WIKIPEDIA
The Free Encyclopedia

List of file signatures

This is a list of file signatures, data used to identify or verify the content of a file. Such signatures are also known as magic numbers or Magic Bytes.

Many file formats are not intended to be read as text. If such a file is accidentally viewed as a text file, its contents will be unintelligible. However, sometimes the file signature can be recognizable when interpreted as text. The column **ISO 8859-1** shows how the file signature appears when interpreted as text in the common ISO 8859-1 encoding, with unprintable characters represented as the control code abbreviation or symbol, or codepage 1252 character where available, or a box otherwise. In some cases the space character is shown as ␠ for clarity.

Hex signature	ISO 8859-1	Offset	Extension	Description
23 21	#!	0		Script or data to be passed to the program following the shebang (#!)[1]
00 00 02 00 06 04 06 00 08 00 00 00 00 00	NULNULSTXNULACKEOTACKNULACKNULNULNULNULNUL	0	wk1	Lotus 1-2-3 spreadsheet (v1) file
00 00 1A 00 00 10 04 00 00 00 00 00	NULNULSUBNULNULLFEOTNULNULNULNULNUL	0	wk3	Lotus 1-2-3 spreadsheet (v3) file
00 00 1A 00 02 10 04 00 00 00 00 00	NULNULSUBNULSTXLFEOTNULNULNULNULNUL	0	wk4 wk5	Lotus 1-2-3 spreadsheet (v4, v5) file
00 00 1A 00 05 10 04	NULNULSUBNULENQLFEOT	0	123	Lotus 1-2-3 spreadsheet (v9) file
00 00 03 F3	NULNULETXó	0		Amiga Hunk executable file
00 00 49 49 58 50 52 (little-endian) 00 00 4D 4D 58 50 52 (big-endian)	NULNULIIXPR NULNULMMXPR	0	qxd	Quark Express document
50 57 53 33	PWS3	0	psafe3	Password Gorilla Password Database
D4 C3 B2 A1 (little-endian)	ÔÃ²¡	0	pcap	Libpcap File Format[2]
A1 B2 C3 D4 (big-endian)	¡²ÃÔ			
4D 3C B2 A1 (little-endian)	M<²¡	0	pcap	Libpcap File Format (nanosecond-resolution)[2]
A1 B2 3C 4D (big-endian)	¡²<M			
0A 0D 0D 0A	LFCRCRLF	0	pcapng	PCAP Next Generation Dump File Format[3]
ED AB EE DB	í«îÛ	0	rpm	RedHat Package Manager (RPM) package[4]
53 51 4C 69 74 65 20 66 6F 72 6D 61 74 20 33 00	SQLite format 3NUL	0	sqlitedb sqlite db	SQLite Database[5]
53 50 30 31	SP01	0	bin	Amazon Kindle Update Package[6]
49 57 41 44	IWAD	0	wad	internal WAD (main resource file of Doom)[7]

Hex signature	ISO 8859-1	Offset	Extension	Description
00	␀	0	PIC PIF SEA YTR	IBM Storyboard bitmap file Windows Program Information File Mac Stuffit Self-Extracting Archive IRIS OCR data file
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	␀␀␀␀␀␀␀␀ ␀␀␀␀␀␀␀␀ ␀␀␀␀␀␀␀␀	11	PDB	PalmPilot Database/Document File
BE BA FE CA	¾ºþÊ	0	DBA	Palm Desktop Calendar Archive
00 01 42 44	␀␁BD	0	DBA	Palm Desktop To Do Archive
00 01 44 54	␀␁DT	0	TDA	Palm Desktop Calendar Archive
54 44 46 24	TDF$	0	TDF$	Telegram Desktop File
54 44 45 46	TDEF	0	TDEF	Telegram Desktop Encrypted File
00 01 00 00	␀␁␐␀	0		Palm Desktop Data File (Access format)
00 00 01 00	␀␀␁␀	0	ico	Computer icon encoded in ICO file format[8]
69 63 6e 73	icns	0	icns	Apple Icon Image format
66 74 79 70 33 67	ftyp3g	4	3gp 3g2	3rd Generation Partnership Project 3GPP and 3GPP2 multimedia files
66 74 79 70 68 65 69 666 74 79 70 6d	ftypheic	4	heic	High Efficiency Image Container (HEIC)
1F 9D	␟□	0	z tar.z	compressed file (often tar zip) using Lempel-Ziv-Welch algorithm
1F A0	␟␠	0	z tar.z	Compressed file (often tar zip) using LZH algorithm
2D 68 6C 30 2D	-lh0-	2	lzh	Lempel Ziv Huffman archive file Method 0 (No compression)
2D 68 6C 35 2D	-lh5-	2	lzh	Lempel Ziv Huffman archive file Method 5 (8KiB sliding window)

Hex signature	ISO 8859-1	Offset	Extension	Description
42 41 43 4B 4D 49 4B 45 44 49 53 4B	BACKMIKEDISK	0	bac	AmiBack Amiga Backup data file
49 4E 44 58	INDX	0	idx	AmiBack Amiga Backup index file
62 70 6C 69 73 74	bplist	0	plist	Binary Property List file
42 5A 68	BZh	0	bz2	Compressed file using Bzip2 algorithm
47 49 46 38 37 61 47 49 46 38 39 61	GIF87a GIF89a	0	gif	Image file encoded in the Graphics Interchange Format (GIF)[9]
49 49 2A 00 (little-endian)	II*NULL	0	tif tiff	Tagged Image File Format (TIFF)[10]
4D 4D 00 2A (big-endian)	MMNULL*			
49 49 2A 00 10 00 00 00 43 52	II*NULLDLENULLNULLNULLCR	0	cr2	Canon RAW Format Version 2[11] Canon's RAW format is based on TIFF.[12]
80 2A 5F D7	€*_×	0	cin	Kodak Cineon image
52 4E 43 01 52 4E 43 02	RNCSOH RNCSTX	0		Compressed file using Rob Northen Compression (https://segaretro.org/Rob_Northen_compression) (version 1 and 2) algorithm
4E 55 52 55 49 4D 47 4E 55 52 55 50 41 4C	NURUIMG NURUPAL	0	nui nup	nuru (https://github.com/domsson/nuru) ASCII/ANSI image and palette files
53 44 50 58 (big-endian format)	SDPX	0	dpx	SMPTE DPX image
58 50 44 53 (little-endian format)	XPDS			
76 2F 31 01	v/1SOH	0	exr	OpenEXR image
42 50 47 FB	BPGû	0	bpg	Better Portable Graphics format[13]
FF D8 FF DB	ÿØÿÛ	0	jpg jpeg	JPEG raw or in the JFIF or Exif file format[14]
FF D8 FF E0 00 10 4A 46 49 46 00 01	ÿØÿàNULDLEJFIFNULSOH			
FF D8 FF EE	ÿØÿî			

