) cp936	Y
KVCS_BIG5	Traditional Chinese (Taiwan, Hong Kong, Macaw) cp950	Y

Code Character Sets, continued

Coded Character Set	Description	Can be set as target charset?
KVCS_KSC	Korean, cp949	Y
KVCS_1250	Windows Latin 2 (Central Europe)	Y
KVCS_1251	Windows Cyrillic (Slavic)	Y
KVCS_1252	Windows Latin 1 (ANSI)	Y
KVCS_1253	Windows Greek	Y
KVCS_1254	Windows Latin 5 (Turkish)	Y
KVCS_1255	Windows Hebrew	Y
KVCS_1256	Windows Arabic	Y
KVCS_1257	Windows Baltic Rim	Y
KVCS_1258	Windows Vietnamese	Y
KVCS_8859_1	ISO 8859-1 Latin 1 (Western Europe, Latin America)	Y
KVCS_8859_2	ISO 8859-2 Latin 2 (Central Eastern Europe)	Y
KVCS_8859_3	ISO 8859-3 Latin 3 (S.E. Europe)	Y
KVCS_8859_4	ISO 8859-4 Latin 4 (Scandinavia/Baltic)	Y
KVCS_8859_5	ISO 8859-5 Latin/Cyrillic	Y
KVCS_8859_6	ISO 8859-6 Latin/Arabic	Y
KVCS_8859_7	ISO 8859-7 Latin/Greek	Y
KVCS_8859_8	ISO 8859-8 Latin/Hebrew	Y
KVCS_8859_9	ISO 8859-9 Latin/Turkish	Y
KVCS_8859_14	ISO 8859-14	Y
KVCS_8859_15	ISO 8859-15	Y
KVCS_437	DOS Latin US	Y
KVCS_737	DOS Greek	Y
KVCS_775	DOS Baltic Rim	Y
KVCS_850	DOS Latin 1	Y

Code Character Sets, continued

Coded Character Set	Description	Can be set as target charset?
KVCS_851	DOS Greek	Y
KVCS_852	DOS Latin 2	Y
KVCS_855	DOS Cyrillic	Y
KVCS_857	DOS Turkish	Y
KVCS_860	DOS Portuguese	Y
KVCS_861	DOS Icelandic	Y
KVCS_862	DOS Hebrew	Y
KVCS_863	DOS Canadian French	Y
KVCS_864	DOS Arabic	Y
KVCS_865	DOS Nordic	Y
KVCS_866	DOS Cyrillic Russian	Y
KVCS_869	DOS Greek 2	Y
KVCS_874	Thai	Y
KVCS_ PDFMACDOC	PDF MAC DOC	N
KVCS_ PDFWINDOC	PDF WIN DOC	N
KVCS_STDENC	Adobe Standard Encoding	N
KVCS_PDFDOC	Adobe standard PDF character set	N
KVCS_037	EBCDIC code page 037	Y
KVCS_1026	EBCDIC code page 1026	Y
KVCS_500	EBCDIC code page 500	Y
KVCS_875	EBCDIC code page 875	Y
KVCS_LMBCS	Lotus multibyte character set Group 1 and Group 2	N
KVCS_UNICODE	Unicode, UCS-2	N
KVCS_UTF16	16-bit Unicode transformation format	N

Code Character Sets, continued

Coded Character Set	Description	Can be set as target charset?
KVCS_UTF8	8-bit Unicode transformation format	Y
KVCS_UTF7	7-bit Unicode transformation format	Y
KVCS_2022_JP	ISO 2022-JP, Japanese mail and news safe encoding (JIS-7)	N
KVCS_2022_CN	ISO 2022-CN, Chinese mail and news safe encoding	N
KVCS_2022_KR	ISO 2022-KR, Korean mail and news safe encoding	N
KVCS_WP6X	Word Perfect 6.x and higher character mapping	N
KVCS_10000	Western European (Macintosh)	Y
KVCS_KSC5601	Unified Hangul	Y
KVCS_GB2312	Simplified Chinese (China, Singapore, Hong Kong)	Y
KVCS_GB12345	Traditional Chinese (China) - analogue of GB2312	Y
KVCS_ CNS11643	Traditional Chinese - Taiwan. Supplement to Big5	Y
KVCS_JIS0201	Japanese - contains ASCII character set (JIS-Roman)	N
KVCS_JIS0212	Japanese. Supplement to JIS0208.	Y
KVCS_EUC_JP	Japanese Extended UNIX Code	Y
KVCS_EUC_GB	Simplified Chinese Extended UNIX Code	Y
KVCS_EUC_ BIG5	Traditional Chinese Extended UNIX Code	N
KVCS_EUC_ KSC	Korean Extended UNIX Code	N
KVCS_424	EBCDIC Hebrew	N
KVCS_856	PC Hebrew (old)	N
KVCS_1006	IBM AIX Pakistan (Urdu)	N
KVCS_KOI8R	Cyrillic (Russian)	Y

Code Character Sets, continued

Coded Character Set	Description	Can be set as target charset?
KVCS_PDF_JAPAN1	Adobe-Japan1-2 character collection	N
KVCS_PDF_KOREA1	Adobe-Korea1-0 character collection	N
KVCS_PDF_GB1	Adobe-GB1-3 character collection	N
KVCS_PDF_CNS1	Adobe-CNS1-2 character collection	N
KVCS_2022_JP_8	ISO 2022-JP, Japanese mail and news safe encoding (JIS8)	N
KVCS_720	Arabic DOS-720	Y
KVCS_VISCII	Vietnamese VISCII	Y
KVCS_8859_10	ISO 8859-10 (Latin 6 Nordic)	Y[1]
KVCS_8859_13	ISO 8859-13 (Latin 7 Baltic)	Y [1]
KVCS_57002	ISCII Devanagari (x-iscii-de)	Y [1]
KVCS_57003	ISCII Bengali (x-iscii-be)	Y [1]
KVCS_57004	ISCII Tamil (x-iscii-ta)	Y[1]
KVCS_57005	ISCII Telugu (x-iscii-te)	Y[1]
KVCS_57006	ISCII Assamese (x-iscii-as)	Y[1]
KVCS_57007	ISCII Oriya (x-iscii-or)	Y[1]
KVCS_57008	ISCII Kannada (x-iscii-ka)	Y[1]
KVCS_57009	ISCII Malayalam (x-iscii-ma)	Y[1]
KVCS_57010	ISCII Gujarathi (x-iscii-gu)	Y[1]
KVCS_57011	ISCII Panjabi (x-iscii-pa)	Y [1]
KVCS_GB18030b2	Reserved for internal use	n/a
KVCS_GB18030	GB18030 (Chinese 4-byte character set)	Y
KVCS_8859_11	ISO 8859-11 (Thai)	Y
KVCS_8859_16	ISO 8859-16 (Latin-10 South-Eastern Europe)	Y

Code Character Sets, continued

Coded Character Set	Description	Can be set as target charset?
KVCS_ ARABICMAC	Arabic Mac (x-mac-arabic)	Y
KVCS_KOI8U	Cyrillic (KOI8U Ukrainian)	Y
KVCS_ HZGB2312	The 7-bit representation of GB 2312 / RFC 1842	n/a
KVCS_UTF32	32-bit Unicode transformation format	N

[1]The character set cannot be forced as output in Export SDK and Viewing SDK because the character set is not supported by the major browsers.

