

GCK'S FILE SIGNATURES TABLE

4 December 2020

This table of file signatures (aka "magic numbers") is a continuing work-in-progress. I had found little information on this in a single place, with the exception of the table in *Forensic Computing: A Practitioner's Guide* by T. Sammes & B. Jenkinson (Springer, 2000); that was my inspiration to start this list in 2002. See also Wikipedia's [List of file signatures](#). Comments, additions, and queries can be sent to Gary Kessler at gck@garykessler.net.

This list is not exhaustive although I add new files as I find them or someone contributes signatures. Interpret the table as a one-way function: the magic number generally indicates the file type whereas the file type does not always have the given magic number. If you want to know to what a particular file extension refers, check out some of these sites:

- [File Extension Seeker: Metasearch engine for file extensions](#)
- [FILEExt.com](#)
- [FileInfo.com](#)
- [Wotsit.org](#), The Programmer's File and Data Resource
- [DOT.WHAT?](#)
- [File-Extensions.org](#)

Some other useful information:

- My [software utility](#) page contains a custom signature file based upon this list, for use with FTK, Scalpel, Simple Carver, Simple Carver Lite, and TrID.
- The [File Signatures](#) Web site searches a database based upon file extension or file signature.
- Tim Coakley's [Filesig.co.uk](#) site, with Filesig Manager and Simple Carver. Also, see Tim's [SQLite Database Catalog](#) page, "a repository of information used to identify specific SQLite databases and properties for research purposes."
- Marco Pontello's [TrID - File Identifier](#) utility designed to identify file types from their binary signatures.
- The National Archives' [PRONOM](#) site provides on-line information about data file formats and their supporting software products, as well as their multi-platform [DROID \(Digital Record Object Identification\)](#) software.
- Additional details on graphics file formats can be found at [The Graphics File Formats Page](#) and the [Sustainability of Digital Formats Planning for Library of Congress Collections](#) site.
- Additional details on audio and video file formats can be found at the [Sustainability of Digital Formats Planning for Library of Congress Collections](#) site.

If you are using a Linux/MacOS/Unix system, you can use the [file](#) command to determine the file type based upon the file signature, per the system's *magic* file.

And, one last and final item — if you are searching for network traffic in raw binary files (e.g., RAM or unallocated space), see [Hints About Looking for Network Packet Fragments](#).

ACKNOWLEDGEMENTS & COPYRIGHT NOTICE

Hex Signature	ASCII Signature
File Extension	File Description
	TGA Truevision Targa Graphic file
	Trailer:
54 52 55 45 56 49 53 49 4F 4E 2D 58 46 49 4C 45 2E 00	TRUEVISI ON-XFILE ..
00	.
	PIC IBM Storyboard bitmap file
MOV	Apple QuickTime movie file
	PIF Windows Program Information File
SEA	Mac Stuffit Self-Extracting Archive
YTR	IRIS OCR data file
00 00 00 00 00 00 00 00	
00
00 00 00 00 00 00 00 00
00	
	XXX Compucon/Singer embroidery design file
[11 byte offset]	
00 00 00 00 00 00 00 00	[11 byte offset]
00	
00 00 00 00 00 00 00 00
00
00 00 00 00 00 00 00 00
00	
	PDB PalmPilot Database/Document File
[512 (0x200) byte offset]	[512 (0x200) byte offset]
00 00 00 00 00 00 00 00
00	
	RVT Revit Project File subheader
00 00 00 00 14 00 00
00	
	TBI Windows Disk Image file
[8 byte offset]	
00 00 00 00 62 31 05	[8 byte offset]
00b1..
09 00 00 00 00 20 00
00
00 09 00 00 00 00 00 00
00	
	DAT Bitcoin Core wallet.dat file
00 00 00 0C 6A 50 20jP

20

0D 0A

JP2 Various JPEG-2000 image file formats

00 00 01 00

....

ICO Windows icon file

SPL Windows NT/2000/XP printer spool file

00 00 01 Bx

....

MPEG, MPG MPEG video file

Trailer:

00 00 01 B7 (....)

00 00 01 BA

....°

MPG, VOB DVD Video Movie File (video/dvd, video/mpeg) or DVD MPEG2

Trailer:00 00 01 B9 (....¹)

00 00 02 00

.....

CUR Windows cursor file

WB2 QuattroPro for Windows Spreadsheet file

00 00 02 00 06 04 06

.....

00

.....

08 00 00 00 00 00

WK1 Lotus 1-2-3 spreadsheet (v1) file

00 00 03 F3

...ó

n/a Amiga Hunk executable file

00 00 1A 00 00 10 04

.....

00

....

00 00 00 00

WK3 Lotus 1-2-3 spreadsheet (v3) file

00 00 1A 00 02 10 04

.....

00

....

00 00 00 00

WK4, WK5 Lotus 1-2-3 spreadsheet (v4, v5) file

00 00 1A 00 05 10 04

.....

123 Lotus 1-2-3 spreadsheet (v9) file

00 00 49 49 58 50 52

..IIXPR

or

00 00 4D 4D 58 50 52

..MMXPR

QXD Quark Express document (Intel & Motorola, respectively)

NOTE: It appears that the byte following the 0x52 ("R") is the language indicator; 0x33 ("3") seems to indicate English and 0x61 ("a") reportedly indicates Korean.

00 00 FE FF

..þÿ

n/a Byte-order mark for 32-bit Unicode Transformation Format/4-octet Universal Character Set (UTF-32/UCS-4), big-endian

files.
 (See the [Unicode Home Page](#).)

[6 byte offset] [6 byte offset]
 00 00 FF FF FF FF ..ÿÿÿÿ
 HLP Windows Help file

00 01 00 00 00
 TTF TrueType font file

00 01 00 00 4D 53 49MSIS
 53 41 4D 20 44 61 74 61 AM Datab
 62 ase
 61 73 65

MNY Microsoft Money file

00 01 00 00 53 74 61Stan
 6E 64 61 72 64 20 41 43 dard ACE
 45 DB
 20 44 42

ACCDB Microsoft Access 2007 file

00 01 00 00 53 74 61Stan
 6E 64 61 72 64 20 4A 65 dard Jet
 74 DB
 20 44 42

MDB Microsoft Access file

00 01 00 08 00 01 00
 01 .
 01

IMG Ventura Publisher/GEM VDI Image Format Bitmap file

00 01 01 ...
 FLT OpenFlight 3D file

00 01 42 41 ..BA
 ABA Palm Address Book Archive file

00 01 42 44 ..BD
 DBA Palm DateBook Archive file

00 06 15 61 00 00 00a.....
 02 00 00 04 D2 00 00 10ð.....
 00

DB Netscape Navigator (v4) database file

00 0D BB A0 ..»
 n/a Mbox table of contents file. (**NOTE:** The next four bytes appear to be the number of e-mails in the associated *mbox* file.)

00 11 AF ..
FLI FLIC Animation file

00 14 00 00 01 02 xx
xx
03 .
n/a BIOS details in RAM images

00 1E 84 90 00 00 00
00 .
SNM Netscape Communicator (v4) mail folder

00 20 AF 30 .^-0
TPL Wii images container

00 5C 41 B1 FF .\A±ÿ
ENC Mujahideen Secrets 2 encrypted file

[512 (0x200) byte [512 (0x200) byte offset]
offset] .n.ð
00 6E 1E F0
PPT PowerPoint presentation subheader (MS Office)

00 BF .¿
SOL Adobe Flash shared object file (e.g., Flash cookies)

00 FF FF FF FF FF FF .ÿÿÿÿÿÿÿ
FF FF FF 00 00 02 00 ÿÿ.
01
MDF Alcohol 120% CD image

01 00 00 00
EMF Extended (Enhanced) Windows Metafile Format, printer spool file
(0x18-17 & 0xC4-36 is Win2K/NT; 0x5C0-1 is WinXP)

01 00 00 00 01
PIC Unknown type picture file

01 00 09 00 00 03
WMF Windows Metadata file (Win 3.x format)

01 00 02 00
ARF Webex Advanced Recording Format files.

01 00 39 30 ..90
FDB, GDB Firebird and Interbase database files, respectively. See
[IBPhoenix](#) for more information.

01 01 47 19 A4 00 00 ..G.#xA4...
00
00 00 00 00 ..
TBI [The Bat!](#) secure e-mail Message Base Index file

01 0F 00 00
MDF Microsoft SQL Server 2000 database

01 10 ..
TR1 Novell LANalyzer capture file

01 DA 01 01 00 03 .Ú
RGB Silicon Graphics RGB Bitmap

01 FF 02 04 03 02 .Ý
DRW Micrografx vector graphic file

02 64 73 73 .dss
DSS Digital Speech Standard (Olympus, Grundig, & Phillips)

03 .
DAT MapInfo Native Data Format
DB3 dBASE III file

03 00 00 00
QPH Quicken price history file

03 00 00 00 41 50 50 APPR
52
ADX Approach index file

04 .
DB4 dBASE IV data file

04 00 00 00 xx xx xx
xx
xx xx xx xx 20 03 00
00 **or**
05 00 00 00 xx xx xx
xx
xx xx xx xx 20 03 00
00 n/a [INFO2 Windows recycle bin](#) file. NOTE: Bytes 12-13 indicate the size of each INFO2 record; the most common value is 0x20-03 (0x0320 = 800 bytes).

06 06 ED F5 D8 1D 46 ..íøØ.Få
E5 ..+4
BD 31 EF E7 FE 74 B7 %liçþt ..
1D
INDD Adobe InDesign document

06 0E 2B 34 02 05 01 ..+4
01
0D 01 02 01 01 02
MXF [Material Exchange Format](#) file

07 .

DRW A common signature and file extension for many drawing programs.

07 53 4B 46 .SKE
SKF SkinCrafter skin file

07 64 74 32 64 64 74 64 .dt2ddtd
DTD DesignTools 2D Design file

08 .
DB dBASE IV or dBFast configuration file

08 00 45 ..E
n/a Possibly, maybe, might be a fragment of an Ethernet frame carrying an IPv4 packet. See [Hints About Looking for Network Packet Fragments](#).