Hex signature	ISO 8859-1	Offset	Extension	Description
FF D8 FF E1 ?? ?? 45 78 69 66 00 00	ÿØÿá??Exif			
FF D8 FF E0	ÿØÿà	0	jpg	JPEG raw or in the JFIF or Exif file format[14]
00 00 00 0C 6A 50 20 20 0D 0A 87 0A	jP ‡	0	jp2 j2k jpf jpm jpg2 j2c jpc jpx mj2	JPEG 2000 format[15]
FF 4F FF 51	ÿOÿQ			
71 6f 69 66	qoif	0	qoi	QOI - The “Quite OK Image Format”[16]
46 4F 52 4D ?? ?? ?? ?? 49 4C 42 4D	FORM????ILBM	0 any	ilbm lbm ibm iff	IFF Interleaved Bitmap Image
46 4F 52 4D ?? ?? ?? ?? 38 53 56 58	FORM????8SVX	0 any	8svx 8sv svx snd iff	IFF 8-Bit Sampled Voice
46 4F 52 4D ?? ?? ?? ?? 41 43 42 4D	FORM????ACBM	0 any	acbm iff	Amiga Contiguous Bitmap
46 4F 52 4D ?? ?? ?? ?? 41 4E 42 4D	FORM????ANBM	0 any	anbm iff	IFF Animated Bitmap
46 4F 52 4D ?? ?? ?? ?? 41 4E 49 4D	FORM????ANIM	0 any	anim iff	IFF CEL Animation
46 4F 52 4D ?? ?? ?? ?? 46 41 58 58	FORM????FAXX	0 any	faxx fax iff	IFF Facsimile Image
46 4F 52 4D ?? ?? ?? ?? 46 54 58 54	FORM????FTXT	0 any	ftxt iff	IFF Formatted Text
46 4F 52 4D ?? ?? ?? ?? 53 4D 55 53	FORM????SMUS	0 any	smus smu mus iff	IFF Simple Musical Score
46 4F 52 4D ?? ?? ?? ?? 43 4D 55 53	FORM????CMUS	0 any	cmus mus iff	IFF Musical Score
46 4F 52 4D ?? ?? ?? ?? 59 55 56 4E	FORM????YUVN	0 any	yuvn yuv iff	IFF YUV Image

Hex signature	ISO 8859-1	Offset	Extension	Description
46 4F 52 4D ?? ?? ?? ?? 46 41 4E 54	FORM????FANT	0 any	iff	Amiga Fantavision Movie
46 4F 52 4D ?? ?? ?? ?? 41 49 46 46	FORM????AIFF	0 any	aiff aif aifc snd iff	Audio Interchange File Format
4C 5A 49 50	LZIP	0	lz	lzip compressed file[17]
30 37 30 37 30 37	070707	0	cpio	cpio archive file[18]
4D 5A	MZ	0	exe dll mui sys scr cpl ocx ax iec ime rs tsp fon efi	DOS MZ executable and its descendants (including NE and PE)
5A 4D	ZM	0	exe	DOS ZM executable and its descendants (rare)
50 4B 03 04 50 4B 05 06 (empty archive) 50 4B 07 08 (spanned archive)	PK$^{E}_{T}$$_{X}$ $^{E}_{O}$$_{T}$ PK$^{E}_{N}$$_{Q}$ $^{A}_{C}$$_{K}$ PK$^{B}_{E}$$_{L}$ $^{B}_{S}$	0	zip aar apk docx epub ipa jar kmz maff msix odp ods odt pk3 pk4 pptx usdz vsdx xlsx xpi	zip file format and formats based on it, such as EPUB, JAR, ODF, OOXML
52 61 72 21 1A 07 00	Rar!$^{S}_{U}$$_{B}$ $^{B}_{E}$$_{L}$ $^{N}_{U}$$_{L}$	0	rar	Roshal ARchive compressed archive v1.50 onwards[19]
52 61 72 21 1A 07 01 00	Rar!$^{S}_{U}$$_{B}$ $^{B}_{E}$$_{L}$ $^{S}_{O}$$_{H}$ $^{N}_{U}$$_{L}$	0	rar	Roshal ARchive compressed archive v5.00 onwards[20]
7F 45 4C 46	$^{D}_{E}$$_{L}$ELF	0		Executable and Linkable Format

Hex signature	ISO 8859-1	Offset	Extension	Description
89 50 4E 47 0D 0A 1A 0A	‰PNG ^{CR} ^{LF} ^{SUB} ^{LF}	0	png	Image encoded in the Portable Network Graphics format[21]
C9	É	0	com	CP/M 3 and higher with overlays[22]
CA FE BA BE	Êþº¾	0	class	Java class file, Mach-O Fat Binary
EF BB BF	ï»¿	0	txt *others*	UTF-8 byte order mark, commonly seen in text files.[23][24][25]
FF FE	ÿþ	0	txt *others*	UTF-16LE byte order mark, commonly seen in text files.[23][24][25]
FE FF	þÿ	0	txt *others*	UTF-16BE byte order mark, commonly seen in text files.[23][24][25]
FF FE 00 00	ÿþ^{NUL}^{NUL}	0	txt *others*	UTF-32LE byte order mark for text[23][25]
00 00 FE FF	^{NUL}^{NUL}þÿ	0	txt *others*	UTF-32BE byte order mark for text[23][25]
2B 2F 76 38 2B 2F 76 39 2B 2F 76 2B 2B 2F 76 2F	+/v8 +/v9 +/v+ +/v/	0		UTF-7 byte order mark for text[26][25]
0E FE FF	^{SO}þÿ	0	txt *others*	SCSU byte order mark for text[26][25]
DD 73 66 73	Ýsfs	0		UTF-EBCDIC byte order mark for text[26][25]
FE ED FA CE	þíúÎ	0 0x1000		Mach-O binary (32-bit)
FE ED FA CF	þíúÏ	0 0x1000		Mach-O binary (64-bit)
FE ED FE ED	þíþí	0		JKS JavakeyStore (http://hg.openjdk.java.net/jdk10/jdk10/jdk/file/777356696811/src/java.base/share/classes/sun/security/provider/JavaKeyStore.java)
CE FA ED FE	Îúíþ	0		Mach-O binary (reverse byte ordering scheme, 32-bit)[27]

Hex signature	ISO 8859-1	Offset	Extension	Description
CF FA ED FE	Ïúíþ	0		Mach-O binary (reverse byte ordering scheme, 64-bit)[27]
25 21 50 53	%!PS	0	ps	PostScript document
25 21 50 53 2D 41 64 6F 62 65 2D 33 2E 30 20 45 50 53 46 2D 33 2E 30	%!PS-Adobe-3.0 ESPF-3.0	0	eps epsf	Encapsulated PostScript file version 3.0[28]
25 21 50 53 2D 41 64 6F 62 65 2D 33 2E 31 20 45 50 53 46 2D 33 2E 30	%!PS-Adobe-3.1 ESPF-3.0	0	eps epsf	Encapsulated PostScript file version 3.1[28]
49 54 53 46 03 00 00 00 60 00 00 00	ITSF	0	chm	MS Windows HtmlHelp Data
3F 5F	?_	0	hlp	Windows 3.x/95/98 Help file
25 50 44 46 2D	%PDF-	0	pdf	PDF document[29]
30 26 B2 75 8E 66 CF 11 A6 D9 00 AA 00 62 CE 6C	0&²uŽfÏ ¦Ù ªbÎl	0	asf wma wmv	Advanced Systems Format[30]
24 53 44 49 30 30 30 31	$SDI0001	0		System Deployment Image, a disk image format used by Microsoft
4F 67 67 53	OggS	0	ogg oga ogv	Ogg, an open source media container format
38 42 50 53	8BPS	0	psd	Photoshop Document file, Adobe Photoshop's native file format
52 49 46 46 ?? ?? ?? ?? 57 41 56 45	RIFF????WAVE	0	wav	Waveform Audio File Format[31]
52 49 46 46 ?? ?? ?? ?? 41 56 49 20	RIFF????AVI	0	avi	Audio Video Interleave video format[32]
FF FB FF F3 FF F2	ÿû ÿó ÿò	0	mp3	MPEG-1 Layer 3 file without an ID3 tag or with an ID3v1 tag (which is appended at the end of the file)
49 44 33	ID3	0	mp3	MP3 file with an ID3v2 container