Appendix E: Extract and Format Lotus Notes Subfiles

This section describes how to create XML templates to alter the appearance of extracted Lotus mail note subfiles so that they maintain the look and feel of the original notes.

Overview

KeyView uses the NSF reader, nsfsr, to extract Lotus database files, and places Lotus mail notes in subfiles. The NSF reader uses a set of default XML templates to extract the notes and apply formatting, thereby approximating the look and feel of the original notes.

In some cases, you might need to customize the XML templates, for instance if your notes contain custom data. In such cases, you can modify the existing XML templates or create your own.

During extraction, the NSF reader loads all XML files in the `NSFtemplates` directory and its subdirectories (except for the `NSFtemplates\images` directory, which is reserved for images). During initialization, the KeyView XML parser verifies the XML templates. If the templates contain any invalid XML, elements, or attributes, initialization fails and errors are recorded in the `nsfsr.log` file.

Customize XML Templates

XML templates are enabled by default. In most cases, the default templates should be sufficient; however, you can customize them or create your own as required.

To customize XML templates for Lotus note extraction

1. Modify the template files in the following directory.

   install`\`*OS*`\bin\NSFtemplates`

   The `main.xml` file must exist in the `NSFtemplates` directory. It is the top-level template file that extracts all subfiles, usually by calling other templates.

2. Make sure that any modifications or additional XML files conform to the supported elements and attributes described in Template Elements and Attributes, on page 228.

3. Extract the Lotus database file.

Use Demo Templates

For testing purposes, you can extract notes by using a set of demo templates, which are provided to demonstrate the proper usage of all the XML elements and attributes, because the default templates do not use all the XML elements.

The demo templates are available at:

*install**OS*\bin\NSFtemplates

To use the demo XML templates

1. In the `formats.ini` file, set the following parameter.

   ```
   [nsfsr]
   UseDemoTemplate=1
   ```

2. In the `main.xml` file, uncomment the following section.

   ```
   <ifini name="UseDemoTemplate" text="1">
     <call file="demo.xml"/>
     <quit/>
   </ifini>
   ```

Use Old Templates

For testing purposes, you can extract notes by using legacy templates, which produce MHTML output. You can generate similar output by disabling the XML templates, but using the old templates enables you to see the XML code and compare it to the standard and demo templates.

To use the old XML templates

1. In the `formats.ini` file, set the following parameter.

   ```
   [nsfsr]
   UseOldTemplate=1
   ```

2. In the `main.xml` file, uncomment the following section.

   ```
   <ifini name="UseOldTemplate" text="1">
     <call file="default_old.xml">
     <quit>
   </ifini>
   ```

Disable XML Templates

For testing purposes, you can disable XML templates; KeyView extracts the notes in MHTML format. You can compare the MHTML output directly by the NSF reader with the MHTML output indirectly by the NSF reader through the XML templates.

To disable XML templates

1. In the `formats.ini` file, set the following parameter.

```
[nsfsr]
ExtractByTemplate=0
```

Template Elements and Attributes

This section lists the valid XML elements and attributes that you can use when creating or modifying templates. See the demo templates for examples.

Conditional Elements

The following table lists the valid conditional elements.

Conditional elements

Element	Description
`<keyview>`	The KeyView XML template container ("root") element
`<if*>`	If the condition from the comparison is true, process the XML. Conditions can be nested up to 25 levels deep. **Attributes** • `name`. (Required) The name of the main item to compare to `item` or `text`. • `item`. (Required if no `text`) The name of the item to compare to the item specified by `name`. • `text`. (Required if no `item`) The text to compare to the item specified by `name`.
`<ifex>, <ifnx>`	If `name` item exists and has a `text` value or not. The Notes item might have a value that cannot be converted to text, such as an image.
`<ifeq>, <ifne>, <iflt>, <ifle>, <ifgt>, <ifge>`	Respectively, if `text` ==, !=, <, >, <=, >, >=. Text comparison uses a case-insensitive string compare.
`<iftdeq>, <iftdne>, <iftdlt>, <iftdle>, <iftdgt>, <iftdge>`	Respectively, if time/date ==, !=, <, >, <=, >, >=. Time/date comparison converts dates to text in local time using the Notes default, `TZFMT_NEVER`, because Notes also sometimes converts fields to text internally. For example:

Conditional elements, continued

Element	Description
	`text="06/30/2005 02:52:04 PM"`
`<iftzeq>, <iftzne>`	Respectively, if the time zone equals or does not equal the comparison `text`, for example `CDT`, `EST`, and so on.
`<ifini>`	If the value of the INI option specified in `name` equals the `text` value.
`<else>`	If the condition from the last `<if>` or `<switch>` was false, process XML.
`<switch>`	If a `name` value exists, process XML. **Attributes** • `name`. (Required) The name of the main item to compare in `<case>` subelements.
`<case>`	If the comparison condition is true, process XML, then stop processing the rest of `<switch>`. **Attributes** • `text`. (Required) The text to compare to the `name` item of `<switch>`.
`<default>`	If all `<case>` conditions were false, process XML. This element must be the last element in `<switch>`, after all the `<case>` elements. Any `<case>` elements after the `<default>` element are ignored.
`<for>`	If a `name` value exists, process XML. Process for each part of the `name` item. **Attributes** • `name`. (Required) The name of the main item. • `max`. (Optional) The maximum index to process. By default, all are processed.
`<index>`	Output `<for>` loop index (1-based). `<index>` is only valid within a `<for>` element.

Control Elements

The following table lists the valid control elements.

Control Elements

Element	Description
`<call>`	Call another XML template. You can nest templates up to 10 levels deep. **Attributes** • `file`. (Required) The template file name. This name must be unique.
`<log>`	Log message to the NSF log file. **Attributes** • `text`. (Required) The text to log. • `type`. (Optional) The type of log message. The following values are valid: ◦ `ERROR` ◦ `WARN` ◦ `INFO` ◦ `DIAG` (the default option) ◦ `DEBUG` ◦ `DUMP`
`<quit>`	Stop processing the template. Exits without error. **Attributes** • `text`. (Optional) The text to log. • `type`. (Optional) The type of log message. See <log>, above.
`<stop>`	Stop processing the template. Exits with an `ERROR` log message. **Attributes** • `text`. (Required) The text to log.

Data Elements

The following table lists the valid data elements.

Data elements

Element	Description
`<text>`	Output text. **Attributes** • `name`. (Required if there is no parent) The name of the item to output.