[512 (0x200) byte offset] [512 (0x200) byte offset]
09 08 10 00 00 06 05
00 XLS Excel spreadsheet subheader (MS Office)

0A nn 01 ...
PCX [ZSOFT Paintbrush file](#)
(where Version (nn) = 0x00, 0x02, 0x03, 0x04, or 0x05)

0A 16 6F 72 67 2E 62
69 ..org.bi
74 63 6F 69 6E 2E 70 tcoin.pr
72 WALLET MultiBit Bitcoin wallet file

0C ED .í
MP Monochrome Picture TIFF bitmap file (unconfirmed)

0D 44 4F 43 .DOC
DOC DeskMate Document file

0E 4E 65 72 6F 49 53 .NeroISO
4F NRI Nero CD Compilation

0E 57 4B 53 .WKS
WKS DeskMate Worksheet

[512 (0x200) byte offset] [512 (0x200) byte offset]
0F 00 E8 03 ..è.
PPT PowerPoint presentation subheader (MS Office)

0F 53 49 42 45 4C 49 .SIBELIU

55
53

SIB Sibelius Music - Score file

10 00 00 00

....

CL5 Easy CD Creator 5 Layout file

1A 00 00

...

NTF Lotus Notes database template

1A 00 00 04 00 00

.....

NSF Lotus Notes database

1A 0x

..

ARC LH archive file, old version
(where x = 0x2, 0x3, 0x4, 0x8 or 0x9
for types 1-5, respectively)

1A 0B

..

PAK Compressed archive file
(often associated with Quake Engine games)

1A 35 01 00

.5..

ETH GN Nettest WinPharaoh capture file

1A 45 DF A3

.E β £

MKV Matroska stream file

WEBM WebM video file

1A 52 54 53 20 43 4F

4D

.RTS COM

50 52 45 53 53 45 44

PRESSED

20

IMAGE V1

49 4D 41 47 45 20 56

.0.

31

2E 30 1A

DAT Runtime Software compressed disk image

1D 7D

.}

WS WordStar Version 5.0/6.0 document

1F 8B 08

.<.

GZ, TGZ GZIP archive file

VLT VLC Player Skin file

1F 9D

..

TAR.Z Compressed tape archive file using standard (Lempel-Ziv-Welch)
compression

1F A0

.

TAR.Z Compressed tape archive file using LZH (Lempel-Ziv-Huffman)
compression

BSB MapInfo Sea Chart

21 12

! .
AIN AIN Compressed Archive

21 3C 61 72 63 68 3E
0A !<arch>.

LIB Unix archiver (ar) files and Microsoft Program Library
Common Object File Format (COFF)

21 42 44 4E

! BDN
Microsoft Outlook [Personal Folder Files \(PFF\)](#):
OST Microsoft Outlook Offline Storage Folder File
PAB Microsoft Outlook Personal Address Book File
PST Microsoft Outlook [Personal Folder File](#)

23 20

MSI Cerius2 file

23 20 44 69 73 6B 20
44 # Disk D
65 73 63 72 69 70 74 escripto
6F

VMDK VMware 4 Virtual Disk description file (split disk)

23 20 4D 69 63 72 6F
73
6F 66 74 20 44 65 76 # Micros
65 oft Deve
6C 6F 70 65 72 20 53 loper St
74 udio
75 64 69 6F

DSP Microsoft Developer Studio project file

23 21 41 4D 52 # !AMR

AMR Adaptive Multi-Rate ACELP (Algebraic Code Excited Linear Prediction)
Codec, commonly audio format with GSM cell phones. (See [RFC 4867](#).)

23 21 53 49 4C 4B 0A # !SILK.

SIL [Audio compression format](#) developed by Skype; also used by other applications.

23 3F 52 41 44 49 41
4E #?RADIAN
43 45 0A CE.

HDR Radiance High Dynamic Range image file

23 40 7E 5E # @~^

VBE VBScript Encoded script

23 50 45 43 30 30 30 #PEC0001
31 LA:

4C 41 3A

PEC Brother/Babylock/Bernina Home Embroidery file

23 50 45 53 30 #PES0

PES Brother/Babylock/Bernina Home Embroidery file

24 46 4C 32 40 28 23

\$FL2@(#)

20 53 50 53 53 20 44 SPSS DA

41 TA FILE

54 41 20 46 49 4C 45

SAV SPSS Statistics (née Statistical Package for the Social Sciences,
then
Statistical Product and Service Solutions) data file25 21 50 53 2D 41 64
6F %!PS-Ado
62 65 2D 33 2E 30 20 be-3.0 E
45 PSF-3.0
50 53 46 2D 33 20 30EPS Adobe encapsulated PostScript file
(If this signature is not at the immediate
beginning of the file, it will occur early
in the file, commonly at byte offset 30 [0x1E])

25 50 44 46 %PDF

PDF, FDF, AI Adobe Portable Document Format, Forms Document Format, and
Illustrator graphics files**Trailers:**

0A 25 25 45 4F 46 (.%%EOF)

0A 25 25 45 4F 46 0A (.%%EOF.)

0D 0A 25 25 45 4F 46 0D 0A(..%%EOF..)

0D 25 25 45 4F 46 0D (.%%EOF.)

NOTE: There may be multiple end-of-file marks within the
file. When carving, be sure to get the last one.

25 62 69 74 6D 61 70 %bitmap

FBM Fuzzy bitmap (FBM) file

28 54 68 69 73 20 66

69

6C 65 20 6D 75 73 74
20 (This fi
62 65 20 63 6F 6E 76
65 le must
72 74 65 64 20 77 69 be conve
74 rted wit
68 20 42 69 6E 48 65 h BinHex

78

20

HQX Macintosh BinHex 4 Compressed Archive

2A 2A 2A 20 20 49 6E *** Ins
73 tallatio

74 61 6C 6C 61 74 69 n Starte
 6F d
 6E 20 53 74 61 72 74
 65
 64 20

LOG Symantec Wise Installer log file

[2 byte offset] [2 byte offset]
 2D 6C 68 -lh

LHA, LZH Compressed archive file

2E 52 45 43 .REC

IVR RealPlayer video file (V11 and later)

2E 52 4D 46 .RMF

RM, RMVB RealMedia streaming media file

2E 52 4D 46 00 00 00 .RMF....
 12
 00

RA RealAudio file

2E 72 61 FD 00 .raý.

RA RealAudio streaming media file

2E 73 6E 64 .snd

AU NeXT/Sun Microsystems µ-Law audio file

2F 2F 20 3C 21 2D 2D
 20 // <!--
 3C 6D 64 62 3A 6D 6F <mdb:mor
 72 k:z
 6B 3A 7A

MSF Thunderbird|Mozilla Mail Summary File

30 0

CAT Microsoft security catalog file

30 00 00 00 4C 66 4C 0...LfLe
 65

EVT Windows Event Viewer file

30 20 48 45 41 44 0 HEAD

GED [GEnealogical Data COMmunication \(GEDCOM\)](#) file

30 26 B2 75 8E 66 CF
 11 0&²u.fí.
 A6 D9 00 AA 00 62 CE ¡Ù.ª.bÎl
 6C

ASF, WMA, WMV Microsoft Windows Media Audio/Video File
[\(Advanced Systems Format\)](#)

30 31 4F 52 44 4E 41 01ORDNAN
 4E CE SURVE

43 45 20 53 55 52 56 Y

45

59 20 20 20 20 20 20

20

NTF National Transfer Format Map File

30 37 30 37 30 nn 07070.

n/a Archive created with the cpio utility (where *nn* values 0x37 ("7"), 0x31 ("1"), and 0x32 ("2") refer to the standard ASCII format, new ASCII (aka SVR4) format, and CRC format, respectively. (The [swpackage\(8\)](#) page has additional information.) (Thanks to F. Webber for this....)

31 BE **or** 1³₄

32 BE 2³₄

WRI Microsoft Write file

32 03 10 00 00 00 00 00
00 2.....
00 00 80 00 00 00 FFÿ.
00

PCS Pfaff Home Embroidery file

34 CD B2 A1 4Í² ;

n/a Extended tcpdump (libpcap) capture file (Linux/Unix)

37 7A BC AF 27 1C 7z¹₄-'.

7Z 7-Zip compressed file

37 E4 53 96 C9 DB D6 7äS-ÛÖ.
07

n/a zisofs compression format, recognized by some Linux kernels.
See the
[libburnia](#) page for additional information.

38 42 50 53 8BPS

PSD Photoshop image file

3A 56 45 52 53 49 4F :VERSION
4E

SLE Surfplan kite project file

3C <

ASX Advanced Stream redirector file

XDR BizTalk XML-Data Reduced Schema file

WSF Windows Script Component

3C 21 64 6F 63 74 79 <!doctyp
70

DCI AOL HTML mail file

3C 3F <?

