LZX (algorithm)

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(Redirected from LZX)

LZX is also the name of the programming language used in the OpenLaszlo platform

LZX is the name of an LZ77 family compression algorithm. It is also the name of a file archiver with the same name. Both were invented by Jonathan Forbes and Tomi Poutanen.

Instances of use of the LZX algorithm [edit]

Amiga LZX [edit]

LZX was publicly released as an Amiga file archiver in 1995, while the authors were studying at the University of Waterloo in Canada. The software was shareware, which was common for compression software at the time. The registered version contained fixes and improvements not available in the evaluation version. In 1997, the authors gave away a free keyfile, which allowed anyone to use the registered version, as they had stopped work on the archiver and stopped accepting registrations.

Microsoft Cabinet files [edit]

In 1996, Forbes went to work for Microsoft,[1] and Microsoft's cabinet archiver was enhanced to include the LZX compression method. Improvements included a variable search window size; Amiga LZX was fixed to 64kB, Microsoft LZX could range on powers of two between 32 and 2048 kilobytes. A special preprocessor was added to detect Intel 80x86 "CALL" instructions, converting their operands from relative addressing to absolute addressing, thus calls to the same location resulted in repeated strings that the compressor could match, improving compression of 80x86 binary code.

Microsoft Compressed HTML Help (CHM) files [edit]

When Microsoft introduced Microsoft Compressed HTML Help, the replacement to their classic Help file format, they chose to compress all of the HTML data with the LZX algorithm. However, in order to improve random access speed, the compressor was altered to reset itself after every 64 kilobyte interval and re-align to a 16-bit boundary after every 32 kilobyte interval. Thus, the HTMLHelp software could immediately seek to the nearest 64 kilobyte interval and start decoding from there, rather than decoding from the beginning of the compressed datastream at all times.

Microsoft Reader (LIT) files [edit]

Microsoft LIT files for Microsoft Reader are simply an extension of the CHM file format, and thus also use LZX compression.

Windows Imaging Format (WIM) files [edit]

Windows Imaging Format, the installation/drive image file format of Windows Vista and Windows 7, uses LZX as one of the compression methods.[2]

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Xbox Live Avatars [edit]

Microsoft uses LZX compression on Xbox Live Avatars to reduce their disk and bandwidth requirements.[3]

Decompressing LZX files [edit]

The **unlzx** program can unpack Amiga LZX archives. The **cabextract** program can unpack Microsoft cabinet files using the LZX method. There are a multitude of cross-platform tools for decompiling or viewing CHM files, as stated in the CHM article. LIT files can be unpacked using the **Convert LIT** software.

See also [edit]

- List of archive formats
- Comparison of file archivers

References [edit]

1. ^ http://www.linkedin.com/pub/jonathan-forbes/3/70a/a4b
2. ^ http://www.apcstart.com/site/jbannan/2006/07/759/build-your-own-vista-install-dvd
3. ^ http://www.xbox.com/en-US/live/engineeringblog/xbox-live-avatar-technology.htm

External links [edit]

- The LZX page, including many versions of the Amiga LZX archiver
- unlzx source code
- cabextract (includes source code)
- Convert LIT (includes source code)
- Microsoft's LZX DELTA specification

v · t · e	Data compression methods [hide]	
Lossless	Entropy type	Unary · Arithmetic · Golomb · Huffman (Adaptive · Canonical · Modified) · Range · Shannon · Shannon–Fano · Shannon–Fano–Elias · Tunstall · Universal (Exp-Golomb · Fibonacci · Gamma · Levenshtein)
	Dictionary type	Byte pair encoding · DEFLATE · Lempel–Ziv (LZ77 / LZ78 (LZ1 / LZ2) · LZJB · LZMA · LZO · LZRW · LZS · LZSS · LZW · LZWL · **LZX** · LZ4 · Statistical)
	Other types	BWT · CTW · Delta · DMC · MTF · PAQ · PPM · RLE
Audio	Concepts	Bit rate (average (ABR) · constant (CBR) · variable (VBR)) · Companding · Convolution · Dynamic range · Latency · Nyquist–Shannon theorem · Sampling · Sound quality · Speech coding · Sub-band coding
	Codec parts	A-law · μ-law · ACELP · ADPCM · CELP · DPCM · Fourier transform · LPC (LAR · LSP) · MDCT · Psychoacoustic model · WLPC
Image	Concepts	Chroma subsampling · Coding tree unit · Color space · Compression artifact · Image resolution · Macroblock · Pixel · PSNR · Quantization · Standard test image
	Methods	Chain code · DCT · EZW · Fractal · KLT · LP · RLE · SPIHT · Wavelet
Video	Concepts	Bit rate (average (ABR) · constant (CBR) · variable (VBR)) · Display resolution · Frame · Frame rate · Frame types · Interlace · Video characteristics · Video quality
	Codec parts	Lapped transform · DCT · Deblocking filter · Motion compensation
Theory	Entropy · Kolmogorov complexity · Lossy · Quantization · Rate–distortion · Redundancy · Timeline of information theory	
Compression formats · Compression software (codecs)		

Categories: Amiga | Lossless compression algorithms