Data elements, continued

Element	Description
<rich>	Output rich text (MHTML). Images are output in the next part or parts of the MHTML, after the first <HTML> part. **Attributes** • name. (Required if there is no parent) The name of the item to output.
<body>	Output the message body in rich text (MHTML). As with <rich>, above, images are output in the next part or parts of the MHTML.
<form>	Output the message form (usually $Body field) in rich text (MHTML). **Attributes** • name. (Required if there is no parent) The name of the item to output.
<addr>	Output an address. **Attributes** • name. (Required if there is no parent) The name of the item to output. • type. (Optional) The type of address to output. Set this attribute to **CN** (Common Name), which is the only supported type.
<name>	Output the name of the last name item, or in other words the current main item. The item must exist.
<format>	Set the default format for <date> and <date_kv>. This element does not set the <text> format. See Date and Time Formats, on page 233 for a list of all Notes and KeyView date and time formats and integer values. **Attributes** • format. (Optional. Omit to reset to defaults) The Notes and KeyView date and time format. You can set the following formats: ◦ TD=int. The Time Date format (TDFMT_*) ◦ TS=int. The Time Show format (TSFMT_*) ◦ TT=int. The Time Time format (TTFMT_*) ◦ TZ=int. The Time Zone format (TZFMT_*) ◦ KV=int. The KeyView date and time format where int is an integer value that corresponds to the desired format. Separate multiple formats with commas. For example: format="TD=0,TS=2,TT=1,TZ=1,KV=55"
<date>	Output a Notes date.

Data elements, continued

Element	Description
	Attributes • `name`. (Required if there is no parent) The name of the item to output. • `format`. (Optional) See <format>, on the previous page. You can set the following values: ◦ `TD` ◦ `TS` ◦ `TT` ◦ `TZ`
`<date_kv>`	Output a KeyView date. **Attributes** • `name`. (Required if there is no parent) The name of the item to output. • `format`. (Optional) See <format>, on the previous page. You can set the following values: ◦ `TZ` ◦ `KV`
`<time>`	Output a time range, for example 1 hour, 30 minutes. **Attributes** • `name`. (Required if there is no parent) The item name of the start date or time. • `item`. (Required) The item name of the end date or time.
`<zone>`	Output a Notes time zone mnemonic, for example `MST`. **Attributes** • `name`. (Required if there is no parent) The name of date item to output.
`<zone_utc>`	Output a time zone as UTC, for example `(UTC-06:00)`.
`<logo>`	Output the mail header logo. The image link is included in the output; the actual image is output to a different part of the MHTML subfile.
`<image>`	Output an image. The image link is included in the output; the actual image is output to the MHTML next part, as with <rich>, on the previous page and <body>, on the previous page.
`<image_`	Output an image URI, in quotation marks. The actual image is output to a different

Data elements, continued

Element	Description
`uri>`	part of the MHTML subfile. **Attributes** • `link`. (Required if there is no `file`) The image link, such as a form or title name. For example: • `link="StdNotesLtr0"` • `file`. (Required if there is no `link`) The name of the image file. The file must exist in the `../../templates/images` directory. For example: • `file="boxcheck.gif"`

Date and Time Formats

This section lists the supported Notes and KeyView date and time formats for use with <format>, <date>, and <date_kv>.

Lotus Notes Date and Time Formats

This section lists supported Lotus Notes date and time formats, and the integer values that specify each one.

Lotus Notes date and time formats

Format	Integer Value	Description
`TDFMT_FULL`	0	(The Notes default) Year, month, and day
`TDFMT_CPARTIAL`	1	Month and day, year if not this year
`TDFMT_PARTIAL`	2	Month and day
`TDFMT_DPARTIAL`	3	Year and month
`TDFMT_FULL4`	4	Four-digit year, month, and day
`TDFMT_ CPARTIAL4`	5	Month and day, four-digit year if not this year
`TDFMT_ DPARTIAL4`	6	Four-digit year and month

Lotus Notes date and time formats, continued

Format	Integer Value	Description
TTFMT_FULL	0	(Notes default) Hour, minute, and second
TTFMT_PARTIAL	1	Hour and minute
TTFMT_HOUR	2	Hour
TZFMT_NEVER	0	(Notes default) All time zones are converted to the current time zone
TZFMT_ SOMETIMES	1	Show only when outside the current time zone
TZFMT_ALWAYS	2	Show for all time zones
TSFMT_DATE	0	Date
TSFMT_TIME	1	Time
TSFMT_DATETIME	2	(The Notes default) Date and time
TSFMT_ CDATETIME	4	Date and time, or time today or time yesterday

KeyView Date and Time Formats

This section lists KeyView date and time formats. The KeyView formats use the following syntax:

Month	`Month` = full month name
	`Mon` = abbreviated month name
	`m` = month (number)
	`mm` = two-digit month (leading 0)
Weekday	`Weekday` = full weekday name
	`Wday` = abbreviated weekday name
Year	`yy` = two-digit year
	`yyyy` = four-digit year
>Day	`d` = day (number)
	`dd` = two-digit day (leading 0)
Time	`h` = 12-hour
	`H` = 24-hour

`m` = minutes

`s` = seconds

`P` = AM/PM

`p` = am/pm

Separators `_` = space

`c` = comma

`s` = slash

`a` = dash

`o` = dot

KeyView date and time formats

Format	Output	Integer Value
12-Hour and 24-Hour Time Formats		
KVDTF_P	P	1
KVDTF_P_hmm	P h:mm	2
KVDTF_hmm_P	h:mm P	3
KVDTF_P_hhmm	P hh:mm	4
KVDTF_hhmm_P	hh:mm P	5
KVDTF_P_hmmss	P h:mm:ss	6
KVDTF_hmmss_P	h:mm:ss P	7
KVDTF_P_hhmmss	P hh:mm:ss	8
KVDTF_hhmmss_P	hh:mm:ss P	9
KVDTF_Hmm	H:mm	10
KVDTF_HHmm	HH:mm	11
KVDTF_mmss	mm:ss	12
KVDTF_Hmmss	H:mm:ss	13
KVDTF_HHmmss	HH:mm:ss	14
Numerical Date Formats with Slashes		
KVDTF_mmsdd	mm/dd	15
KVDTF_msdsyy	m/d/yy	16

KeyView date and time formats, continued

Format	Output	Integer Value
KVDTF_mmsddsyy	mm/dd/yy	17
KVDTF_mmsddsyyyy	mm/dd/yyyy	18
KVDTF_ddsmm	dd/mm	19
KVDTF_ddsmmsyy	dd/mm/yy	20
KVDTF_ddsmmsyy_Hmm	dd/mm/yy H:mm	21
KVDTF_ddsmm_P_hmm	dd/mm P h:mm	22
KVDTF_ddsmm_hmm_P	dd/mm h:mm P	23
KVDTF_ddsmm_P_hhmm	dd/mm P hh:mm	24
KVDTF_ddsmm_hhmm_P	dd/mm hh:mm P	25
KVDTF_ddsmmsyy_P_hmm	dd/mm/yy P h:mm	26
KVDTF_ddsmmsyy_hmm_P	dd/mm/yy h:mm P	27
KVDTF_ddsmmsyy_P_hmmss	dd/mm/yy P h:mm:ss	28
KVDTF_ddsmmsyy_hmmss_P	dd/mm/yy h:mm:ss P	29
KVDTF_ddsmmsyy_P_hhmmss	dd/mm/yy P hh:mm:ss	30
KVDTF_ddsmmsyy_hhmmss_P	dd/mm/yy hh:mm:ss P	31
KVDTF_yysmmsdd_P_hhmmss	yy/mm/dd P hh:mm:ss	32
KVDTF_yysmmsdd_hhmmss_P	yy/mm/dd hh:mm:ss P	33
KVDTF_msdsyy_Hmm	m/d/yy H:mm	34
KVDTF_mmsddsyy_Hmm	mm/dd/yy H:mm	35
KVDTF_msdsyy_P_hmm	m/d/yy P h:mm	36
KVDTF_msdsyy_hmm_P	m/d/yy h:mm P	37
KVDTF_mmsddsyy_hmm_P	mm/dd/yy h:mm P	38
KVDTF_mmsdd_P_hhmm	mm/dd P hh:mm	39
KVDTF_mmsdd_hhmm_P	mm/dd hh:mm P	40
KVDTF_mmsddsyy_P_hhmmss	mm/dd/yy P hh:mm:ss	41
KVDTF_mmsddsyy_hhmmss_P	mm/dd/yy hh:mm:ss P	42