WSC Windows Script Component

3C 3F 78 6D 6C 20 76 <?xml ve
65 rsion=
72 73 69 6F 6E 3D

MANIFEST Windows Visual Stylesheet XML file

3C 3F 78 6D 6C 20 76
65 <?xml ve
72 73 69 6F 6E 3D 22 rsion="1
31 .0"?>
2E 30 22 3F 3E

XUL XML User Interface Language file

3C 3F 78 6D 6C 20 76
65
72 73 69 6F 6E 3D 22
31
2E 30 22 3F 3E 0D 0A <?xml ve
3C rsion="1
.0"?>..<
4D 4D 43 5F 43 6F 6E MMC_Cons
73 oleFile
6F 6C 65 46 69 6C 65 ConsoleV
20 ersion="
43 6F 6E 73 6F 6C 65
56
65 72 73 69 6F 6E 3D
22

MSC Microsoft Management Console Snap-in Control file

3C 43 54 72 61 6E 73
54 <CTransT
69 6D 65 6C 69 6E 65 imeline>
3E

MXF Picasa movie project file

3C 43 73 6F 75 6E 64
53 <Csounds
79 6E 74 68 65 73 69 ynthesiz
7A

CSD Csound music file

3C 4D 61 6B 65 72 46 <MakerFi
69 le
6C 65 20

FM, MIF Adobe FrameMaker file

3C 67 70 78 20 76 65
72 <gpx ver
73 69 6F 6E 3D 22 31 sion="1.
2E 1
31

GPX [GPS eXchange file \(v1.1 schema\)](#)

3C 7E 36 3C 5C 25 5F <~6<\%_0
30 gSqh;

67 53 71 68 3B

B85 [ASCII85](#) (aka BASE85) encoded file, sometimes used with PostScript and PDF.
Trailer: 7E 3E 0A (~>.)

```
[24 (0x18) byte
offset] [24 (0x18) byte offset]
3E 00 03 00 FE FF 09 >...þÿ..
00 .
06
```

WB3 Quattro Pro for Windows 7.0 Notebook file

```
3F 5F 03 00 ?_..
GID Windows Help index file
HLP Windows Help file
```

```
[32 (0x20) byte
offset] [32 (0x20) byte offset]
40 40 40 20 00 00 40 @@@ ..@@
40 @@
40 40
```

ENL EndNote Library File

```
41 42 6F 78 ABox
ABox2 Analog Box circuit files
```

```
41 43 AC
DWG Generic AutoCAD drawing file
```

NOTES on AutoCAD file headers: The 0x41-43 (AC) is a generic header, occupying the first two bytes in the file. The next [three or four bytes](#) give further indication about the version (see also [DWG file specifications released by OpenDesign](#)):

- 0x31-2E-32 (1.2) — AutoCAD v1.2 (Release 2)
- 0x31-2E-33 (1.3) — AutoCAD v1.3 (Release 3)
- 0x31-2E-34-30 (1.40) — AutoCAD v1.40 (Release 4)
- 0x31-2E-35-30 (1.50) — AutoCAD v2.05 (Release 5)
- 0x32-2E-31-30 (2.10) — AutoCAD v2.10 (Release 6)
- 0x31-30-30-32 (1002) — AutoCAD v2.5 (Release 7)
- 0x31-30-30-33 (1003) — AutoCAD v2.6 (Release 8)
- 0x31-30-30-34 (1004) — AutoCAD v9.0 (Release 9)
- 0x31-30-30-36 (1006) — AutoCAD v10.0 (Release 10)
- 0x31-30-30-39 (1009) — AutoCAD v11.0 (Release 11)/v12.0 (Release 12)
- 0x31-30-31-32 (1012) — AutoCAD v13.0 (Release 13)
- 0x31-30-31-34 (1014) — AutoCAD v14.0 (Release 14)
- 0x31-30-31-35 (1015) — AutoCAD 2000 (v15.0)/2000i (v15.1)/2002 (v15.2) -- (Releases 15-17)
- 0x31-30-31-38 (1018) — AutoCAD 2004 (v16.0)/2005 (v16.1)/2006 (v16.2) -- (Releases 18-20)
- 0x31-30-32-31 (1021) — AutoCAD 2007 (v17.0)/2008 (v17.1)/2009 (v17.2) -- (Releases 21-23)

- 0x31-30-32-34 (1024) — AutoCAD 2010 (v18.0)/2011 (v18.1)/2012 (v18.2) -- (Releases 24-26)
- 0x31-30-32-37 (1027) — AutoCAD 2013 (v19.0)/2014 (v19.1)/2015 (v20.0)/2016 (v20.1)/2017 (v20.2) -- (Releases 27-31)
- 0x31-30-33-32 (1032) — AutoCAD 2018 (v22.0) (Release 32)

41 43 76

ACL

SLE Steganos Security Suite virtual secure drive

41 43 53 44

ACSD

n/a Miscellaneous AOL parameter and information files

41 45 53

AES

AES [AES Crypt](#) file format. (The fourth byte is the version number.)

41 4D 59 4F

AMYO

SYW Harvard Graphics symbol graphic

41 4F 4C 20 46 65 65

AOL Feed

64

bag

62 61 67

BAG AOL and AIM buddy list file

41 4F 4C 44 42

AOLDB

ABY, IDX AOL database files: address book (ABY) and user configuration data (MAIN.IDX)

41 4F 4C 49 44 58

AOLIDX

IND AOL client preferences/settings file (MAIN.IND)

41 4F 4C 49 4E 44 45
58

AOLINDEX

ABI AOL address book index file

41 4F 4C 56 4D 31 30
30

AOLVM100

ORG, PFC AOL personal file cabinet (PFC) file

NOTE: See [PFC-Details.zip](#) for PFC file format information.41 56 47 36 5F 49 6E
74
65 67 72 69 74 79 5F
44
61 74 61 62 61 73 65

AVG6_Int

egrity_D

atabase

DAT AVG6 Integrity database file

41 72 43 01

ArC.

ARC FreeArc compressed file

42 41 41 44

BAAD

n/a NTFS Master File Table (MFT) entry (1,024 bytes)

42 45 47 49 4E 3A 56
43

BEGIN:VC

ARD..

41 52 44 0D 0A

VCF vCard file

42 4C 49 32 32 33 BLI223

BLI, RBI Thomson Speedtouch series WLAN router firmware

NOTES on BLI/RBI file headers: The signature above is correct for the generic first six bytes.

Reportedly, the 7th & 8th bytes vary by version, and the 9th byte is always 0x30.

- v6.0.7.1 (.bli) — 0x42-4C-49-32-32-33-51-4B-30 (BLI223QK0)
- v7.4.1.7 (.bli) — 0x42-4C-49-32-32-33-51-48-30 (BLI223QH0)
- v8.2.2.5 (.bli) — 0x42-4C-49-32-32-33-55-46-30 (BLI223UF0)
- v8.4.3 (.bli/.rbi) — 0x42-4C-49-32-32-33-57-31-30 (BLI223W10)

42 4D BM

BMP, DIB Windows (or device-independent) bitmap image

NOTE: Bytes 2-5 contain the file length in little-endian order.

42 4F 4F 4B 4D 4F 42 BOOKMOBI
49

PRC PalmPilot resource file

42 50 47 FB BPG#xFB;

BPG [Better Portable Graphics](#) image format

42 5A 68 BZh

BZ2, TAR.BZ2, TBZ2, TB2 [bzip2](#) compressed archive

DMG Mac Disk image (BZ2 compressed)

42 65 67 69 6E 20 50
75 Begin Pu
66 66 65 72 20 44 61 ffer Dat
74 a..
61 0D 0AAPUF [Puffer](#) ASCII-armored encrypted archive42 6C 69 6E 6B 20 62 Blink by
79 D.T.S
20 44 2E 54 2E 53

BLI BLINK compressed archive

43 23 2B 44 A4 43 4D C#+D¤CM¥
A5 Hdr
48 64 72

RTD RagTime document file

43 41 54 20 CAT

IFF Electronic Arts' [Interchange Format Files \(IFF\)](#) format.

43 42 46 49 4C 45 CBFILe

CBD WordPerfect dictionary file (unconfirmed)

43 44 30 30 31 CD001

ISO ISO-9660 CD Disc Image

This signature usually occurs at byte offset 32769 (0x8001), 34817 (0x8801), or 36865 (0x9001).

More information can be found at [MacTech](#) or at [ECMA](#).

43 49 53 4F CISO

CSO Compressed ISO (CISO) CD image

43 4D 4D 4D 15 00 00 00 CMMM....

DB Windows 7 thumbcache_sr.db or other thumbcache file (except thumbcache_idx.db)

43 4D 58 31 CMX1

CLB Corel Binary metafile

43 4F 4D 2B COM+

CLB COM+ Catalog file

43 4F 57 44 COWD

VMDK VMware 3 Virtual Disk (portion of a split disk) file

43 50 54 37 46 49 4C 45 CPT7FILE

CPT Corel Photopaint file

43 50 54 46 49 4C 45 CPTFILE

CPT Corel Photopaint file

43 52 45 47 CREG

DAT Windows 9x registry hive

43 52 55 53 48 20 76 CRUSH v

CRU Crush compressed archive

43 57 53 CWS

SWF Macromedia Shockwave Flash player file (zlib compressed, SWF 6 and later).

See [SWF File Format Specification](#).

43 61 6C 63 75 6C 75

78 Calculux

20 49 6E 64 6F 6F 72 Indoor

20

CIN Calculux Indoor lighting design software project file

43 61 74 61 6C 6F 67 Catalog

3.00.

33 2E 30 30 00

CTF WhereIsIt Catalog file

43 6C 69 65 6E 74 20 Client U

55 rlCache

72 6C 43 61 63 68 65 MMF Ver

20

4D 4D 46 20 56 65 72

20

DAT Microsoft Internet Explorer cache file ([index.dat](#)) file

43 72 32 34

Cr24

CRX Google Chrome Extension

43 72 4F 44

CrOD

CRX Google Chromium patch update

43 72 65 61 74 69 76

65

Creative

20 56 6F 69 63 65 20

Voice F

46

VOC Creative Voice audio file

44 41 41 00 00 00

00 DAA.....

DAA PowerISO Direct-Access-Archive image

44 41 58 00

DAX.

DAX DAX Compressed CD image

44 42 46 48

DBFH

DB Palm Zire photo database

44 4D 53 21

DMS !