Hex signature	ISO 8859-1	Offset	Extension	Description
42 4D	BM	0	bmp dib	BMP file, a bitmap format used mostly in the Windows world
43 44 30 30 31	CD001	0x8001 0x8801 0x9001	iso	ISO9660 CD/DVD image file[33]
43 44 30 30 31	CD001	0x5EAC9	cdi	CD-i CD image file
6D 61 69 6E 2E 62 73	main.bs	0	mgw	Nintendo Game & Watch image file
4E 45 53	NES	0	nes	Nintendo Entertainment System image file
A0 32 41 A0 A0 A0	2A	0x165A4	d64	Commodore 64 1541 disk image (D64 format)
47 53 52 2D 31 35 34 31	GCR-1541	0	g64	Commodore 64 1541 disk image (G64 format)
A0 33 44 A0 A0	3D	0x61819	d81	Commodore 64 1581 disk image (D81 format)
43 36 34 20 74 61 70 65 20 69 6D 61 67 65 20 66 69 6C 65	C64 tape image file	0	t64	Commodore 64 tape image
43 36 34 20 43 41 52 54 52 49 44 47 45 20 20 20	C64 CARTRIDGE	0	crt	Commodore 64 cartridge image
53 49 4D 50 4C 45 20 20 3D 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 20 54	SIMPLE = T	0	fits	Flexible Image Transport System (FITS)[34]
66 4C 61 43	fLaC	0	flac	Free Lossless Audio Codec[35]
4D 54 68 64	MThd	0	mid midi	MIDI sound file[36]
D0 CF 11 E0 A1 B1 1A E1	ÐÏ à¡± á	0	doc xls ppt msi msg	Compound File Binary Format, a container format defined by Microsoft COM. It can contain the equivalent of files and directories. It is used by Windows Installer and for documents in older versions of Microsoft Office.[37]

Hex signature	ISO 8859-1	Offset	Extension	Description
				It can be used by other programs as well that rely on the COM and OLE API's.
64 65 78 0A 30 33 35 00	dex LF 035 NUL	0	dex	Dalvik Executable
4B 44 4D	KDM	0	vmdk	VMDK files[38][39]
23 20 44 69 73 6B 20 44 65 73 63 72 69 70 74 6F	# Disk Descripto	0	vmdk	VMware 4 Virtual Disk description file (split disk)
43 72 32 34	Cr24	0	crx	Google Chrome extension[40] or packaged app[41]
41 47 44 33	AGD3	0	fh8	FreeHand 8 document[42][43]
05 07 00 00 42 4F 42 4F 05 07 00 00 00 00 00 00 00 00 00 00 01	ENQ BEL NUL NUL BOBO ENQ BEL NUL NUL NUL NUL NUL NUL NUL NUL NUL NUL NUL NUL SOH	0	cwk	AppleWorks 5 document
06 07 E1 00 42 4F 42 4F 06 07 E1 00 00 00 00 00 00 00 00 00 01	ACK BEL á NUL BOBO ACK BEL á NUL NUL NUL NUL NUL NUL NUL NUL NUL NUL NUL SOH	0	cwk	AppleWorks 6 document
45 52 02 00 00 00	ER STX NUL NUL NUL	0	toast	Roxio Toast disc image file
8B 45 52 02 00 00 00	‹ER STX NUL NUL NUL			
6B 6F 6C 79	koly	end–512	dmg	Apple Disk Image file
78 61 72 21	xar!	0	xar	eXtensible ARchive format[44]
50 4D 4F 43 43 4D 4F 43	PMOCCMOC	0	dat	Windows Files And Settings Transfer Repository[45] See also USMT 3.0 (Win XP)[46] and USMT 4.0 (Win 7)[47] User Guides
4E 45 53 1A	NES SUB	0	nes	Nintendo Entertainment System ROM file[48]
75 73 74 61 72 00 30 30 75 73 74 61 72 20 20 00	ustar NUL 00 ustar SP SP NUL	257	tar	tar archive[49]

Hex signature	ISO 8859-1	Offset	Extension	Description
4F 41 52 ??	OAR?	0	oar	OAR file archive format, where ?? is the format version.
74 6F 78 33	tox3	0	tox	Open source portable voxel file[50]
4D 4C 56 49	MLVI	0	MLV	Magic Lantern Video file[51]
44 43 4D 01 50 41 33 30 50 41 33 30	DCM☺PA30 PA30	0		Windows Update Binary Delta Compression file[52]
37 7A BC AF 27 1C	7z¼¯'☺	0	7z	7-Zip File Format
1F 8B	☺‹	0	gz tar.gz	GZIP compressed file[53]
FD 37 7A 58 5A 00	ý7zXZ☺	0	xz tar.xz	XZ compression utility using LZMA2 compression
04 22 4D 18	♦"M↑	0	lz4	LZ4 Frame Format[54] Remark: LZ4 block format does not offer any magic bytes.[55]
4D 53 43 46	MSCF	0	cab	Microsoft Cabinet file
53 5A 44 44 88 F0 27 33	SZDDˆð'3	0	??_	Microsoft compressed file in Quantum format, used prior to Windows XP. File can be decompressed using Extract.exe or Expand.exe distributed with earlier versions of Windows. After compression, the last character of the original filename extension is replaced with an underscore, e.g. 'Setup.exe' becomes 'Setup.ex_'.
46 4C 49 46	FLIF	0	flif	Free Lossless Image Format
1A 45 DF A3	☺Eß£	0	mkv mka mks mk3d webm	Matroska media container, including WebM

Hex signature	ISO 8859-1	Offset	Extension	Description
4D 49 4C 20	MIL␠	0	stg	"SEAN : Session Analysis" Training file. Also used in compatible software "Rpw : Rowperfect for Windows" and "RP3W : ROWPERFECT3 for Windows".
41 54 26 54 46 4F 52 4D ?? ?? ?? ?? 44 4A 56	AT&TFORM????DJV	0	djvu djv	DjVu document The following byte is either 55 (U) for single-page or 4D (M) for multi-page documents.
30 82	0,	0	der	DER encoded X.509 certificate
2D 2D 2D 2D 2D 42 45 47 49 4E 20 43 45 52 54 49 46 49 43 41 54 45 2D 2D 2D 2D 2D	-----BEGIN CERTIFICATE-----	0	crt pem	PEM encoded X.509 certificate
2D 2D 2D 2D 2D 42 45 47 49 4E 20 43 45 52 54 49 46 49 43 41 54 45 20 52 45 51 55 45 53 54 2D 2D 2D 2D 2D	-----BEGIN CERTIFICATE REQUEST-----	0	csr pem	PEM encoded X.509 Certificate Signing Request
2D 2D 2D 2D 2D 42 45 47 49 4E 20 50 52 49 56 41 54 45 20 4B 45 59 2D 2D 2D 2D 2D	-----BEGIN PRIVATE KEY-----	0	key pem	PEM encoded X.509 PKCS#8 private key
2D 2D 2D 2D 2D 42 45 47 49 4E 20 44 53 41 20 50 52 49 56 41 54 45 20 4B 45 59 2D 2D 2D 2D 2D	-----BEGIN DSA PRIVATE KEY-----	0	key pem	PEM encoded X.509 PKCS#1 DSA private key
2D 2D 2D 2D 2D 42 45 47 49 4E 20 52 45 41 20 50 52 49 56 41 54 45 20 4B 45 59 2D 2D 2D 2D 2D	-----BEGIN RSA PRIVATE KEY-----	0	key pem	PEM encoded X.509 PKCS#1 RSA private key
50 75 54 54 59 2D 55 73 65 72 2D 4B 65 79 2D 46 69 6C 65 2D 32 3A	PuTTY-User-Key-File-2:	0	ppk	PuTTY private key file version 2