KeyView date and time formats, continued

Format	Output	Integer Value
KVDTF_msd	m/d	43
KVDTF_yysm	yy/m	44
KVDTF_yysmm	yy/mm	45
KVDTF_yysmsd	yy/m/d	46
KVDTF_yysmmsdd	yy/mm/dd	47
KVDTF_yyyysmmsdd	yyyy/mm/dd	48
Numerical Date Formats with Dashes		
KVDTF_ddammayy	dd-mm-yy	49
KVDTF_mmadd	mm-dd	50
KVDTF_mmayy	mm-yy	51
KVDTF_yyammadd	yy-mm-dd	52
KVDTF_yyyyammadd	yyyy-mm-dd	53
KVDTF_yyyyammaddaHHmmss	yyyy-mm-dd-HH:mm:ss	54
Numerical Date Formats with Dots		
KVDTF_yyomod	yy.m.d	55
KVDTF_yyommodd	yy.mm.dd	56
KVDTF_mod	m.d	57
KVDTF_mmodd	mm.dd	58
Numerical and String Date Formats with Dashes, Commas, and Spaces		
KVDTF_ddaMon	dd-Mon	59
KVDTF_daMonayy	d-Mon-yy	60
KVDTF_ddaMonayy	dd-Mon-yy	61
KVDTF_ddaMonayyyy	dd-Mon-yyyy	62
KVDTF_Mon	Mon	63
KVDTF_Monayy	Mon-yy	64
KVDTF_Monayyyy	Mon-yyyy	65

KeyView date and time formats, continued

Format	Output	Integer Value
KVDTF_Monaddayy	Mon-dd-yy	66
KVDTF_yyammadd_P_hhmmss	yy-mm-dd P hh:mm:ss	67
KVDTF_mmadd_P_hhmm	mm-dd P hh:mm	68
KVDTF_Mon_yy	Mon yy	69
KVDTF_Monc_yy	Mon, yy	70
KVDTF_Month	Month	71
KVDTF_Monthayy	Month-yy	72
KVDTF_Month_yy	Month yy	73
KVDTF_Monthc_yy	Month, yy	74
KVDTF_Monthayyyy	Month-yyyy	75
KVDTF_Month_yyyy	Month yyyy	76
KVDTF_Monthc_yyyy	Month, yyyy	77
KVDTF_Mon_dc_yyyy	Mon d, yyyy	78
KVDTF_d_Monc_yyyy	d Mon, yyyy	79
KVDTF_yyyy_Mon_d	yyyy Mon d	80
KVDTF_Month_dc_yyyy	Month d, yyyy	81
KVDTF_d_Monthc_yyyy	d Month, yyyy	82
KVDTF_yyyy_Month_d	yyyy Month d	83
Weekday Date Formats		
KVDTF_Wday	Wday	84
KVDTF_Weekday	Weekday	85
KVDTF_Wdayc_Mon_dc_yyyy	Wday, Mon d, yyyy	86
KVDTF_Weekdayc_Month_dc_yyyy	Weekday, Month d, yyyy	87
KVDTF_Weekdayc_d_Monthc_yyyy	Weekday, d Month, yyyy	88

Appendix F: Export Tokens

This section contains an alphabetized list of the Export tokens.

Tokens are special strings inserted into the `KVXMLTemplate` structure, `XmlTemplateInfo` class, and template files. They are placeholders for markup that appears in the XML output. For example, the `$CHARSET` token marks the place in the XML output where the name of the source document's character set is inserted. It would be used in the tag `<charset=$CHARSET>`.

Word documents are split into blocks by heading level. By default, each section of text between Heading Level 1 headings will be a single block.

See the template files for examples of how to use tokens.

Export Tokens

Token	Description
`$ANCHOR`	Inserts an anchor for a heading level (`h2-h6`) for the current block.
`$BASE`	Inserts the base URL for the XML file. Use in the `<base href=xx>` tag.
`$CHARSET`	Inserts the character set of the source document, if that information is ascertainable. Document Readers, on page 178 lists the file formats for which character set information can be determined.
`$CONTENT`	Inserts the content of the metadata field specified by the `$NAME` token. This token is used in conjunction with the `$SUMMARY`, `$USERSUMMARY`, and `$NAME` tokens to insert source document metadata into the XML output. An example of this token's use is: `pszUserSummary=<MetaData name="$NAME" content="$CONTENT">` Document Readers, on page 178 lists file formats that support metadata.
`$ENDNOTE`	Inserts endnotes from the current block at this point in the output stream. Currently implemented for Microsoft Word documents only.
`$ENDNOTEALL`	Inserts all endnotes at this point in the output stream. Currently implemented for Microsoft Word documents only.
`$FOOTER`	Inserts the footer from the current block at this point in the output stream.
`$FOOTNOTE`	Inserts footnotes from the current block at this point in the output stream. Currently implemented for Microsoft Word documents only.
`$FOOTNOTEALL`	Inserts all footnotes at this point in the output stream. Currently implemented for Microsoft Word documents only.
`$HEADER`	Inserts the header from the current block at this point in the output stream.

Export Tokens, continued

Token	Description
`$MAINURL`	Inserts the URL to the file containing the start of the generated XML, that is, the main output stream.
`$NAME`	Inserts the name of a metadata field. This token is used in conjunction with the $SUMMARY, below, $USERSUMMARY, on the next page, and $CONTENT, on the previous page tokens to insert source document metadata into the XML output. An example of this token's use is: `pszUserSummary=<MetaData name="$NAME" content="$CONTENT">` The section Document Readers, on page 178 lists file formats that support metadata.
`$NEXT`	Inserts the anchor to the next block. If this is the last block, a link to the first block is inserted.
`$PREV`	Inserts the anchor to the previous block. If the current block is the first block, a link to the last block is inserted.
`$STYLESHEET`	Inserts the path to the style sheet.
`$SUMMARY`	Inserts the data from standard metadata fields using the markup provided in the `pszUserSummary` member of the structure `KVXMLTemplate`. Standard fields are enumerated from 0 to 33 in `KVSumType` in `kvtypes.h`. See the tokens $USERSUMMARY, on the next page, $NAME, above, and $CONTENT, on the previous page. The section Document Readers, on page 178 lists file formats that support metadata.
`$SUMMARY`*`NN`*	Inserts the data from a *specified* metadata field. *`NN`* is a number from 0 through 33 enumerated in the `KVSumType` structure in `kvtypes.h`. An example of this token's use is: `pszMainTop= <title> $SUMMARY01 </head> <body>` The section Document Readers, on page 178 lists file formats that support metadata.
`$SPLITBLOCKNUMBER`	Inserts the page number for each block generated as a result of `bHardPageMakesNewBlock` or `lcbBlockSize`.
`$TOC`	Inserts the table of contents at this point in the current output stream. This token is typically embedded in `pszMainTop`.
`$TOCB`	Inserts the table of contents at this point for the current block.
`$TOCBE`	Inserts the beginning entry for the table of contents at this point in the current output stream.