DMS Amiga DiskMasher compressed archive

44 4F 53

DOS

ADF Amiga disk file

44 53 44 20

DSD

DSF [DSD Storage Facility](#) audio file

44 53 54 62

DSTb

DST DST compressed file

44 56 44

DVD

DVR DVR-Studio stream file

IFO DVD info file

45 4C 49 54 45 20 43

6F

ELITE Co

6D 6D 61 6E 64 65 72

mmander

20

CDR Elite Plus Commander saved game file

45 4E 54 52 59 56 43

44

ENTRYVCD

02 00 00 01 02 00 18

.....X

58

VCD VideoVCD (GNU VCDImager) file

45 52 02 00 00 CD...
 ISO Apple ISO 9660/HFS hybrid CD image

45 52 46 53 53 41 56
 ERFSSAVE
 44 41 54 41 46 49 4C DATAFILE
 45
 DAT Kroll EasyRecovery Saved Recovery State file

45 50 EP
 MDI Microsoft Document Imaging file

45 56 46 09 0D 0A FF EVF...ÿ.
 00

Enn (where *nn* are numbers) Expert Witness Compression Format (EWF) file, including EWF-E01
 and EWF-S01, as used in EnCase and SMART evidence files.
 Byte
 offset 9 (i.e., byte #10) contains the segment number, starting with 0x01.
 See the [EWF specification](#).

45 56 46 32 0D 0A 81 EVF2...
 Ex*nn* (where *nn* are numbers) EnCase® Evidence File Format Version 2 (Ex01).
 See the [EVFv2 specification](#).

45 6C 66 46 69 6C 65
 00 ElfFile.

 EVTX Windows Vista event log file

45 86 00 00 06 00 Et....
 QBB Intuit QuickBooks backup file

46 41 58 43 4F 56 45
 52 FAXCOVER
 2D 56 45 52 -VER

 CPE Microsoft Fax Cover Sheet

46 44 42 48 00 FDBH.
 FDB Fiasco database definition file

46 45 44 46 FEDF
 SBV (Unknown file type)

46 49 4C 45 FILE
 n/a NTFS Master File Table (MFT) entry (1,024 bytes)

46 4C 56 01 FLV.
 FLV Flash video file

46 4F 52 4D FORM
 ANM IFF ANIM (Amiga delta/RLE encoded bitmap animation) file
 IFF Electronic Arts' [Interchange Format Files \(IFF\)](#) format.

46 4F 52 4D 00

FORM.

AIFF Audio Interchange File
 DAX DAKX Compressed Audio

46 57 53

FWS

SWF Macromedia Shockwave Flash player file (uncompressed). See
[SWF File Format Specification](#).

46 72 6F 6D 20 20 20

From

or

46 72 6F 6D 20 3F 3F

From ???

3F **or**

46 72 6F 6D 3A 20

From:

EML A common file extension for e-mail files. Signatures shown here
 are for Netscape, Eudora, and a generic signature, respectively.
 EML is also used by Outlook Express and QuickMail.

47

G

TS, TSA, TSV [MPEG transport stream](#) file. (This is not a lot to go on, but
 MPEG-2 Part 1
 Transport (MP2T) files are reportedly broken into 188-byte
 packets and the
 0x47 byte is the sync byte, so should repeat every 188 bytes in the
 file.)

47 46 31 50 41 54 43

GF1PATCH

48

PAT Advanced Gravis Ultrasound patch file

47 49 46 38 37 61 **or**

GIF87a

47 49 46 38 39 61

GIF89a

GIF Graphics interchange format file
Trailer: 00 3B (. ;)

47 50 41 54

GPAT

PAT GIMP (GNU Image Manipulation Program) pattern file

47 52 49 42

GRIB

GRB GRIdded Binary or General Regularly-distributed Information in
 Binary file, commonly used in
 meteorology to store historical and forecast weather data

47 58 32

GX2

GX2 Show Partner graphics file (not confirmed)

47 65 6E 65 74 65 63

20

Genetec

4F 6D 6E 69 63 61 73

Omnicast

74

G64 Genetec video archive

48 44 52 2A 50 6F 77 HDR*Power
 65 rBuilder

72 42 75 69 6C 64 65
72

PBD SAP PowerBuilder integrated development environment file

48 45 41 44 45 52 20
52 HEADER R
45 43 4F 52 44 2A 2A ECORD***
2A

XPT SAS Transport dataset file format

48 48 47 42 31 HHGB1
SH3 Harvard Graphics presentation file

49 20 49 I I
TIF, TIFF Tagged Image File Format file

49 44 33 ID3
MP3 MPEG-1 Audio Layer 3 (MP3) audio file

49 44 33 03 00 00 00 ID3....
KOZ Sprint Music Store audio file (for mobile devices)

49 49 1A 00 00 00 48
45 II....HE
41 50 43 43 44 52 02 APCCDR..
00

CRW [Canon digital camera RAW file](#)

49 49 2A 00 II*.
TIF, TIFF Tagged Image File Format file (little
endian, i.e., LSB first in the byte; Intel)

49 49 2A 00 10 00 00 II*....
00 CR
43 52 CR2 [Canon digital camera RAW file](#)

49 4D 4D 4D 15 00 00 IMMM....
00 DB Windows 7 thumbcache_idx.db file

49 53 63 28 ISc()
CAB, HDR Install Shield v5.x or 6.x compressed file

49 54 4F 4C 49 54 4C ITOLITLS
53 LIT Microsoft Reader eBook file

49 54 53 46 ITSF
CHI, CHM Microsoft Compiled HTML Help File

49 6E 6E 6F 20 53 65 Inno Set
74 up Unins
75 70 20 55 6E 69 6E

73	tall Log
74 61 6C 6C 20 4C 6F	(b)
67	
20 28 62 29	DAT Inno Setup Uninstall Log file
49 6E 74 65 72 40 63	
74	Inter@ct
69 76 65 20 50 61 67	ive Page
65	
	IPD Inter@ctive Pager Backup (BlackBerry) backup file
	(See also this IPD File Format paper)
4A 41 52 43 53 00	JARCS.
	JAR JARCS compressed archive
4A 47 03 0E or	JG..
4A 47 04 0E	JG..
	ART AOL ART file
	Trailers:
	For 0x4A-47-03-0E: D0 CB 00 00 (ĐÈ..)
	For 0x4A-47-04-0E: CF C7 CB (İÇÈ)
4B 44 4D	KDM
	VMDK VMware 4 Virtual Disk (portion of a split disk) file
4B 44 4D 56	KDMV
	VMDK VMware 4 Virtual Disk (monolithic disk) file
4B 47 42 5F 61 72 63	KGB_arch
68	-
20 2D	
	KGB KGB archive
4B 49 00 00	KI..
	SHD Windows 9x printer spool file
4B 57 41 4A 88 F0 27	KWAJ^Ñ
D1	
	n/a KWAJ file format used by DOS COMPRESS.EXE and EXPAND.EXE commands.
	This command compresses a single file, replacing the last character in the file name with an underscore or dollar sign, e.g., FOO.BAZ would be renamed FOO.BA_ or FOO.BA\$. (See the SZDD/KWAJ page for more information.)
4C 00 00 00 01 14 02	L.....
00	
	LNK Windows shell link (shortcut) file . See also The Meaning of Linkfiles in Forensic Examinations and Evidentiary Value of Link Files .
4C 01	L.

OBJ Microsoft [Common Object File Format \(COFF\)](#) relocatable object code file for an Intel 386 or later/compatible processors

4C 41 3A LA:
DST Tajima embroidery sticj image file

4C 49 53 54 LIST
IFF Electronic Arts' [Interchange Format Files \(IFF\)](#) format.

4C 4E 02 00 LN..
GID Windows Help index file
HLP Windows Help file

4C 50 46 20 00 01 LPF ..
ANM DeluxePaint Animation file

4C 56 46 09 0D 0A FF LVF...ÿ.
00

Enn (where *nn* are numbers) Logical File Evidence Format (EWF-L01) as used in later versions of EnCase evidence files. See the [EWF specification](#).

4D 2D 57 20 50 6F 63
6B M-W Pock
65 74 20 44 69 63 74 et Dicti
69
PDB Merriam-Webster Pocket Dictionary file

4D 41 52 31 00 MAR1.
MAR Mozilla archive

4D 41 52 43 MARC
MAR Microsoft/MSN MARC archive

4D 41 54 4C 41 42 20
35 MATLAB 5
2E 30 20 4D 41 54 2D .0 MAT-f
66 ile
69 6C 65
MAT MATLAB v5 workspace file (includes creation timestamp)

4D 41 72 30 00 MAr0.
MAR MAr compressed archive

4D 43 57 20 54 65 63
68 MCW Tech
6E 6F 67 6F 6C 69 65 nogolies
73
MTE TargetExpress target file

4D 44 4D 50 93 A7 MDMP"§
HDMP Windows heap dump file
DMP Windows minidump file

4D 49 4C 45 53	MILES	
	MLS	Milestones v1.0 project management and scheduling software (Also see "MV2C" and "MV214" signatures)
4D 4C 53 57	MLSW	
	MLS	Skype localization data file
4D 4D 00 2A	MM.*	
	TIF, TIFF	Tagged Image File Format file (big endian, i.e., LSB last in the byte; Motorola)
4D 4D 00 2B	MM.+	
	TIF, TIFF	BigTIFF files; Tagged Image File Format files >4 GB
4D 4D 4D 44 00 00	MMMD..	
	MMF	Yamaha Corp. Synthetic music Mobile Application Format (SMAF) for multimedia files that can be played on hand-held devices.
4D 52 56 4E	MRVN	
	NVRAM	VMware BIOS (non-volatile RAM) state file
4D 53 43 46	MSCF	
	CAB	Microsoft cabinet file
	ONEPKG	OneNote Package file
	PPZ	Powerpoint Packaged Presentation
	SNP	Microsoft Access Snapshot Viewer file
4D 53 46 54 02 00 01	MSFT.....	
00	TLB	OLE, SPSS, or Visual C++ type library file
4D 53 48 7C 5E 7E 5C	MSH ^~\&	
26		
7C	HL7	Health Level-7 data (pipe delimited) file
4D 53 57 49 4D	MSWIM	
	WIM	Microsoft Windows Imaging Format file
4D 53 5F 56 4F 49 43	MS_VOICE	
45	CDR, DVF	Sony Compressed Voice File
	MSV	Sony Memory Stick Compressed Voice file
4D 54 68 64	MThd	
	MID, MIDI	Musical Instrument Digital Interface (MIDI) sound file
	PCS	Yamaha Piano sound file
4D 56	MV	
	DSN	CD Stomper Pro label file
4D 56 32 31 34	MV214	
	MLS	Milestones v2.1b project management and scheduling software

(Also see "MILES" and "MV2C" signatures)

4D 56 32 43

MV2C

MLS Milestones v2.1a project management and scheduling software
 (Also see "MILES" and "MV214" signatures)

4D 5A

MZ

COM, DLL, DRV, EXE, PIF, Windows/DOS executable file

QTS, QTX, SYS (See [The MZ EXE File Format](#) page for the structure of an EXE file,
 with coverage of NE, TLINK, PE, self-extracting archives, and more.)