Hex signature	ISO 8859-1	Offset	Extension	Description
50 75 54 54 59 2D 55 73 65 72 2D 4B 65 79 2D 46 69 6C 65 2D 33 3A	PuTTY-User-Key-File-3:	0	ppk	PuTTY private key file version 3
2D 2D 2D 2D 2D 42 45 47 49 4E 20 4F 50 45 4E 53 53 48 20 50 52 49 56 41 54 45 20 4B 45 59 2D 2D 2D 2D 2D	-----BEGIN OPENSSH PRIVATE KEY-----	0		OpenSSH private key file
2D 2D 2D 2D 2D 42 45 47 49 4E 20 53 53 48 32 20 4B 45 59 2D 2D 2D 2D 2D	-----BEGIN SSH2 PUBLIC KEY-----	0	pub	OpenSSH public key file
44 49 43 4D	DICM	128	dcm	DICOM Medical File Format
77 4F 46 46	wOFF	0	woff	WOFF File Format 1.0 (https://www.w3.org/TR/2012/REC-WOFF-20121213/)
77 4F 46 32	wOF2	0	woff2	WOFF File Format 2.0 (https://www.w3.org/TR/WOFF2/)
3C 3F 78 6D 6C 20	<?xml ␠	0 after BOM	xml	eXtensible Markup Language[24][56]
3C 00 3F 00 78 00 6D 00 6C 00 20	<␀?␀x␀m␀l␀␠␀			
00 3C 00 3F 00 78 00 6D 00 6C 00 20	␀<␀?␀x␀m␀l␀␠			
3C 00 00 00 3F 00 00 00 78 00 00 00 6D 00 00 00 6C 00 00 00 20 00 00 00	<␀␀␀?␀␀␀x␀␀␀m␀␀␀l␀␀␀␠␀␀␀			
00 00 00 3C 00 00 00 3F 00 00 00 78 00 00 00 6D 00 00 00 6C 00 00 00 20	␀␀␀<␀␀␀?␀␀␀x␀␀␀m␀␀␀l␀␀␀␠			
4C 6F A7 94 93 40	Lo§”“@			
00 61 73 6D	␀asm	0	wasm	WebAssembly binary format[57]
CF 84 01	Ï„ ␏	0	lep	Lepton compressed JPEG image[58]
43 57 53	CWS	0	swf	Adobe Flash .swf

Hex signature	ISO 8859-1	Offset	Extension	Description
46 57 53	FWS			
21 3C 61 72 63 68 3E 0A	!<arch>␊	0	deb	linux deb file
52 49 46 46 ?? ?? ?? ?? 57 45 42 50	RIFF????WEBP	0	webp	Google WebP image file, where ?? ?? ?? ?? is the file size. More information on WebP File Header (https://developers.google.com/speed/webp/docs/riff_container#webp_file_header)
27 05 19 56	'␅␖V	0		U-Boot / uImage. Das U-Boot Universal Boot Loader.[59]
7B 5C 72 74 66 31	{\rtf1	0	rtf	Rich Text Format
54 41 50 45	TAPE	0		Microsoft Tape Format
47	G	0 0xBC 0x178 ... (every 188th byte)	ts tsv tsa mpg mpeg	MPEG Transport Stream (MPEG-2 Part 1)[60]
00 00 01 BA	␀␀␁º	0	m2p vob mpg mpeg	MPEG Program Stream (MPEG-1 Part 1 (essentially identical) and MPEG-2 Part 1)
00 00 01 B3	␀␀␁³	0	mpg mpeg	MPEG-1 video and MPEG-2 video (MPEG-1 Part 2 and MPEG-2 Part 2)
66 74 79 70 69 73 6F 6D	ftypisom	4	mp4	ISO Base Media file (MPEG-4)
66 74 79 70 4D 53 4E 56	ftypMSNV	4	mp4	MPEG-4 video file
78 01	x␏	0	zlib	No Compression (no preset dictionary)
78 5E	x^			Best speed (no preset dictionary)
78 9C	xœ			Default Compression (no preset dictionary)
78 DA	xÚ			Best Compression (no preset dictionary)

Hex signature	ISO 8859-1	Offset	Extension	Description
78 20	x SP			No Compression (with preset dictionary)
78 7D	x}			Best speed (with preset dictionary)
78 BB	x»			Default Compression (with preset dictionary)
78 F9	xù			Best Compression (with preset dictionary)
62 76 78 32	bvx2	0	lzfse	LZFSE - Lempel-Ziv style data compression algorithm using Finite State Entropy coding. OSS by Apple.[61]
4F 52 43	ORC	0	orc	Apache ORC (Optimized Row Columnar) file format
4F 62 6A 01	Obj SOH	0	avro	Apache Avro binary file format
53 45 51 36	SEQ6	0	rc	RCFile columnar file format
3C 72 6F 62 6C 6F 78 21	<roblox!	0	rbxl	Roblox place file [62]
65 87 78 56	e‡xV	0	p25 obt	PhotoCap Object Templates
55 55 AA AA	UUªª	0	pcv	PhotoCap Vector
78 56 34	xV4	0	pbt pdt pea peb pet pgt pict pjt pkt pmt	PhotoCap Template
50 41 52 31	PAR1	0		Apache Parquet columnar file format
45 4D 58 32	EMX2	0	ez2	Emulator Emaxsynth samples
45 4D 55 33	EMU3	0	ez3 iso	Emulator III synth samples
1B 4C 75 61	ESC Lua	0	luac	Lua bytecode[63]
62 6F 6F 6B 00 00 00 00 6D 61 72 6B 00 00 00 00	book NUL NUL NUL NUL mark NUL NUL NUL NUL	0	alias	macOS file Alias[64] (Symbolic link)