Export Tokens, continued

Token	Description
`$TOCE`	Inserts a table of contents entry at this point in the current output stream.
`$TOCTE`	Inserts a text entry without XML markup at this point in the current output stream.
`$TOCPE`	Inserts a partial table of contents entry at this point in the current output stream. XML tags are removed; however, character entities are retained. This enables angle brackets to appear in the table of contents entries (for example, `<text>`). Without this token, `<text>` would be interpreted as a non-valid XML tag and would be ignored by the browser.
`$TOPANCHOR`	Inserts the anchor for the top heading level (h1) for the current block.
`$USERCB`	Triggers the callback function `UserCB()` and identifies the callback used in the function.
`$USERSUMMARY`	Inserts the data from *every* valid non-standard metadata field using the markup provided in the `pszUserSummary` member of the `KVXMLTemplate` structure. Non-standard metadata are any fields not listed from 0 to 33 in `KVSumType`, such as user-defined fields (for example, custom property fields in Word documents), or fields that are unique to a particular file type (for example, "Artist" or "Genre" fields in MP3 files). See the tokens $SUMMARY, on the previous page, $NAME, on the previous page, and $CONTENT, on page 239. The section Document Readers, on page 178 lists file formats that support metadata.
`$XANCHOR`	Inserts the anchor to an extra file into the XML output. The contents of the extra file is defined by `pszXFile`, and the block generated by this token is defined by `pszXStartBlock` and `pszXEndBlock`.

Appendix G: File Format Detection

This section describes how file formats are detected in the KeyView Export SDK.

Introduction

The KeyView format detection module (`kwad`) detects a file's format, and reports the information to the API, which in turn reports the information to the developer's application. If the detected format is supported by the KeyView SDK, the detection module also loads the appropriate structured access layer and document reader for further processing.

For a list of supported formats, see Document Readers, on page 178.

Extract Format Information

You can extract format information from a document by using the `getAutoDetectInfo()` method. This method extracts the major format, file class, version, and document attributes, and populates the `AutoDetectInfo` class. It returns the same format information as the `fpGetStreamInfo()` function, but as a string not an integer. The format information that can be extracted is listed in the `adinfo.h` header file.

For information on how to translate the extracted format information, see Translate Format Information, on page 245.

Determine Format Support

After the file format is extracted, the detection module uses the `formats_e.ini` file to determine whether the format is supported by KeyView, and the appropriate structured access layer and reader to load.

The `formats_e.ini` file is in the directory *`install`*`\`*`OS`*`\bin`, where *`install`* is the path name of the Export installation directory and *`OS`* is the name of the operating system. It contains the following information:

- Coded format information. To translate this information, see Translate Format Information, on page 245.
- The reader associated with each format. See Determine a Document Reader, on page 246.
- Configuration parameters for out-of-process conversions.
- Locale settings for internal use.

Below are some entries from the `formats_e.ini` file:

```
123=mw
152=xyw
178=wp6
189=mw6
2=af
200=pdf
205=mb
210=htm
251=htm
```

> **NOTE:** The `formats_e.ini` file applies to all formats except graphics. Detection of graphics formats is handled by an internal module named KeyView Picture Interchange Format (KPIF).

Refine Detection of Text Files

During text detection, KeyView analyzes the first 1 kB and last 1 kB of data in a document; if less than 10% of that data consists of non-ASCII characters, KeyView detects the document as a text file.

However, depending on the type of documents you are working with, the default settings might not provide the desired level of accuracy. Configuration flags allow you to change the amount of data to read at the end of a file, the percentage of non-ASCII characters permitted in a text file, and whether to use or ignore the file extension to determine the document format.

Change the Amount of File Data to Read

During file detection, KeyView reads characters from the beginning and end of a file—by default, it reads the first and last 1,024 bytes of data. Large text files might contain many irrelevant characters at the end of a file, so KeyView might not accurately detect the file format. You can set a configuration flag to increase the amount of data to read from the end of a file during detection.

To change the amount of data to read during detection

- In the `formats_e.ini` file, set the following flag in the `detection_flags` section:

  ```
  [detection_flags]
  non_ascii_chars_end_block_size=kB
  ```

  where *`kB`* is the number of kilobytes to read from the end of the file, from `0` to `10`. The default value is `1`.

> **NOTE:** The file size must be greater than the value specified in the flag. If the flag value is greater than the file size, KeyView does not use the flag.

Change the Percentage of Allowed Non-ASCII Characters

By default, if less than 10% of the analyzed data in a document consists of non-ASCII characters, it is detected as a text file. Depending on the type of files you are working with, changing the default percentage might increase detection accuracy.

To change the percentage of non-ASCII characters allowed in text files

- In the `formats_e.ini` file, set the following flag in the `detection_flags` section:

  ```
  [detection_flags]
  non_ascii_chars_in_text=N
  ```

  where *N* is the percentage of non-ASCII characters to allow in text files. Files that contain a lower percentage of non-ASCII characters than *N* are detected as text files. The default value is `10`.

Use the File Extension for Detection

Sometimes KeyView detects certain file formats (such as CSV) as ASCII because of the content of the documents. In such cases, you can configure KeyView to use the file extension to determine the document format. Using the file extension can improve detection of formats such as CSV, but might not detect text files successfully if they have incorrect file extensions.

To use the file extension for ASCII files during detection

- In the `formats.ini` file, set the following flag in the `detection_flags` section:

  ```
  [detection_flags]
  use_extension_for_ascii=1
  ```

  The default is `0` (do not use the file extension).

Allow Consecutive NULL Bytes in a Text File

By default, if a document contains consecutive `NULL` bytes, it is not detected as text. Depending on the type of files you are working with, changing the default might increase detection accuracy.

To allow consecutive NULL bytes of ASCII characters in text files

In the `formats.ini` file, set the following flag in the `detection_flags` section:

```
[detection_flags]
ascii_allow_null_bytes=1
```

The default value is `0` (do not allow consecutive `NULL` bytes).

Translate Format Information

Format information can include file attributes in the following categories:

- Major format
- File class
- Minor format
- Major version
- Minor version

Not all categories are required. Many formats only include major format and file class, or major format only.

The format information has the following structure:

`MajorFormat.FileClass.MinorFormat.MajorVersion.MinorVersion`

For example:

`81.2.0.9.0`

Each number in the format information represents a file attribute. The entry `81.2.0.9.0` represents a Lotus 1-2-3 Spreadsheet file version 9.0, where:

`81` = Lotus 1-2-3 Spreadsheet (major format)

`2` = Spreadsheet (file class)

`0` = not defined (minor format)

`9` = 9 (major version)

`0` = 0 (minor version)

The example above applies to `formats_e.ini` file. When extracting format information by using the function`getAutoDetectInfo()` method, the same format information is represented as `294.2.0.9`.