Note: MZ are the initials of Mark Zbikowski, designer of the DOS executable file format.

ACM MS audio compression manager driver

AX Library cache file

CPL Control panel application

FON Font file

OCX ActiveX or OLE Custom Control

OLB OLE object library

SCR Screen saver

VBX VisualBASIC application

VXD, 386 Windows virtual device drivers

4D 5A 90 00 03 00 00
 00 MZ.....

API Acrobat plug-in

AX DirectShow filter

FLT Audition graphic filter file (Adobe)

4D 5A 90 00 03 00 00
 00 MZ.....
 04 00 00 00 FF FF ..YY

ZAP ZoneAlam data file

4D 69 63 72 6F 73 6F
 66 Microsof
 74 20 43 2F 43 2B 2B t C/C++
 20

PDB Microsoft C++ debugging symbols file

4D 69 63 72 6F 73 6F
 66
 74 20 56 69 73 75 61 Microsof
 6C t Visual
 20 53 74 75 64 69 6F Studio
 20 Solution
 53 6F 6C 75 74 69 6F File
 6E
 20 46 69 6C 65

SLN Visual Studio .NET Solution file

[84 (0x54) byte offset] [84 (0x54) byte offset]
 Microsof

4D 69 63 72 6F 73 6F t Window
 66 s Media
 74 20 57 69 6E 64 6F Player -
 77 -
 73 20 4D 65 64 69 61
 20
 50 6C 61 79 65 72 20
 2D
 2D 20

WPL Windows Media Player playlist

4D 73 52 63 66 MsRcf
 GDB VMapSource GPS Waypoint Database

4E 41 56 54 52 41 46 NAVTRAFF
 46 IC
 49 43

DAT TomTom traffic data file

4E 42 2A 00 NB*.
 JNT, JTP MS Windows journal file

4E 45 53 4D 1A 01 NESM..
 NSF NES Sound file

4E 49 54 46 30 NITFO
 NTF National Imagery Transmission Format (NITF) file

4E 61 6D 65 3A 20 Name:
 COD Agent newsreader character map file

4F 50 43 4C 44 41 54 OPCLDAT
 attachment 1Password 4 Cloud Keychain encrypted attachment

4F 50 4C 44 61 74 61 OPLDatab
 62 aseFile
 61 73 65 46 69 6C 65

DBF Psion Series 3 Database file

4F 54 54 4F 00 OTTO.
 OTF OpenType font file

4F 67 67 53 00 02 00 OggS....
 00
 00 00 00 00 00 00 OGA, OGG, OGV, OGX Ogg Vorbis Codec compressed Multimedia file

4F 7B O{
 DW4 Visio/DisplayWrite 4 text file (unconfirmed)

50 00 00 00 20 00 00 P... . . .
 00

IDX Quicken QuickFinder Information File

50 35 0A	P5.
	PGM Portable Graymap Graphic
50 41 43 4B	PACK
	PAK Quake archive file
50 41 47 45 44 55 36 34	PAGEDU64
	DMP Windows 64-bit memory dump
50 41 47 45 44 55 4D 50	PAGEDUMP
	DMP Windows memory dump
50 41 58	PAX
	PAX PAX password protected bitmap
50 45 53 54	PEST
	DAT PestPatrol data/scan strings
50 47 50 64 4D 41 49 4E	PGPdMAIN
	PGD PGP disk image
50 49 43 54 00 08	PICT..
	IMG ADEX Corp. ChromaGraph Graphics Card Bitmap Graphic file
50 4B 03 04	PK..
	ZIP PKZIP archive file (Ref. 1 Ref. 2)
	Trailer: <i>filename 50 4B 17 characters 00 00 00</i>
	Trailer: <i>(filename PK 17 characters ...)</i>
	Note: PK are the initials of Phil Katz, co-creator of the ZIP file format and author of PKZIP.
	ZIP Apple Mac OS X Dashboard Widget, Aston Shell theme, Oolite eXpansion Pack,
	Opera Widget, Pivot Style Template, Rockbox Theme package,
	Simple Machines
	Forums theme, SubEthaEdit Mode, Trillian zipped skin, Virtual Skipper skin
	APK Android package
	JAR Java archive; compressed file package for classes and data
	KMZ Google Earth saved working session file
	KWD KWord document
ODT, ODP, OTT	OpenDocument text document, presentation, and text document template, respectively.
	OXPS Microsoft Open XML paper specification file
SXC, SXD, SXI, SXW	OpenOffice spreadsheet (Calc), drawing (Draw), presentation (Impress),
	and word processing (Writer) files, respectively.
	SXC StarOffice spreadsheet
	WMZ Windows Media compressed skin file
	XPI Mozilla Browser Archive
	XPS XML paper specification file
	XPT eXact Packager Models

50 4B 03 04 0A 00 02 00	PK.....	
		EPUB Open Publication Structure eBook file. (Should also include the string: mimetypeapplication/epub+zip)
50 4B 03 04 14 00 01 00 63 00 00 00 00 00	PK..... C.....	ZIP ZLock Pro encrypted ZIP
50 4B 03 04 14 00 06 00	PK.....	
		DOCX, PPTX, XLSX Microsoft Office Open XML Format (OOXML) Document NOTE: There is no subheader for MS OOXML files as there is with DOC, PPT, and XLS files. To better understand the format of these files, rename any OOXML file to have a .ZIP extension and then unZIP the file; look at the resultant file named <i>[Content_Types].xml</i> to see the content types. In particular, look for the <i><Override PartName=</i> tag, where you will find <i>word</i> , <i>ppt</i> , or <i>xl</i> , respectively.
		Trailer: Look for 50 4B 05 06 (PK..) followed by 18 additional bytes at the end of the file.
50 4B 03 04 14 00 08 00 08 00	PK..... ..	
		JAR Java archive
50 4B 05 06	PK..	
		ZIP PKZIP empty archive file
50 4B 07 08	PK..	
		ZIP PKZIP multivolume archive file
[30 (0x1E) byte offset] 50 4B 4C 49 54 45	[30 (0x1E) byte offset] PKLITE	
		ZIP PKLITE compressed ZIP archive (see also PKZIP)
[526 (0x20E) byte offset] 50 4B 53 70 58	[526 (0x20E) byte offset] PKSFX	
		ZIP PKSFX self-extracting executable compressed file (see also PKZIP)
50 4D 43 43	PMCC	

GRP Windows Program Manager group file

50 4E 43 49 55 4E 44 4F	PNCIUNDO	
	DAT	Norton Disk Doctor undo file
50 4D 4F 43 43 4D 4F 43	PMOCCMOC	
	DAT	Microsoft® Windows® User State Migration Tool (USMT). USMT 3.0 applies to Windows XP and Windows Vista®, and USMT 4.0 is for Windows 7.
50 53 46 12	PSF.	
	DSF	Dreamcast Sound Format file, a subset of the Portable Sound Format .
50 55 46 58	PUFX	
	PUF	Puffer encrypted archive
50 61 56 45	PaVE	
	n/a	Parrot Video Encapsulation file
[92 (0x5C) byte offset] 51 45 4C 20	[92 (0x5C) byte offset] QEL	
	QEL	Quicken data file
51 46 49 FB	QFIû	
	IMG	QEMU Qcow Disk Image
51 57 20 56 65 72 2E 20	QW Ver.	
	ABD, QSD	Quicken data file
[512 (0x200) byte offset] 52 00 6F 00 6F 00 74 00 20 00 45 00 6E 00 74 00 72 00 79 00	[512 (0x200) byte offset] R.o.o.t. .E.n.t. r.y.	
	MSG	Outlook/Exchange message subheader (MS Office)
52 41 5A 41 54 44 42 31	RAZATDB1	
	DAT	Shareaza (Windows P2P client) thumbnail
52 44 58 32 0A	RDX2.	
	RDATA	R (programming language) saved work space
52 45 47 45 44 49 54	REGEDIT	
	REG, SUD	Windows NT Registry and Registry Undo files

52 45 56 4E 55 4D 3A REVNUM:,
2C

ADF Antenna data file

52 49 46 46 RIFF

ANI Windows animated cursor
CMX Corel Presentation Exchange (Corel 10 CMX) Metafile
CDR CorelDraw document
DAT Video CD MPEG or MPEG1 movie file

DS4 Micrografx Designer v4 graphic file
4XM 4X Movie video

52 49 46 46 xx xx xx

xx RIFF....

41 56 49 20 4C 49 53 AVI LIST
54

AVI Resource Interchange File Format -- [Windows Audio Video Interleave file](#), where xx xx xx xx is the file size (little endian)

52 49 46 46 xx xx xx

xx RIFF....

43 44 44 41 66 6D 74 CDDAfmt
20

CDA Resource Interchange File Format -- Compact Disc Digital Audio (CD-DA) file, where xx xx xx xx is the file size (little endian)

52 49 46 46 xx xx xx

xx RIFF....

51 4C 43 4D 66 6D 74 QLCMfmt
20

QCP Resource Interchange File Format -- Qualcomm PureVoice, where xx xx xx xx is the file size (little endian)

52 49 46 46 xx xx xx

xx RIFF....

52 4D 49 44 64 61 74 RMIDdata
61

RMI Resource Interchange File Format -- [Windows Musical Instrument Digital Interface file](#), where xx xx xx xx is the file size (little endian)

52 49 46 46 xx xx xx

xx RIFF....