Hex signature	ISO 8859-1	Offset	Extension	Description
5B 5A 6F 6E 65 54 72 61 6E 73 66 65 72 5D	[ZoneTransfer]	0	Identifier	Microsoft Zone Identifier for URL Security Zones (https://technet.microsoft.com/en-us/windows/ms537183(v=vs.60))[65]
52 65 63 65 69 76 65 64 3A	Received:	0	eml	Email Message var5
20 02 01 62 A0 1E AB 07 02 00 00 00	␠␂␁b␠␞«␇␂␀␀␀	0	tde	Tableau Datasource
37 48 03 02 00 00 00 00 58 35 30 39 4B 45 59	7H␃␂␀␀␀␀X509KEY	0	kdb	KDB file
85 ?? ?? 03	…??␃	0	pgp	PGP file [66]
28 B5 2F FD	(µ/ý	0	zst	Zstandard compress[67][68]
52 53 56 4B 44 41 54 41	RSVKDATA	0	rs	QuickZip rs compressed archive[69][70]
3A 29 0A	:)␊	0	sml	Smile file
4A 6F 79 21	Joy!	0		Preferred Executable Format
31 0A 30 30	1␊00	0	srt	SubRip File
34 12 AA 55	4␒ª U	0	vpk	VPK file, used to store game data for some Source Engine games
2A 2A 41 43 45 2A 2A	**ACE**	7	ace	ACE (compressed file format)
60 EA	`ê	0	arj	ARJ
49 53 63 28	ISc(	0	cab	InstallShield CAB Archive File
4B 57 41 4A	KWAJ	0	??_	Windows 3.1x Compressed File
53 5A 44 44	SZDD	0	??_	Windows 9x Compressed File
5A 4F 4F	ZOO	0	zoo	Zoo (file format)
50 31 0A	P1␊	0	pbm	Portable bitmap ASCII
50 34 0A	P4␊	0	pbm	Portable bitmap binary
50 32 0A	P2␊	0	pgm	Portable Gray Map ASCII
50 35 0A	P5␊	0	pgm	Portable Gray Map binary

Hex signature	ISO 8859-1	Offset	Extension	Description
50 33 0A	P3␤	0	ppm	Portable Pixmap ASCII
50 36 0A	P6␤	0	ppm	Portable Pixmap binary
D7 CD C6 9A	×ÍÆš	0	wmf	Windows Metafile
67 69 6D 70 20 78 63 66	gimp xcf	0	xcf	XCF (file format)
2F 2A 20 58 50 4D 20 2A 2F	/* XPM */	0	xpm	X PixMap
41 46 46	AFF	0	aff	Advanced Forensics Format
45 56 46 32	EVF2	0	Ex01	EnCase EWF version 2 format
45 56 46	EVF	0	e01	EnCase EWF version 1 format
51 46 49	QFI	0	qcow	qcow file format
52 49 46 46 ?? ?? ?? ?? 41 43 4F 4E	RIFF????ACON	0	ani	Animated cursor
52 49 46 46 ?? ?? ?? ?? 43 44 44 41	RIFF????CDDA	0	cda	.cda file
52 49 46 46 ?? ?? ?? ?? 51 4C 43 4D	RIFF????QLCM	0	qcp	Qualcomm PureVoice file format
52 49 46 58 ?? ?? ?? ?? 46 47 44 4D (big-endian)	RIFX????FGDM	0	dcr	Adobe Shockwave[71][72][73]
58 46 49 52 ?? ?? ?? ?? 4D 44 47 46 (little-endian)	XFIR????MDGF			
52 49 46 58 ?? ?? ?? ?? 4D 56 39 33 (big-endian)	RIFX????MV93	0	dir dxr drx	Macromedia Director file format[74][72][73]
58 46 49 52 ?? ?? ?? ?? 33 39 56 4D (little-endian)	XFIR????39VM			
46 4C 56	FLV	0	flv	Flash Video file
3C 3C 3C 20 4F 72 61 63 6C 65 20 56 4D 20 56 69 72 74 75 61 6C 42 6F 78 20 44 69 73 6B 20 49 6D	<<< Oracle VM VirtualBox Disk Image >>>	0	vdi	VirtualBox Virtual Hard Disk file format

Hex signature	ISO 8859-1	Offset	Extension	Description
61 67 65 20 3E 3E 3E				
63 6F 6E 6E 65 63 74 69 78	connectix	0	vhd	Windows Virtual PC Virtual Hard Disk file format
76 68 64 78 66 69 6C 65	vhdxfile	0	vhdx	Windows Virtual PC Windows 8 Virtual Hard Disk file format
49 73 5A 21	IsZ!	0	isz	Compressed ISO image
44 41 41	DAA	0	daa	Direct Access Archive PowerISO
4C 66 4C 65	LfLe	0	evt	Windows Event Viewer file format
45 6C 66 46 69 6C 65	ElfFile	0	evtx	Windows Event Viewer XML file format
73 64 62 66	sdbf	8	sdb	Windows customized database
50 4D 43 43	PMCC	0	grp	Windows 3.x Program Manager Program Group file format
4B 43 4D 53	KCMS	0	icm	ICC profile
72 65 67 66	regf	0	dat hiv	Windows Registry file
21 42 44 4E	!BDN	0	pst	Microsoft Outlook Personal Storage Table file
44 52 41 43 4F	DRACO	0	drc	3D model compressed with Google Draco[75]
47 52 49 42	GRIB	0	grib grib2	Gridded data (commonly weather observations or forecasts) in the WMO GRIB or GRIB2 format[76]
42 4C 45 4E 44 45 52	BLENDER	0	blend	Blender File Format[77]
00 00 00 0C 4A 58 4C 20 0D 0A 87 0A	NULNULNULFF JXL SPCRLF ‡ LF	0	jxl	Image encoded in the JPEG XL format[78]
FF 0A	ÿ LF			
00 01 00 00 00	NULSOHNULNULNUL	0	ttf tte dfont	TrueType font
4F 54 54 4F	OTTO	0	otf	OpenType font[79]

Hex signature	ISO 8859-1	Offset	Extension	Description
23 25 4D 6F 64 75 6C 65	#%Module	0		Modulefile for Environment Modules[80]
4D 53 57 49 4D 00 00 00 D0 00 00 00 00	MSWIM^NUL^NUL^NULÐ^NUL^NUL^NUL^NUL	0	wim swm esd	Windows Imaging Format file
21 2D 31 53 4C 4F 42 1F	!-1SLOB^US	0	slob	Slob (sorted list of blobs) is a read-only, compressed data store with dictionary-like interface[81]
AC ED	¬í	0		Serialized Java Data[82]
43 72 65 61 74 69 76 65 20 56 6F 69 63 65 20 46 69 6C 65 1A 1A 00	Creative Voice File	0	voc	Creative Voice file
2E 73 6E 64	.snd	0	au snd	Au audio file format
DB 0A CE 00		0		OpenGL Iris Perfomer .PFB (Performer Fast Binary)[83]
48 5a 4c 52 00 00 00 18	HZLR	0	hazelrules	Noodlesoft Hazel [84]
46 4C 68 64	FLhd	0	flp	FL Studio Project File
31 30 4C 46	10LF	0	flm	FL Studio Mobile Project File
52 4b 4d 43 32 31 30	RKMC210	0		Vormetric Encryption DPM Version 2.1 Header[85]
00 01 00 00 4D 53 49 53 41 4D 20 44 61 74 61 62 61 73 65	^NUL^SOH^NUL^NULMSISAM Database	0	mny	Microsoft Money file
00 01 00 00 53 74 61 6E 64 61 72 64 20 41 43 45 20 44 42	^NUL^SOH^NUL^NULStandard ACE DB	0	accdb	Microsoft Access 2007 Database
00 01 00 00 53 74 61 6E 64 61 72 64 20 4A 65 74 20 44 42	^NUL^SOH^NUL^NULStandard Jet DB	0	mdb	Microsoft Access Database
01 FF 02 04 03 02	^SOHÿ^STX^EOT^ETX^STX	0	drw	Micrografx vector graphic file