> **NOTE:** The format values returned by `getAutoDetectInfo()` differ from those in `formats_e.ini` because the former defines a unique ID for each major format, whereas the latter uses a major version, minor version, and minor format to distinguish between formats.

Distinguish Between Formats

The structure`getAutoDetectInfo()` methodprovides a unique ID for each major format. For example, a call to `getAutoDetectInfo()` returns `351.1.0` for a Microsoft Word 2003 XML format. The major format `351` is unique to this format.

Unlike `getAutoDetectInfo()`, the `formats_e.ini` file distinguishes between formats by using the major version number. For example, in `formats_e.ini`, a Microsoft Word 2003 XML format is defined as `285.1.0.100.0`. The major format `285` and file class `1` are the same values for generic XML. The major version `100` distinguishes the format as Microsoft Word 2003 XML.

The major version is used in `formats_e.ini` to specify the following formats:

- The Microsoft Office 2003 XML format has the same major format and file class as generic XML (`285.1`). It is distinguished from generic XML by using the following major versions:
  - Word: 100
  - Excel: 101
  - Visio: 110
- The XHTML format has the same major format and file class as HTML (`210.1`). It is distinguished from HTML by using the major version `100`.

Determine a Document Reader

The format detection module uses the `formats_e.ini` file to determine whether a format is supported and which reader should be used to parse a format. The entries in the `formats_e.ini` file lists each format's coded value, and an abbreviation for the format's reader. For example:

```
81.2.0.9.0=l123
```

The reader abbreviation is a truncated version of the reader's library name. Adding "`sr`" to the end of an abbreviation creates the name of the reader. The example entry above specifies that a Lotus 1-2-3 Spreadsheet file version 9.0 is parsed by the Lotus 1-2-3 reader, `l123sr`.

Files Required for Redistribution, on page 247 lists the document readers provided with KeyView.

Additional Format Information

The `ADDOCINFO` class returns basic information about a document's format, but sometimes it can be useful to have additional information. The file `format_descriptions.tsv`, which can be found in the `bin` directory, provides a mapping between file format ID, human-readable format description, and the format's MIME type (if one exists). This file is in tab-delimited format, and the tab character will only appear as a delimiter. This information is available in the documentation (see the section Supported Formats, on page 110), but the TSV file provides it in a machine-readable format.

Appendix H: Files Required for Redistribution

This section lists the Export files that can be redistributed in your applications under the licensing agreement. Unless noted, these files are in the directory *install**OS*\bin, where *install* is the path of the Export installation directory and *OS* is the operating system platform.

NOTE: On Windows systems, the libraries are `.dll` files. On UNIX systems, the libraries are `.so`, `.a`, or `.sl` files.

Core Files

The following core files can be redistributed with your application.

File	Description
`formats_e.ini`	Initialization file. For more information on this file, see Determine Format Support, on page 242.
`*htmlexport.*`	Required by the Java API.
`KeyView.jar`	Interface for Java support. **NOTE:** This file can be found at the path *install*`/javaapi/KeyView.jar` where *install* is the Export SDK installation directory.
`kpifcnvt.*`	Graphic conversion routines.
`kpifutil.*`	Graphic utility routines.
`kvdecrypt.*`	Decryption utility functions
`kvxtract.*`	File Extraction interface.
`kvexport.*`	Export C API. Interface to the HTML and XML Export C APIs.
`kvexportdotnet.*`	Interface for .NET support.

File	Description
kvolefio.*	Embedded OLE object writer.
kvutil.*	Internal KeyView utility functions.
kvxpgsa.*	Interface between presentations or graphic readers and the Export API.
kvxml.*	XML Export C API.
kvxsssa.*	Interface between spreadsheet readers and the Export API.
kvxwpsa.*	Interface between word processing readers and the Export API.
kvzip.*	Zip writer
kwad.*	File auto-recognition module.
regsvr32.exe	A Microsoft Windows program used to register in-process COM objects.
txtcnv.*	Converter for document token stream.
xmlcnv.*	XML converter for the document token stream.
xmlexport.	Required by the Java API.
vcredist*	(Windows platforms only) Microsoft Visual C++ Redistributable Packages. For more information about these files, see Software Dependencies, on page 12. **NOTE:** The vcredist folder is located at the root of the SDK, and not in the bin directory.

Support Files

The following support files can be redistributed with your application.

File	Description
datafiles*	(Folder) Required by kvlangdetect.
NSFtemplates*	(Folder) Templates used by nsfsr to format Lotus mail notes.
7z.*	Required by z7zsr and multiarcsr.
bentofio.*	Required by l123sr.* and kpprzrdr.*.
cbmap.map	Character mappings for Adobe Portable Document Format (PDF).
CEBDLL.dll	Required by cebsr.

File	Description
chartbls.ux	Character mapping tables.
chmdll.*	Required by chmsr.
codeidentifierplugin.*	Required for source code identification.
cpstsdk*	Required by pstxsr.
DFECore.dll	Required by cebsr.
Filter.dll	Required by cebsr.
kp3dwrld.*	Required for 3D charts.
kpchtrdr.*	Required for all spreadsheets (chart support).
kpjavwrt.*	Java utility routines.
kpjpeg.*	JPEG file interchange format shared routines.
kppng.*	Portable Network Graphics (PNG) utilities.
kvlangdetect.*	Utility functions for language and character set detection.
kvxconfig.ini	Contains element extraction settings for source XML files.
kvgraph.*	Required for all spreadsheets (chart support).
kvpie.*	Required for all spreadsheets (chart support).
kvradar.*	Required for all spreadsheets (chart support).
kv.lic	Contains license information for KeyView products. This file is opened and validated when a KeyView API is used.
kvraster.class	Java program used to convert vector graphics on UNIX and Linux.
kvthread.*	Required for multithreaded out-of-process functionality.
kvVector.class	Java applet used to convert vector graphics on UNIX and Linux.
kvvector.jar	Java applet used to convert vector graphics on UNIX and Linux. This must reside in the output directory.
langdetectext.	Required by kvlangdetect.*
libcrypto*	SSL utility functions used by KeyView mail format readers.
libpff.*	Required by pffsr.
libstlport.so.1	(Solaris platforms only) Solaris Studio Redistributable. This file is located in *install/OS*/lib.
oleaut32.*	Microsoft OLE Automation Controls.

File	Description
olepro32.*	Microsoft OLE property support library.
servant.*	Executable required for out-of-process conversions.
unzipjpg.*	Required for JPEG decompression.
wpmap.*	Extended character mapping for WordPerfect and Corel Presentation.
xmlsh.*	Contains a library of content handlers for each XML file type. Required by the Expat XML parser.

Document Readers and Writers

The following readers and writers can be redistributed with your application.