57 41 56 45 66 6D 74 WAVEfmt
20

WAV Resource Interchange File Format -- [Audio for Windows file](#), where xx xx xx xx is the file size (little endian)

52 49 46 46 xx xx xx

xx RIFF....

57 45 42 50 WEBP

WEBP Google [WebP image file](#), where xx xx xx xx is the file size

52 54 53 53 RTSS
CAP Windows NT Netmon capture file

52 61 72 21 1A 07 00 Rar!...
RAR RAR (v4.x) compressed archive file

52 61 72 21 1A 07 01 00 Rar!....
RAR [RAR\(v5\)](#) compressed archive file

52 65 74 75 72 6E 2D 50 61 74 68 3A 20 Return-P
ath:
EML A commonon file header for e-mail files.

[4 byte offset] 53 43 43 41 [4 byte offset]
SCCA
PF [Windows prefetch file](#). The first four bytes indicate the OS:
0x11-00-00-00 = XP, 0x17-00-00-00 = Vista/Win7,
and 0x1A-00-00-00 = Win8.1 (and probably Win8, as well).

53 43 48 6C SCH1
AST Need for Speed: Underground Audio file

53 43 4D 49 SCMI
IMG Img Software Set Bitmap

53 44 50 58 SDPX
DPX Society of Motion Picture and Television Engineers (SMPTE)
Digital Picture Exchange (DPX) image file (big endian)

53 48 4F 57 SHOW
SHW Harvard Graphics DOS Ver. 2/x Presentation file

53 49 45 54 52 4F 4E 49
43 53 20 58 52 44 20 SIETRONI
53 CS XRD S
43 41 4E CAN
CPI Sietronics CPI XRD document

53 49 4D 50 4C 45 20 20
3D 20 20 20 20 20 20 SIMPLE
20 =
20 20 20 20 20 20 T
20 20 20 20 20 54
FITS [Flexible Image Transport System \(FITS\), Version 3.0](#) file

53 49 54 21 00 SIT!.
SIT StuffIt compressed archive

53 4D 41 52 54 44 52 SMARTDRW
57

SDR SmartDraw Drawing file

53 50 46 49 00 SPF1.

SPF StorageCraft ShadowProtect backup file

53 50 56 42 SPVB

SPVCHAIN MultiBit Bitcoin blockchain file

53 51 4C 4F 43 4F 4E
56 SQLOCONV
48 44 00 00 31 2E 30 HD..1.0.
00

CNV DB2 conversion file

53 51 4C 69 74 65 20
66 SQLite f
6F 72 6D 61 74 20 33 ormat 3.
00

DB SQLite database file

53 5A 20 88 F0 27 33 SZ ^δ'3Ñ
D1

n/a QBASIC SZDD file header variant. (See the SZDD or KWAJ format entries for additional information.)

53 5A 44 44 88 F0 27 33 SZDD^δ'3

n/a SZDD file format used by DOS COMPRESS.EXE and EXPAND.EXE commands.
This command compresses a single file, replacing the last character in the file name with an underscore or dollar sign, e.g., FOO.BAZ would be renamed FOO.BA_ or FOO.BA\$. (See the [SZDD/KWAJ](#) page for more information.)

53 6D 62 6C Smb1

SYM (Unconfirmed file type. Likely type is Harvard Graphics Version 2.x graphic symbol or Windows SDK graphic symbol)

53 74 75 66 66 49 74
20 StuffIt
28 63 29 31 39 39 37 (c) 1997-
2D

SIT StuffIt compressed archive

53 75 70 65 72 43 61 SuperCal
6C C
63

CAL SuperCalc worksheet

54 48 50 00 THP.

THP [Wii/GameCube video](#) file

54 68 69 73 20 69 73 This is
20

INFO UNIX GNU Info Reader File

55 43 45 58 UCEX
UCE Unicode extensions

55 46 41 C6 D2 C1 UFAÈÒÁ
UFA UFA compressed archive

55 46 4F 4F 72 62 69 UFOOrbit
74

DAT UFO Capture v2 map file

56 43 50 43 48 30 VCPCH0
PCH Visual C PreCompiled header file

56 45 52 53 49 4F 4E VERSION
20

CTL Visual Basic User-defined Control file

56 65 72 73 69 6F 6E Version
20

MIF MapInfo Interchange Format file

57 04 00 00 53 50 53
53 W...SPSS
20 74 65 6D 70 6C 61 templat
74

SCT SPSS Statistics (née Statistical Package for the Social Sciences,
then
Statistical Product and Service Solutions) template file

57 4D 4D 50 WMMP
DAT Walkman MP3 container file

57 53 32 30 30 30 WS2000
WS2 WordStar for Windows Ver. 2 document

[29,152 (0x71E0) byte offset] [29,152 (0x71E0) byte offset]
57 69 6E 5A 69 70 WinZip

ZIP WinZip compressed archive

57 6F 72 64 50 72 6F WordPro
LWP Lotus WordPro document.

58 2D X-

EML A common file extension for e-mail files. This variant is
for Exchange.

58 43 50 00 XCP.

CAP Cinco NetXRay, Network General Sniffer, and
Network Associates Sniffer capture file

58 50 43 4F 4D 0A 54 XPCOM.Ty
79
70 65 4C 69 62 peLib

XPT XPCOM type libraries for the XPIDL compiler

58 50 44 53 XPDS

DPX Society of Motion Picture and Television Engineers (SMPTE)
Digital Picture Exchange (DPX) image file (little endian)

58 54 XT..

BDR MS Publisher border

5A 4F 4F 20 ZOO

ZOO ZOO compressed archive

5A 57 53 ZWS

SWF Macromedia Shockwave Flash player file (LZMA compressed,
SWF 13 and later).

See [SWF File Format Specification](#).

5B 47 65 6E 65 72 61

6C

5D 0D 0A 44 69 73 70 [General

6C]..Displ

61 79 20 4E 61 6D 65 ay Name=

3D <Display

3C 44 69 73 70 6C 61 Name

79

4E 61 6D 65

ECF MS Exchange 2007 extended configuration file

5B 4D 53 56 43 [MSVC

VCW Microsoft Visual C++ Workbench Information File

5B 50 68 6F 6E 65 5D [Phone]

DUN Dial-up networking file

5B 56 45 52 5D **or** [VER]

5B 76 65 72 5D **or** [ver]

SAM Lotus AMI Pro document

5B 56 4D 44 5D **or** [VMD]

VMD VocalTec VoIP media file

[2 byte offset]

5B 56 65 72 73 69 6F [2 byte offset]

6E [Version

CIF (Unknown file type)

5B 57 69 6E 64 6F 77 [Windows

73 Latin

20 4C 61 74 69 6E 20 CPX Microsoft Code Page Translation file

5B 66 6C 74 73 69 6D [fltsim.
2E 0]
30 5D CFG Flight Simulator Aircraft Configuration file

5B 70 6C 61 79 6C 69 [playlis
73 t]
74 5D PLS WinAmp Playlist file

5D FC C8 00] üÈ.
HUS Husqvarna Designer I Embroidery Machine file

5F 27 A8 89 ' ..%
JAR Jar archive

5F 43 41 53 45 5F CASE_
CAS, CBK EnCase case file (and backup)

60 EA ` ê
ARJ Compressed archive file

62 65 67 69 6E begin
n/a UUencoded files start with a string:
begin mode path
where mode is the set of permissions as used in
Linux/Unix and path is the name given to the decoded
file. (See this [uuencode](#) page for more information.)

62 65 67 69 6E 2D 62 begin-ba
61 se64
73 65 36 34 b64 UUencoded BASE64 file
Trailer: 0A 3D 3D 3D 3D 0A (.=====.)

62 70 6C 69 73 74 bplist
plist Binary property list (plist)
(NOTE: Next two bytes are the version number, currently
0x30-30, or "00")

63 61 66 66 caff
CAF [Apple Core Audio File](#)

63 64 73 61 65 6E 63 cdsaencr
72 DMG Macintosh encrypted Disk image (v1)

63 6F 6E 65 63 74 69 conectix
78 VHD [Virtual PC Virtual HD image](#)

63 75 73 68 00 00 00 cush....
 02
 00 00 00

CSH Photoshop Custom Shape

64 00 00 00 d...

P10 Intel PROset/Wireless Profile

64 38 3A 61 6E 6E 6F d8:annou
 75
 6E 63 65 nce

TORRENT Torrent file

64 65 78 0A dex.

dex Dalvik executable file (Android)

64 6E 73 2E dns.

AU Audacity audio file

64 73 77 66 69 6C 65 dswfile

DSW Microsoft Visual Studio workspace file

65 6E 63 72 63 64 73 encrcdsa
 61

DMG Macintosh encrypted Disk image (v2)

66 49 00 00 fI..

SHD Windows NT printer spool file

66 4C 61 43 00 00 00 fLaC..."

FLAC Free Lossless Audio Codec file

[4 byte offset] [4 byte offset]
 66 74 79 70 33 67 70 ftyp3gp

3GG, 3GP, 3G2 3rd Generation Partnership Project 3GPP multimedia files

[4 byte offset]
 66 74 79 70 4D 34 41 [4 byte offset]
 20 ftypM4A

M4A Apple Lossless Audio Codec file

[4 byte offset]
 66 74 79 70 4D 34 56 [4 byte offset]
 20 ftypM4V

FLV, M4V ISO Media, MPEG v4 system, or iTunes AVC-LC file

[4 byte offset]
 66 74 79 70 4D 53 4E [4 byte offset]
 56 ftypMSNV

MP4 MPEG-4 video file

[4 byte offset]
 66 74 79 70 69 73 6F [4 byte offset]
 ftypisom

6D

MP4 ISO Base Media file (MPEG-4) v1

[4 byte offset]
 66 74 79 70 6D 70 34 [4 byte offset]
 32 ftypmp42

M4V MPEG-4 video|QuickTime file

[4 byte offset]
 66 74 79 70 71 74 20 [4 byte offset]
 20 ftypqt

MOV QuickTime movie file

67 49 00 00 gI..
 SHD Windows 2000/XP printer spool file

67 69 6d 70 20 78 63
 66 gimp xcf
 20

XCF GNU Image Manipulation Program (GIMP) eXperimental
 Computing Facility (XCF)
 image file

68 49 00 00 hI..
 SHD Windows Server 2003 printer spool file

6C 33 33 6C 1331
 DBB Skype user data file (profile and contacts)

[4 byte offset] [4 byte offset]
 6D 6F 6F 76 moov
 MOV QuickTime movie file

.MOV files have a complicated file signature. The string "moov" is the most common
 but I have also seen:

0x66-72-65-65 free
 0x6D-64-61-74 mdat
 0x77-69-64-65 wide

And the following have been reported to me:

0x70-6E-6F-74 pnot
 0x73-6B-69-70 skip

Furthermore, if you look at byte position xxxxxxxx+4 (where xxxxxxxx is bytes 0-3 of the header), you
 will find one (or more!) of these strings repeated; the string "free" **seems** to be the
 most common. For
 more information, see the [QuickTime File Format](#) page. (Thanks to D. Wright for
 getting me started on this!)