Hex signature	ISO 8859-1	Offset	Extension	Description
02 64 73 73	␂dss	0	dss	Digital Speech Standard (Olympus, Grundig, & Phillips) v2
03 64 73 73	␃dss	0	dss	Digital Speech Standard (Olympus, Grundig, & Phillips) v3
03 00 00 00 41 50 50 52	␃␀␀␀APPR	0	adx	Approach index file
06 06 ED F5 D8 1D 46 E5 BD 31 EF E7 FE 74 B7 1D	␆␆íõØ␝Få½1ïçþt·	0	indd	Adobe InDesign document
06 0E 2B 34 02 05 01 01 0D 01 02 01 01 02	␆␎+4␂␅␁␁␍␁␂␁␁␂	0-65535 (run-in)	mxf	Material Exchange Format file
07 53 4B 46	␇SKF	0	skf	SkinCrafter skin file
07 64 74 32 64 64 74 64	␇dt2ddtd	0	dtd	DesignTools 2D Design file
0A 16 6F 72 67 2E 62 69 74 63 6F 69 6E 2E 70 72	␊␖org.bitcoin.pr	0	wallet	MultiBit Bitcoin wallet file
0D 44 4F 43	␍DOC	0	doc	DeskMate Document file
0E 4E 65 72 6F 49 53 4F	␎NeroISO	0	nri	Nero CD Compilation
0E 57 4B 53	␎WKS	0	wks	DeskMate Worksheet
0F 53 49 42 45 4C 49 55 53	␏SIBELIUS	0	sib	Sibelius Music - Score file
23 20 4D 69 63 72 6F 73 6F 66 74 20 44 65 76 65 6C 6F 70 65 72 20 53 74 75 64 69 6F	# Microsoft Developer Studio	0	dsp	Microsoft Developer Studio project file
23 21 41 4D 52	#!AMR	0	amr	Adaptive Multi-Rate ACELP (Algebraic Code Excited Linear Prediction) Codec, commonly audio format with GSM cell phones.
23 21 53 49 4C 4B 0A	#!SILK␊	0	sil	Audio compression format developed by Skype
23 3F 52 41 44 49 41 4E 43 45 0A	#?RADIANCE␊	0	hdr	Radiance High Dynamic Range image file

Hex signature	ISO 8859-1	Offset	Extension	Description
23 40 7E 5E	#@~^	0	vbe	VBScript Encoded script
0D F0 1D C0	ᶜᵏ ð♦À	0	cdb	MikroTik WinBox Connection Database (Address Book)
23 45 58 54 4D 33 55	#EXTM3U	0	m3u m3u8	Multimedia playlist
6D 64 66 00	mdfᴺᵁᴸ	0	m	M2 Archive, used by game developer M2
4B 50 4B 41	KPKA	0	pak	Capcom RE Engine game data archives
41 52 43	ARC	0	arc	Capcom MT Framework game data archives
D0 4F 50 53	ÐOPS	0	pl	Interleaf PrinterLeaf / WorldView document format (now Broadvision QuickSilver)
6E 2B 31 00	n+1	344	nii	Single file NIfTI format, used extensively in biomedical imaging.
6E 69 31 00	ni1	344	hdr	Header file of a .hdr/.img pair in NIfTI format, used extensively in biomedical imaging.
52 41 46 36 34	RAF64	0		Report Builder file from Digital Metaphors (https://www.digital-metaphors.com/)
56 49 53 33	VIS3	0		Resource file Visionaire 3.x Engine (https://www.visionaire-studio.net/)
4D 53 48 7C 42 53 48 7C	MSH| BSH|	0	hl7	Health Level Seven (HL7) Standard for electronic data exchange [1] (https://www.hl7.eu/HL7v2x/v25/std25/hl7.html)

See also

- List of file formats
- Magic number (programming)

- Substitute character (for the 1Ah (^Z) "end-of-file" marker used in many signatures)
- file (command)

References

1. "execve(2): execute program - Linux man page" (https://linux.die.net/man/2/execve). *linux.die.net*. Retrieved 2022-07-12.
2. "Libpcap File Format" (https://wiki.wireshark.org/Development/LibpcapFileFormat#Global_Header). Retrieved 2018-06-19.
3. "PCAP Next Generation Dump File Format" (https://www.winpcap.org/ntar/draft/PCAP-DumpFileFormat.html#sectionshb). Retrieved 2018-06-19.
4. "A. Format of the RPM file" (ftp://ftp.tuwien.ac.at/.vhost/www.openpkg.org/doc/book/maximum-rpm.html/node26.html). Retrieved 2017-02-15.
5. "Database File Format" (https://www.sqlite.org/fileformat.html). Retrieved 2018-11-16.
6. "GitHub - NiLuJe/KindleTool: Tool for creating/extracting Kindle updates and more" (https://github.com/NiLuJe/KindleTool). *GitHub*. Retrieved 2017-02-15.
7. "IWAD" (https://zdoom.org/wiki/IWAD). Retrieved 2022-07-05.
8. Icons (http://msdn.microsoft.com/en-us/library/ms997538.aspx) (at MSDN)
9. GRAPHICS INTERCHANGE FORMAT(sm) Version 89a (http://www.w3.org/Graphics/GIF/spec-gif89a.txt)
10. "TIFF, Revision 6.0" (https://www.loc.gov/preservation/digital/formats/fdd/fdd000022.shtml). *Sustainability of Digital Formats: Planning for Library of Congress Collections*. The Library of Congress. 2022-04-06. Retrieved 2022-07-12.
11. Computer Knowledge. "File Extension .CR2 Details" (http://filext.com/file-extension/CR2). *filext.com*.
12. "Inside the Canon RAW format version 2, understanding .CR2 file format and files produced by Canon EOS Digital Camera" (http://lclevy.free.fr/cr2/#key_info). *free.fr*.
13. Bellard, Fabrice (2015). "BPG Image format" (http://bellard.org/bpg/).
14. "Overview of JPEG 1" (https://jpeg.org/jpeg/).
15. "Overview of JPEG 2000" (https://jpeg.org/jpeg2000/).
16. "qoi-specification" (https://qoiformat.org/qoi-specification.pdf) (PDF).
17. "Lzip Compressed Format and the 'application/lzip' Media Type" (https://datatracker.ietf.org/doc/draft-diaz-lzip/). *Ietf Datatracker*. section 2.
18. "Format of cpio archives" (https://www.mkssoftware.com/docs/man4/cpio.4.asp). Retrieved 2022-07-05.
19. *TechNote.txt: RAR version 4.00 - Technical information* (Technical report). 2010-12-01. "The marker block is actually considered as a fixed byte sequence: 0x52 0x61 0x72 0x21 0x1a 0x07 0x00"
20. "RAR 5.0 archive format" (https://www.rarlab.com/technote.htm). Retrieved 2023-10-19.
21. *PNG (Portable Network Graphics) Specification Version 1.0* (https://datatracker.ietf.org/doc/html/rfc2083). IETF. doi:10.17487/RFC2083 (https://doi.org/10.17487%2FRFC2083). RFC 2083 (https://datatracker.ietf.org/doc/html/rfc2083).
22. Elliott, John C.; Lopushinsky, Jim (2002) [1998-04-11]. "CP/M 3.0 COM file header" (http://www.seasip.info/Cpm/rsxrec.html). *Seasip.info*. Archived (https://web.archive.org/web/20160830194033/http://www.seasip.info/Cpm/rsxrec.html) from the original on 2016-08-30. Retrieved 2016-08-29.
23. "Faq - Utf-8, Utf-16, Utf-32 & Bom" (https://unicode.org/faq/utf_bom.html#BOM).
24. "How to : Load XML from File with Encoding Detection" (https://odieweblog.wordpress.com/2016/04/10/how-to-load-xml-from-file-with-encoding-detection). 10 April 2016.
25. "SDL Documentation" (https://docs.sdl.com/791187/581899/sdl-contenta-5-7/representations-of-boms-by-encoding).