File	Description
ad1sr.*	AD1 Evidence file reader
afsr.*	ASCII reader
assr.*	Applix spreadsheet reader
awsr.*	Applix Words reader
bkfsr.*	Microsoft Backup File reader
bmpsr.*	Windows bitmap (BMP) reader
bzip2sr.*	Bzip2 reader
cabsr.*	Microsoft Cabinet format reader
cebsr.*	Founder Chinese E-paper Basic reader
chmsr.*	Microsoft Compiled HTML Help reader
csvsr.*	Comma-Separated Values reader
dbfsr.*	dBase Database reader
dbxsr.*	Microsoft Outlook Express DBX reader
dcasr.*	Document Content Architecture/Revisable Form Text (DCA/RFT) reader
difsr.*	Data Interchange Format reader
dmgsr.*	Mac Disk Copy Disk Image File reader

File	Description
dw4sr.*	DisplayWrite 4 reader
dxlsr.*	Domino XML Language reader
emlsr.*	Microsoft Outlook Express (EML) reader. This is used to convert EML files when the MBX reader is not licensed.
emxsr.*	Legato EMailXtender archive (EMX) reader
encasesr.*	Expert Witness Compression Format (EnCase) v6 reader
encase2sr.*	Expert Witness Compression Format (EnCase) v7 reader
entsr.*	Microsoft Entourage Database Format reader
epubsr.*	Open Publication Structure eBook reader
foliosr.*	Folio Flat File reader
gdsiisr.*	Graphic Database System (GDSII) reader
gifsr.*	Graphics Interchange Format (GIF) reader
gwfssr.*	GroupWise FileSurf reader
hl7sr.*	Health level7 reader (metadata only)
htmsr.*	HTML and XHTML reader
hwposr.*	Hangul 2002, 2005, 2007 reader
hwpsr.*	Hangul 97 reader
ichatsr.*	Apple iChat Log reader
icssr.*	Microsoft Outlook iCalendar reader
isosr.*	ISO-9660 CD Disc Image Format reader
iwss13sr.*	iWork 13 Numbers reader
iwsssr.*	Apple iWork Numbers reader
iwwp13sr.*	iWork 13 Pages reader
iwwpsr.*	Apple iWork Pages reader
jp2000sr.*	JPEG 2000 metadata reader
jpgsr.*	JPEG metadata reader
jtdsr.*	JustSystems Ichitaro reader
kpagrdr.*	Applix Presents reader

File	Description
kpanirdr.*	Animated cursor reader
kpbmprdr.*	Windows Bitmap reader
kpbmpwrt.*	Windows Bitmap writer
kpcdrrdr.*	Corel Draw
kpcgmrdr.*	Computer Graphics Metafile reader
kpcgmwrt.*	Computer Graphics Metafile writer
kpdcxrdr.*	DCX (fax) reader
kpdwgrdr.*	AutoCAD Drawing format reader
kpdxfrdr.*	AutoCAD Drawing Exchange format reader
kpemfrdr.*	Enhanced Metafile reader
kpemfwrt.*	Enhanced Metafile writer
kpepsrdr.*	Encapsulated PostScript (EPS) reader
kpgflrdr.*	OmniGraffle Picture reader
kpgifrdr.*	Graphic Interchange Format (GIF) reader
kpgifwrt.*	Graphic Interchange Format (GIF) writer
kpicordr.*	Windows Icon reader
kpiwpgrdr.*	Apple iWork Keynote reader
kpiwpg13rdr.*	Apple iWork Keynote 13 reader
kpjbig2rdr.*	JBIG2 reader
kpjp2000rdr.*	JPEG 2000 reader
kpjpgrdr.*	JPEG file interchange format reader
kpjpgwrt.*	JPEG file interchange format writer
kpmacrdr.*	MacPaint reader
kpmsordr.*	Microsoft Office Drawing Objects (office 97, 2000, and XP) reader
kpnbmprdr.*	IBM Notes Bitmap reader (for embedded images in DXL files)
kpodfrdr.*	Oasis Open Document Format presentation (ODP) reader
kpodardr.*	AutoCAD reader

File	Description
kpoxdrdr.*	Open Office XML Diagram Graphics reader
kpp40rdr.*	Microsoft PowerPoint PC 4.0 and PowerPoint Mac reader
kpp95rdr.*	Microsoft PowerPoint 95 reader
kpp97rdr.*	Microsoft PowerPoint 97 and higher reader
kppctrdr.*	Macintosh Quick Draw Picture (PICT) reader
kppcxrdr.*	PC Paintbrush (PCX) reader
kppdfrdr.*	Adobe Portable Document File (PDF) graphic-based reader
kppdf2rdr.*	High-fidelity Adobe Portable Document File (PDF) graphic-based reader
kppicrdr.*	Pictor PC Paint format (PIC) reader
kppngrdr.*	Portable Network Graphics (PNG) reader
kppngwrt.*	Portable Network Graphics (PNG) writer
kpppxrdr.*	Microsoft PowerPoint XML reader 2007
kpprerdr.*	Lotus Freelance Graphics for Windows V2.0 reader
kpprzrdr.*	Lotus Freelance Graphics 96/97/98 reader
kprawrdr.*	ODA Internal Raster (RAW) Picture reader
kpsddrdr.*	StarOffice Draw / Impress reader
kpsdwrdr.*	Lotus Ami Pro Graphics reader
kpsgirdr.*	SGI RGB reader
kpshwrdr.*	Corel Presentations reader
kpsprdr.*	Shape Stream reader
kpsvgwrt.*	Scalable Vector Graphics (SVG) writer
kpsunrdr.*	Sun Raster reader
kptgardr.*	Truevision Targa reader
kptifrdr.*	Tagged Image File Format (TIFF) reader
kpvsd2rdr.*	Microsoft Visio reader
kpvsdxrdr.*	Microsoft Visio 2013 reader
kpwg2rdr.*	WordPerfect Graphics 2 reader
kpwmfrdr.*	Windows Metafile reader

File	Description
kpwmfwrt.*	Windows Metafile writer
kpwpgrdr.*	WordPerfect Graphics 1 reader
kpxfdlrdr.*	Extensible Forms Description Language reader
kvgzsr.*	GZIP reader
kvhqxsr.*	BinHex reader
kvzeesr.*	UNIX Compress reader
l123sr.*	Lotus 123 v96/97/98 reader
lasr.*	Lotus AMI Pro reader
ltbenn30.dll	Lotus Word Pro support (supported on Windows x86 platform only)
ltscsn10.dll	Lotus Word Pro support (supported on Windows x86 platform only)
lwpapin.dll	Lotus Word Pro support (supported on Windows x86 platform only)
lwppann.dll	Lotus Word Pro support (supported on Windows x86 platform only)
lwpsr.dll	Lotus Word Pro reader (supported on Windows x86 platform only)
lzhsr.*	Microsoft Compression Folder reader
macbinsr.*	MacBinary reader
mbsr.*	Microsoft Word Macintosh reader
mbxsr.*	Mailbox (MBX)[1] and Microsoft Outlook Express (EML) reader
mdbsr.*	Microsoft Access reader.
mhtsr.*	MIME HTML reader
mifsr.*	Adobe Maker Interchange Format reader
misr.*	Microsoft Word 2 reader
mp3sr.*	MP3 reader for metadata extraction
mppsr.*	Microsoft Project reader
msgsr.*	Microsoft Outlook (MSG) reader
mspubsr.*	Microsoft Publisher reader

[1]This reader is an advanced feature and is sold and licensed separately from KeyView Export SDK.