6D 73 46 69 6C 74 65 msFilter
 72 List
 4C 69 73 74

TPL Internet Explorer v11 Tracking Protection List file

6D 75 6C 74 69 42 69 multiBit
 74 .info
 2E 69 6E 66 6F INFO MultiBit Bitcoin wallet information file

6F 3C o<
 n/a Short Message Service (SMS), or text, message stored on a
 Subscriber Identification Module (SIM).

6F 70 64 61 74 61 30 opdata01
 31 n/a 1Password 4 Cloud Keychain encrypted data

72 65 67 66 regf
 DAT Windows NT registry hive file

72 69 66 66 riff
 ACD Sonic Foundry Acid Music File (Sony)

72 74 73 70 3A 2F 2F rtsp://
 RAM RealMedia metafile

73 6C 68 21 **or** slh!
 DAT Allegro Generic Packfile Data file (compressed)

73 6C 68 2E slh.
 DAT Allegro Generic Packfile Data file (uncompressed)

73 6D 5F sm_
 PDB PalmOS SuperMemo file

73 6F 6C 69 64 solid
 STL ASCII [STL \(STereoLithography\) file](#) for 3D printing.

73 72 63 64 6F 63 69 srccdocid
 64 :
 3A CAL CALS raster bitmap file

73 7A 65 7A szez
 PDB PowerBASIC Debugger Symbols file

[60 (0x3C) byte
 offset] [60 (0x3C) byte offset]
 74 42 4D 50 4B 6E 57 tBMPKnWr
 72 PRC PathWay Map file, used with GPS devices

74 72 75 65 00 true.
 TTF TrueType font file

[257 (0x101) byte [257 (0x101) byte offset]

offset]	ustar
75 73 74 61 72	TAR Tape Archive file (http://www.mkssoftware.com/docs/man4/tar.4.asp)
76 2F 31 01	v/1.
	EXR OpenEXR bitmap image format
76 32 30 30 33 2E 31	v2003.10
30	..0..
0D 0A 30 0D 0A	FLT Qimage filter
78 01 73 0D 62 62 60	x.s.bb`
	DMG Mac OS X Disk Copy Disk Image file
78 61 72 21	xar!
	XAR <u>eXtensible ARchive</u> file
7A 62 65 78	zbex
	INFO ZoomBrowser Image Index file (ZbThumbnail.info)
7B 0D 0A 6F 20	{ ..o
	LGC, LGD Windows application log
7B 5C 70 77 69	\pwi
	PWI Microsoft Windows Mobile personal note file
7B 5C 72 74 66	\rtf
	RTF Rich text format word processing file
	Trailer: 7D ()
7C 4B C3 74 E1 C8 53	KÃtÃÈS¤
A4	
79 B9 01 1D FC 4F DD	y¹..üOÝ.
13	
	CSD Huskygram, Poem, or Singer embroidery design file
7E 42 4B 00	~BK.
	PSP Corel Paint Shop Pro image file
7E 45 53 44 77 F6 85	
3E	
BF 6A D2 11 45 61 73	~ESDwÖ...>
79	¿jÒ.Easy
20 53 74 72 65 65 74	Street
20	Draw
44 72 61 77	
	ESD Easy Street Draw diagram file
7E 74 2C 01 50 70 02	~t,.Pp.M
4D	R.....
52 01 00 00 00 08 001...
00	1...C.ÿ.

00 01 00 00 31 00 00
 00 ~t,
 31 00 00 00 43 01 FF
 00
 01 00 08 00 01 00 00
 00
 7e 74 2c 01 **IMG** Reportedly a proprietary recording system, possibly a Digital Watchdog DW-TP-500G unit.

7F 45 4C 46 .ELF
 n/a [Executable and Linking Format executable file \(Linux/Unix\)](#)

80 .
 OBJ Relocatable object code

80 00 ..
 ADX [ADX](#) lossy compressed audio file

80 2A 5F D7 .*_.
 CIN Kodak Cineon image file

81 32 84 C1 85 05 D0
 11 .2„Ä...„D.
 B2 90 00 AA 00 3C F6 „...„
 76 **WAB** Outlook Express address book (Win95)

81 CD AB .Í«
 WPF WordPerfect text file

86 DD 6x †Ý{lower_case letter}
 n/a Possibly, maybe, might be a fragment of an Ethernet frame carrying an IPv6 packet. See [Hints About Looking for Network Packet Fragments](#).

89 50 4E 47 0D 0A 1A %PNG....
 0A
 PNG [Portable Network Graphics file](#)
Trailer: 49 45 4E 44 AE 42 60 82 (IEND@B` , ...)

8A 01 09 00 00 00 E1 Š.....á..
 08 ..™.
 00 00 99 19 **AW** MS Answer Wizard file

91 33 48 46 '3HF
 HAP Hamarsoft HAP 3.x compressed archive

95 00 **or**
 95 01 •.
 •.
 SKR PGP secret keyring file

97 4A 42 32 0D 0A 1A -JB2....
0A

JB2 JBOG2 image file
Trailer: 03 33 00 01 00 00 00 00 (.3.....)

99

TM

GPG GNU Privacy Guard (GPG) public keyring

99 01

TM.

PKR PGP public keyring file

9C CB CB 8D 13 75 D2
11 œËË..UÒ.
91 58 00 C0 4F 79 56 'X.ÀOyV¤
A4

WAB Outlook address file

[512 (0x200) byte offset] [512 (0x200) byte offset]
A0 46 1D F0 F.Ø

PPT PowerPoint presentation subheader (MS Office)

A1 B2 C3 D4 ;²ÀÔ
n/a tcpdump (libpcap) capture file (Linux/Unix)

A1 B2 CD 34 ;²Í4
n/a Extended tcpdump (libpcap) capture file (Linux/Unix)

A9 0D 00 00 00 00 00
00 ©.....

DAT Access Data FTK evidence file

AB 4B 54 58 20 31 31 «KTX 11»
BB
0D 0A 1A 0A

KTX [Khronos texture file](#) for OpenGL and OpenGL ES applications

AC 9E BD 8F 00 00 ¬.½...
QDF Quicken data file

AC ED ¬í
n/a Java serialization data (see [Object Serialization Stream Protocol](#))

AC ED 00 05 73 72 00
12 ¬í..sr..
62 67 62 6C 69 74 7A bgblitz.
2E

PDB BGBlitz (professional Backgammon software) position database file

B0 4D 46 43 ºMFC
PWL Windows 95 password file

B1 68 DE 3A ±hÞ:

DCX Graphics Multipage PCX bitmap file

B4 6E 68 44

'nhd

TIB Acronis True Image file (early versions)

B5 A2 B0 B3 B3 B0 A5
B5

µ¢°³³°¥µ

CAL Windows calendar file

B8 C9 0C 00

,É..

INS InstallShield Script

BE 00 00 00 AB 00 00
00
00 00 00 00 00

¾...«...

....

WRI MS Write file

BE BA FE CA 0F 50 61
6C
6D 53 47 20 44 61 74
61

¾ºþÊ.Pal

mSG Data

DAT Palm Desktop DateBook file

C3 AB CD AB

Ã«Í«

ACS MS Agent Character file

C5 D0 D3 C6

ÅÐÓÆ

EPS Adobe encapsulated PostScript file

C8 00 79 00

È.y.

LBK Jeppesen FliteLog file

CA FE BA BE

Êþº¾

CLASS Java bytecode file (also used by Apple iOS apps)

CD 20 AA AA 02 00 00
00

Í a a

n/a Norton Anti-Virus quarantined virus file

CE 24 B9 A2 20 00 00
00

Í\$¹¢

TIB Acronis True Image file (current versions)

CE CE CE CE

ÍÍÍÍ

JCEKS [Java Cryptography Extension keystore](#) file

CE FA ED FE

Íúíþ

n/a [Apple OS X ABI Mach-O](#) binary file (32-bit, where target system has reverse byte ordering from host running compiler)CF 11 E0 A1 B1 1A E1
00

Í.à;±.á.

DOC Perfect Office document

[Note similarity to MS Office header, below]

CF AD 12 FE

Í.þ

DBX Outlook Express e-mail folder

CF FA ED FE

Íúíþ

n/a Apple [OS X ABI Mach-O](#) binary file (64-bit, where target system has reverse byte ordering from host running compiler)

D0 CF 11 E0 A1 B1 1A
E1 ÐÍ.à;±.á

[DOC](#), DOT, PPS, [PPT](#), XLA, An Object Linking and Embedding (OLE) Compound File (CF)
[XLS](#), WIZ (i.e., [OLECF](#))

file format, known as *Compound Binary File format* by Microsoft, used by Microsoft Office 97-2003 applications (Word, Powerpoint, Excel, Wizard).

[See also Excel, Outlook, PowerPoint, and Word "subheaders" at byte offset 512 (0x200).]