26. —Honerman, Tom (January 2, 2021). "Clarify guidance for use of a BOM as a UTF-8 encoding signature" (https://unicode.org/L2/L2021/21038-bom-guidance.pdf) (PDF).
27. "Mac Developer Library" (https://developer.apple.com/library/mac/#documentation/DeveloperTools/Conceptual/MachORuntime/Reference/reference.html). *apple.com*.
28. "Encapsulated PostScript (EPS) File Format, Version 3.x" (https://www.loc.gov/preservation/digital/formats/fdd/fdd000246.shtml). *Library of Congress*. 10 May 2022. Retrieved 2022-07-05.
29. "File command PDF Magic format" (https://github.com/file/file/blob/master/magic/Magdir/pdf). *GitHub*. Retrieved 2018-11-06.
30. "ASF (Advanced Systems Format)" (http://www.digitalpreservation.gov/formats/fdd/fdd000067.shtml). 6 April 2007.
31. "WAVE Audio File Format" (https://www.loc.gov/preservation/digital/formats/fdd/fdd000001.shtml). *Sustainability of Digital Formats: Planning for Library of Congress Collections*. The Library of Congress. 2022-04-19. Retrieved 2022-07-12.
32. "AVI (Audio Video Interleaved) File Format" (https://www.loc.gov/preservation/digital/formats/fdd/fdd000059.shtml). *Sustainability of Digital Formats: Planning for Library of Congress Collections*. The Library of Congress. 2016-03-09. Retrieved 2022-07-12.
33. Gary C. Kessler (21 October 2012). "File Signatures Table" (http://www.garykessler.net/library/file_sigs.html). Retrieved 28 December 2012.
34. "Flexible Image Transport System (FITS), Version 3.0 - File type signifiers" (https://www.loc.gov/preservation/digital/formats/fdd/fdd000317.shtml#sign). *Library of Congress*. 2012-09-26. Retrieved 16 June 2021.
35. Josh Coalson. "FLAC — format" (https://xiph.org/flac/format.html#stream). Retrieved 16 June 2021. " "fLaC", the FLAC stream marker in ASCII, meaning byte 0 of the stream is 0x66, followed by 0x4C 0x61 0x43"
36. "File Signature Database: mid File Signatures" (https://filesignatures.net/index.php?search=mid&mode=EXT). *filesignatures.net*.
37. "Developing a tool to recognise MS Office file types (.doc, .xls, .mdb, .ppt)" (https://web.archive.org/web/20140809205308/http://social.msdn.microsoft.com/Forums/en-US/343d09e3-5fdf-4b4a-9fa6-8ccb37a35930/developing-a-tool-to-recognise-ms-office-file-types-doc-xls-mdb-ppt-?forum=os_binaryfile). *social.msdn.microsoft.com*. Archived from the original (http://social.msdn.microsoft.com/Forums/en-US/343d09e3-5fdf-4b4a-9fa6-8ccb37a35930/developing-a-tool-to-recognise-ms-office-file-types-doc-xls-mdb-ppt-?forum=os_binaryfile) on 2014-08-09. Retrieved 2014-07-28.
38. "What Files Make Up a Virtual Machine?" (https://www.vmware.com/support/ws55/doc/ws_learning_files_in_a_vm.html). *VMware*.
39. "VMware Virtual Disks Virtual Disk Format 1.1" (http://www.vmware.com/app/vmdk/?src=vmdk). *VMware*.
40. "CRX Package Format" (https://developer.chrome.com/extensions/crx.html). *chrome.com*.
41. "CRX Package Format" (https://developer.chrome.com/apps/crx.html). *chrome.com*.
42. "[Pythonmac-SIG] Discovering file type" (https://mail.python.org/pipermail/pythonmac-sig/2005-February/013028.html). *python.org*. 10 February 2005.
43. Kehl, Ken. "Re: What is the suffix for Freehand files?" (https://groups.google.com/g/macromedia.freehand/c/g6bGwP-YYks/m/4m2Xfk--7VkJ). *Google Groups*.
44. "xar - xarformat.wiki" (https://code.google.com/p/xar/wiki/xarformat). *code.google.com*.
45. "Easily Restore Your Computer With File and Settings Transfer Wizard XP (Part 1)" (https://www.howtogeek.com/79820/easily-restore-your-computer-with-file-and-settings-transfer-wizard-xp-part-1/). *howtogeek.com*. 27 August 2007.
46. "User State Migration Tool 3.0" (https://technet.microsoft.com/en-us/library/cc722032%28v=ws.10%29.aspx). *microsoft.com*. Microsoft.