File	Description
msw6sr.*	Microsoft Works 6 and 2000 reader
mswsr.*	Microsoft Works V1 and 2 reader
multiarcsr.*	ARJ reader
mw6sr.*	Microsoft Word 95 reader
mw8sr.*	Microsoft Word 97, 2000, and XP reader
mwsr.*	Microsoft Word for DOS and Microsoft Write reader
mwssr.*	Microsoft Works Spreadsheet reader
mwxsr.*	Microsoft Word 2007 XML reader
nsfsr.*	IBM Notes Database reader[1]
oa2sr.*	Fujitsu Oasys reader
odfsssr.*	Oasis Open Document Format spreadsheets (ODS) reader
odfwpsr.*	Oasis Open Document Format word processing (ODT) reader
olesr.*	Embedded OLE object reader.
olmsr.*	Microsoft Outlook for Macintosh reader
onealtsr.*	Microsoft OneNote Alternate Format reader
onesr.*	Microsoft OneNote Format reader
onmsr.*	Legato EMailXtender Native Message reader
oo3sr.*	Omni Outliner reader
pbixsr.*	Microsoft Power BI file (PBIX) reader
pdf2sr.*	Alternative Adobe Portable Document Format file (PDF) reader
pdfsr.*	Adobe Portable Document File (PDF) reader
pffsr.*	Microsoft Outlook Offline Storage File reader
pfilesr.*	Microsoft Rights Management System encryption file reader
pngsr.*	Portable Network Graphics (PNG) reader
pstsr.dll	Microsoft Outlook Personal Folders file MAPI-based reader (supported on

[1]This reader is an advanced feature and is sold and licensed separately from KeyView Export SDK.

File	Description
	Windows platform only)[1]
pstnsr.*	Microsoft Outlook Personal Folders file native reader[2]
pstxsr.*	Microsoft Outlook Personal Folders file native reader[3]
qpssr.*	Quattro Pro spreadsheet reader
rarsr.*	RAR Archive reader
rtfsr.*	Microsoft Rich Text Format reader
skypesr.*	Skype log file reader
sosr.*	StarOffice/OpenOffice reader
starcsr.*	StarOffice Calc reader
starwsr.*	StarOffice Writer reader
swfsr.*	Macromedia Flash reader
tarsr.*	Tape archive reader
tifsr.*	TIFF reader (metadata only)
tnefsr.*	Transfer Neutral Encapsulation Format reader
unihtmsr.*	Unicode HTML reader
unisr.*	Unicode reader
unzip.*	Zip file reader
uudsr.*	UUEncoding reader
vsdsr.*	Microsoft Visio reader
vcfsr.*	Microsoft Outlook vCard Contact reader
wkssr.*	Lotus 1-2-3 v2.0 through 5.0 reader
wosr.*	WordPerfect 5.x reader
wp6sr.*	WordPerfect 6.0 through 10.0 reader
wpmsr.*	WordPerfect for Macintosh reader

[1]This reader is an advanced feature and is sold and licensed separately from KeyView Export SDK.

[2]This reader is an advanced feature and is sold and licensed separately from KeyView Export SDK.

[3]This reader is an advanced feature and is sold and licensed separately from KeyView Export SDK.

File	Description
xlsbsr.*	Microsoft Office 2007 Excel Binary Format reader
xlssr.*	Microsoft Excel reader
xlsxsr.*	Microsoft Excel 2007 XML reader
xmlsr.*	Generic XML reader
xpssr.*	XML Paper Specification reader
xywsr.*	XYWrite reader
yimsr.*	Yahoo! Instant Messenger reader
z7zsr.*	7-Zip reader

Document Type Definition Files

The following files related to the verity.dtd can be redistributed with your application.

File	Description
Verity.dtd	The document type definition file that defines the structure of an XML document. XML document validity is based on the Verity.dtd. The Verity.dtd is required and must be in the same directory as the output XML file.
HTMLlat1x.ent	The file defining Latin characters. This file is referenced in the verity.dtd. This file is required and must be in the same directory as the Verity.dtd.
HTMLspecialx.ent	The file defining special characters. This file is referenced in the verity.dtd. This file is required and must be in the same directory as the Verity.dtd.
HTMLsymbolx.ent	The file defining symbols. This file is referenced in the verity.dtd. This file is required and must be in the same directory as the Verity.dtd.
wp.xsl	The default style sheet for word processing documents. This file is optional and must be in the same directory as the output XML file.
pg.xsl	The default style sheet for presentation graphics. This file is optional and must be in the same directory as the output XML file.
ss.xsl	The default style sheet for spreadsheets. This file is optional and must be in the same directory as the output XML file.

Appendix I: Password Protected Files

This section lists supported password-protected container and non-container files and describes how to open them.

Supported Password Protected File Types

The following table lists the password-protected file types that KeyView supports.

Key to support table

Symbol	Description
Y	Format is supported.
N	Format is not supported.
S	Support for viewing subfiles.
V	Support for viewing content.
P	Password required.
C	Password and certificate or User ID file required.

Supported password-protected file types

File Type	Version	Filter	Export	Extract	View	Credentials
PST (Windows)	n/a	N	N	Y	S	P
PST (non-Windows)[1]	n/a	N	N	Y	S	N
ZIP	n/a	N	N	Y	S	P
7-Zip	n/a	N	N	Y	S	P

[1]The native PST readers, `pstxsr` and `pstnsr`, do not require credentials to open password-protected PST files that use compressible encryption.

Supported password-protected file types, continued

File Type	Version	Filter	Export	Extract	View	Credentials
RAR	n/a	N	N	Y	S	P
SMIME in MSG, EML, MBX	n/a	N	N	Y	N	C
Lotus Notes NSF	n/a	N	N	Y	N	C
Adobe PDF	n/a	Y	Y	Y	V	P
Microsoft Office	97-2003 2007 2010	Y	Y	Y	V	P

Export Password Protected Files

This section describes how to export password-protected non-container files with the Java API.

To export password-protected files

1. Create an instance of the `ConfigOption` class, and set the `OptionType` argument to **`CFG_SETPASSWORD`**, the `OptionValue` argument to **`TRUE`**, and the `OptionData` argument to the source file password. The password is a null-terminated string of 255 or fewer characters (the final byte is null).
2. Call the `setConfigOption` method and pass the `ConfigOption` object.
3. Call a convert method. See the Javadoc in the directory *`install`*`\javaapi\javadoc`, where *`install`* is the path name of the Export installation directory.

Open Password Protected Container Files

This section describes how to extract password-protected container files by using the Java API. The following guidelines apply to specific file types.

- **Notes NSF files**. If you are running a Notes client with an active user connected to a Domino server, you must specify the user's password as a credential regardless of whether the NSF files you are opening are protected. This enables KeyView to access the Notes client and the IBM Notes API. If the Notes client is not running with an active user, KeyView does not require credentials to access the client.
- **PST files**. To open password-protected PST files that use high encryption (Microsoft Outlook 2003 only), you must use the MAPI-based PST reader (`pstsr`). The native PST readers

KVERR_PasswordProtected and pstnsr) do not support files that use high encryption and return the error message KVERR_PasswordProtected if a PST file is encrypted with high encryption.

To open container files

- Set the credential information to an ExtOpenDocConfig object, and pass it to the extOpenDocument method.

  For example:

```
dconfig = new ExtOpenDocConfig();
odconfig.setPassword(m_password);
extContextID = m_objExportFilter.extOpenDocument(inFile, odconfig);
```

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