- There appear to several subheader formats and a dearth of documentation.
- There have been reports that there are different subheaders for Windows and Mac versions of MS Office but I cannot confirm that.]
- Password-protected DOCX, XLSX, and PPTX files also use this signature those files are saved as OLECF files.
- [*Note the similarity between D0 CF 11 E0 and the word "DOCFILE"!*]

AC_ CaseWare Working Papers compressed client file

ADP Access project file

APR Lotus/IBM Approach 97 file

DB MSWorks database file

MSC Microsoft Common Console Document

MSG Microsoft Outlook/Exchange Message

MSI Microsoft Installer package

MSP Windows Installer Patch

MTW Minitab data file

MXD ArcMap GIS project file

OPT Developer Studio File Workspace Options file

PUB MS Publisher file

QBM QuickBooks Portable Company File

RVT Revit Project file

SOU Visual Studio Solution User Options file

SPO SPSS output file

VSD Visio file

WPS MSWorks text document

D2 0A 00 00

ð...

FTR GN Netttest WinPharaoh filter file

D4 2A

Ô*

ARL, AUT AOL history (ARL) and typed URL (AUT) files

D4 C3 B2 A1

ÔÃ² ;

n/a WinDump (winpcap) capture file (Windows)

D7 CD C6 9A

×ÍÆš

WMF Windows graphics metafile

DB A5 2D 00

Û¥- .

DOC Word 2.0 file

DC DC

ÜÜ

CPL Corel color palette file

DC FE

Üþ

EFX eFax file format

E3 10 00 01 00 00 00
00

ã.....

INFO Amiga Icon file

E3 82 85 96

ã,...-

PWL Windows 98 password file

E4 52 5C 7B 8C D8 A7

äR\{ŒØ\$M

4D AE B1 53 78 D0 29 96

®±SxD)-Ó

D3

ONE Microsoft OneNote note

E8 **or**

è

E9 **or**

é

EB

ë

COM, SYS Windows executable file

EB 3C 90 2A

ë<.*

IMG GEM Raster file

EB 52 90 2D 46 56 45

ëR.-FVE-

2D

FS-

46 53 2D

n/a Header of boot sector in BitLocker protected volume (Vista)

EB 58 90 2D 46 56 45

ëX.-FVE-

2D

FS-

46 53 2D

n/a Header of boot sector in BitLocker protected volume (Windows 7)

[512 (0x200) byte

[512 (0x200) byte offset]

offset]

ì¥Á.

EC A5 C1 00

DOC Word document subheader (MS Office)

ED AB EE DB

í«íÙ

RPM RedHat Package Manager file

EF BB BF

í»¿

n/a Byte-order mark (BOM) for 8-bit Unicode Transformation Format (UTF-8) files.
 (See the [Unicode Home Page](#).)

EF BB BF 3C

í»¿<

WSF Windows Script Component (UTF-8)

EF BB BF 3C 3F

í»¿<?

WSC Windows Script Component (UTF-8)

[At a cluster boundary]
 F0 FF FF

[At a cluster boundary]
 Õÿÿ

n/a FAT12 File Allocation Table

[At a cluster boundary]
 F8 FF FF FF

[At a cluster boundary]
 Øÿÿ

n/a FAT16 File Allocation Table

[At a cluster boundary]
 F8 FF FF 0F FF FF FF
 OF

[At a cluster boundary]
 Øÿÿ.ÿÿÿ.
 .

n/a FAT32 File Allocation Table

[At a cluster boundary]
 F8 FF FF 0F FF FF FF
 FF

[At a cluster boundary]
 Øÿÿ.ÿÿÿ

n/a FAT32 File Allocation Table

F9 BE B4 D9

Ù¾'Ù

DAT Bitcoin-Qt blockchain block file

FD 37 7A 58 5A 00

ÿ7zXZ.

XZ XZ archive file

[512 (0x200) byte offset]
 FD FF FF FF 02

[512 (0x200) byte offset]
 ÿÿÿÿ.

PUB MS Publisher file subheader

[512 (0x200) byte offset]
 FD FF FF FF 04

[512 (0x200) byte offset]
 ÿÿÿÿ.

QBM QuickBooks Portable Company File

SUO Visual Studio Solution User Options subheader (MS Office)

[512 (0x200) byte

[512 (0x200) byte offset]

offset] ÿÿÿÿ....
 FD FF FF FF nn nn 00
 00

PPT PowerPoint presentation subheader (MS Office)

[512 (0x200) byte offset]
 FD FF FF FF nn 00
 or
 [512 (0x200) byte offset]
 FD FF FF FF nn 00

[512 (0x200) byte offset]
 ÿÿÿÿ..
 [512 (0x200) byte offset]
 ÿÿÿÿ..

XLS Excel spreadsheet subheader (MS Office)

[512 (0x200) byte offset]
 FD FF FF FF 20 00 00
 00

[512 (0x200) byte offset]
 ÿÿÿÿ ...
 OPT Developer Studio File Workspace Options subheader (MS Office)
 XLS Excel spreadsheet subheader (MS Office)

[512 (0x200) byte offset]
 FD FF FF FF xx xx xx
 xx
 xx xx xx xx 04 00 00
 00

[512 (0x200) byte offset]
 ÿÿÿÿ....

 DB Thumbs.db subheader (MS Office)

FE ED FA CE þíúƒ
 n/a Apple [OS X ABI Mach-O](#) binary file (32-bit)

FE ED FA CF þíúƒ
 n/a Apple [OS X ABI Mach-O](#) binary file (64-bit)

FE ED FE ED þíþí
 JKS [JavaKeyStore file](#)

FE EF þí
 GHO, GHS Symantex Ghost image file

FE FF þÿ
 n/a Byte-order mark (BOM) for 16-bit Unicode Transformation Format/
 2-octet Universal Character Set (UTF-16/UCS-2), big-endian files.
 (See the [Unicode Home Page](#).)

FF ÿ
 SYS Windows executable (SYS) file

FF 00 02 00 04 04 05
 54
 02 00

ÿ.....T
 ..

WKS Works for Windows spreadsheet file

FF 0A 00 ÿ..
 QRP QuickReport Report file

FF 46 4F 4E 54 ÿFONT
 CPI Windows international code page

FF 4B 45 59 42 20 20 ÿKEYB
 20
 SYS Keyboard driver file

FF 57 50 43 ÿWPC
 WP, WPD, WPG, WPP, WP5,
 WP6 WordPerfect text and graphics file

FF D8 ÿØ
 JPE, JPEG, JPG Generic JPEGimage file
Trailer: FF D9 (ÿÙ)

NOTES on JPEG file headers: The proper JPEG header is the two-byte sequence, 0xFF-D8, aka *Start of Image (SOI)* marker.
 JPEG files end with the two-byte sequence, 0xFF-D9, aka *End of Image (EOI)* marker.

Between the SOI and EOI, JPEG files are composed of *segments*. Segments start with a two-byte *Segment Tag* followed by a two-byte *Segment Length* field and then a zero-terminated string identifier (i.e., a character string followed by a 0x00), as shown below with the JFIF, Exif, and SPIFF segments.

Segment Tags of the form 0x-FF-Ex (where x = 0..F) are referred to as APP0-APP15, and contain application-specific information. The most commonly seen APP segments at the beginning of a JPEG file are APP0 and APP1 although others are also seen. Some additional tags are shown below:

- 0xFF-D8-FF-E0 — [Standard JPEG/JFIF file](#), as shown below.
- 0xFF-D8-FF-E1 — Standard JPEG file with Exif metadata, as shown below.
- 0xFF-D8-FF-E2 — Canon Camera Image File Format (CIFF) JPEG file (formerly used by some EOS and Powershot cameras).
- 0xFF-D8-FF-E8 — [Still Picture Interchange File Format \(SPIFF\)](#), as shown below.

FF D8 FF E0 xx xx 4A ÿØÿà..JF
 46 IF.
 49 46 00
 JFIF, JPE, JPEG, JPG [JPEG/JFIF graphics file](#)
Trailer: FF D9 (ÿÙ)

FF D8 FF E1 xx xx 45 ÿØÿà..Ex
 78 if.
 69 66 00
 JPG Digital camera JPG using [Exchangeable Image File Format \(EXIF\)](#)

Trailer: FF D9 (ÿÙ)

See "[Using Extended File Information \(EXIF\) File Headers in Digital Evidence Analysis](#)" (P. Alvarez, *IJDE*, 2(3), Winter 2004) and [ExifTool Tag Names](#)

FF D8 FF E8 xx xx 53
50
49 46 46 00

ÿØÿè..SP
IFF.

JPG [Still Picture Interchange File Format \(SPIFF\)](#).

Trailer: FF D9 (ÿÙ)

FF Ex
FF Fx

ÿ.
ÿ.

MPEG, MPG, MP3 MPEG audio file frame [synch pattern](#)

FF F1

ÿñ

AAC MPEG-4 Advanced Audio Coding (AAC) Low Complexity (LC) audio file

FF F9

ÿù

AAC MPEG-2 Advanced Audio Coding (AAC) Low Complexity (LC) audio file

FF FE

ÿþ

REG Windows Registry file

n/a Byte-order mark (BOM) for 16-bit Unicode Transformation Format/
2-octet Universal Character Set (UTF-16/UCS-2), little-endian files.
(See the [Unicode Home Page](#).)

FF FE 00 00

ÿþ..

n/a Byte-order mark for 32-bit Unicode Transformation Format/
4-octet Universal Character Set (UTF-32/UCS-4), little-endian files.
(See the [Unicode Home Page](#).)

FF FE 23 00 6C 00 69
00
6E 00 65 00 20 00 31
00

ÿþ#.l.i.
n.e. .1.

MOF Windows MSinfo file

FF FF FF FF

ÿÿÿÿ

SYS DOS system driver

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Finally, Dr. Nicole Beebe from The University of Texas at San Antonio posted samples of more than 32 file types at the Digital Corpora, which I used for verification and additional signatures. These files were used to develop the [Sceadan File Type Classifier](#). The file samples can be downloaded from the [Digital Corpora](#) website.

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