47. "User State Migration Tool 4.0 User's Guide" (https://technet.microsoft.com/en-us/library/dd560801.aspx). *microsoft.com*. Microsoft. 29 June 2010.
48. "NESRomTool::NES ROM Quickstart" (http://sadistech.com/nesromtool/romdoc.html). *sadistech.com*.
49. "GNU tar 1.28: Basic Tar Format" (https://www.gnu.org/software/tar/manual/html_node/Standard.html). *gnu.org*.
50. "UVOX Universal Voxel Translator - Man Page" (https://web.archive.org/web/20160508202038/http://tox.land/uvox/man.html). *tox.land*. Archived from the original (http://tox.land/uvox/man.html) on 2016-05-08. Retrieved 2015-06-29.
51. "RAW Format v2.0 - Google Sheets" (https://docs.google.com/spreadsheet/ccc?key=0AgQ2MOkAZTFHdHJraTVTOEpmNEIwTVlKd0dHVi1ULUE#gid=0). *google.com*.
52. "Using Binary Delta Compression (BDC) Technology to Update Windows Operating Systems" (http://www.microsoft.com/en-us/download/details.aspx?id=1562). Microsoft. 10 June 2005. Retrieved 15 March 2015.
53. Deutsch, L. Peter (May 1996). "Member header and trailer" (https://datatracker.ietf.org/doc/html/rfc1952#page-6). *GZIP file format specification version 4.3* (https://datatracker.ietf.org/doc/html/rfc1952). p. 6. doi:10.17487/RFC1952 (https://doi.org/10.17487%2FRFC1952). RFC 1952 (https://datatracker.ietf.org/doc/html/rfc1952). Retrieved 2018-10-29.
54. Collet, Yann (19 November 2021). "LZ4 Frame format" (https://github.com/lz4/lz4/blob/dev/doc/lz4_Frame_format.md). *github.com*.
55. Collet, Yann (19 November 2021). "LZ4 Block Format" (https://github.com/lz4/lz4/blob/dev/doc/lz4_Block_format.md). *github.com*.
56. "Extensible Markup Language (XML) 1.0 (Fifth Edition)" (https://www.w3.org/TR/xml/#sec-guessing-no-ext-info).
57. "WebAssembly/design" (https://github.com/WebAssembly/design/blob/master/BinaryEncoding.md#high-level-structure). *GitHub*. Retrieved 2016-11-01.
58. "Lepton image compression: saving 22% losslessly from images at 15MB/s" (https://blogs.dropbox.com/tech/2016/07/lepton-image-compression-saving-22-losslessly-from-images-at-15mbs/). *Dropbox*.
59. "How to Extract an uImage" (https://web.archive.org/web/20170225051131/http://buffalo.nas-central.org/wiki/How_to_Extract_an_uImage). Archived from the original (http://buffalo.nas-central.org/wiki/How_to_Extract_an_uImage) on 2017-02-25. Retrieved 2017-02-24.
60. "An introduction to MPEG-TS" (https://tsduck.io/download/docs/mpegts-introduction.pdf) (PDF).
61. "lzfse/lzfse" (https://github.com/lzfse/lzfse). *GitHub*. Retrieved 2018-10-16.
62. "ROBLOX File Format" (https://www.classy-studios.com/Downloads/RobloxFileSpec.pdf) (PDF). *www.classy-studios.com*. Retrieved 5 September 2023.
63. Laurie, Dirk (2013). "Lua 5.2 Bytecode and Virtual Machine" (http://files.catwell.info/misc/mirror/lua-5.2-bytecode-vm-dirk-laurie/lua52vm.html).
64. "Mac OS X - ForensicsWiki" (https://www.forensicswiki.org/wiki/Mac_OS_X#Burn_Folder). *www.forensicswiki.org*. Retrieved 2018-09-22.
65. "libyal/libfsntfs" (https://github.com/libyal/libfsntfs/blob/master/documentation/New%20Technologies%20File%20System%20(NTFS).asciidoc). *GitHub*. Retrieved 2018-09-22.
66. "gnupg - Is it a coincidence that the first 4 bytes of a PGP/GPG file are ellipsis, smile, female sign and a heart? - Information Security Stack Exchange)" (https://security.stackexchange.com/a/144555/12109). *security.stackexchange.com*. Retrieved 2020-06-05.

67. Collet, Yann; Kucherawy, Murray (October 2018). "Zstandard Frames" (https://datatracker.ietf.org/doc/html/rfc8478#section-3.1.1). *Zstandard Compression and the application/zstd Media Type* (https://datatracker.ietf.org/doc/html/rfc8478). sec. 3.1.1. doi:10.17487/RFC8478 (https://doi.org/10.17487%2FRFC8478). RFC 8478 (https://datatracker.ietf.org/doc/html/rfc8478). Retrieved 2018-10-29.
68. "Magic numbering scheme (zstd project issue tracker)" (https://github.com/facebook/zstd/issues/768). *GitHub*. Retrieved 2018-10-29.
69. "RS File Extension" (https://filext.com/file-extension/RS). *filext.com*. Retrieved 2020-09-18.
70. "Quickzip.org (WebArchive)" (https://web.archive.org/web/20050403233040/http://www.quickzip.org/help/). Archived from the original (http://www.quickzip.org/help/) on 2005-04-03. Retrieved 2020-09-18.
71. "DCR format - reverseShockwave" (https://sites.google.com/site/reverseshockwave/home/dcr-format).
72. "Shockwave (Director)" (https://web.archive.org/web/20200211184445/http://fileformats.archiveteam.org/wiki/Shockwave_(Director)). *fileformats.archiveteam.org*. Archived from the original (http://fileformats.archiveteam.org/wiki/Shockwave_(Director)) on 11 February 2020. Retrieved 15 January 2022.
73. "Projector EXE to Shockwave DCR" (https://docs.google.com/presentation/d/1pc-f2b4uB0qTFsvQ9XayQt3NYd6ARClPSS8ikOLtzbU/htmlpresent).
74. "Dir format - reverseShockwave" (https://sites.google.com/site/reverseshockwave/home/dir-format).
75. "Draco Bitstream Specification" (https://google.github.io/draco/spec/). *google.github.io*. Archived (https://web.archive.org/web/20210118162812/https://google.github.io/draco/spec/) from the original on 2021-01-18. Retrieved 2021-01-18.
76. "A GUIDE TO THE CODE FORM FM 92-IX Ext. GRIB" (https://web.archive.org/web/20210502163758/https://www.wmo.int/pages/prog/www/WDM/Guides/Guide-binary-2.html). Archived from the original (https://www.wmo.int/pages/prog/www/WDM/Guides/Guide-binary-2.html) on 2021-05-02. Retrieved 2021-05-02.
77. "The mystery of the blend" (https://web.archive.org/web/20150418144220/http://www.atmind.nl/blender/mystery_ot_blend.html). 2015-04-18. Archived from the original (https://www.atmind.nl/blender/mystery_ot_blend.html) on 2015-04-18. Retrieved 2021-05-07.
78. "GitHub - JPEG/JPEG XL Reference Software" (https://github.com/libjxl/libjxl/blob/c98f133f3f5e456caaa2ba00bc920e923b713abc/lib/jxl/decode.cc#L107-L138). *github.com*. Retrieved 2021-08-11.
79. "The OpenType Font File" (https://docs.microsoft.com/en-us/typography/opentype/spec/otff). *docs.microsoft.com*. 9 December 2021. Retrieved 2022-02-07.
80. "Environment Modules Documentation: modulefile" (https://modules.readthedocs.io/en/latest/modulefile.html). Retrieved 2021-08-19.
81. *GitHub - itkach/slob: Data store for Aard 2 (https://github.com/itkach/slob)*
82. "Java Object Serialization Specification: 6 - Object Serialization Stream Protocol" (https://docs.oracle.com/javase/7/docs/platform/serialization/spec/protocol.html).
83. "J3k0/OpenPFB" (https://github.com/j3k0/OpenPFB/blob/40d3bb13f672f50beca921aea581684d218fd989/OpenPfb.h#L370). *GitHub*. 25 June 2022.
84. "Noodlesoft – Noodlesoft – Simply Useful Software" (https://www.noodlesoft.com/). *www.noodlesoft.com*. Retrieved 2022-07-24.
85. IBM. "Thales Vormetric Data Security Platform" (https://www.ibm.com/support/pages/system/files/inline-files/$FILE/VDS_6.2.0_VAE_Install_API_Guide.pdf) (PDF). *IBM*.

External links

- Gary Kessler's list of file signatures (http://www.garykessler.net/library/file_sigs.html)

- Online File Signature Database for Forensic Practitioners, a private compilation free to Law Enforcement (http://www.filesig.co.uk/ofsdb.html)
- Man page for compress, uncompress, and zcat on SCO Open Server (https://web.archive.org/web/20100502014229/http://docsrv.sco.com:507/en/man/html.C/compress.C.html)
- Public Database of File Signatures (https://www.filesignatures.net/)
- Complete list of magic numbers with sample files (http://asecuritysite.com/forensics/magic)
- the original libmagic data files with thousands of entries (https://github.com/file/file/tree/master/magic/Magdir) as used by file (command)

-