

DCMTK - Bug #1103

DCMTK symbols conflict with recent versions of libjpeg-turbo

2024-01-24 16:15 - Marco Eichelberg

Status:	Closed	Start date:	2024-01-24
Priority:	Normal	Due date:	
Assignee:	Marco Eichelberg	% Done:	100%
Category:		Estimated time:	2:00 hours
Target version:		Compiler:	
Module:	dcmjpeg		
Operating System:			

Description

The most recent versions ($\geq 3.0.0$) of libjpeg-turbo have added support for lossless compression. To this end, libjpeg-turbo has added new bitwidth-prefixed functions to their API:
<https://github.com/libjpeg-turbo/libjpeg-turbo/blob/3.0.1/libjpeg.txt#L114>

These functions share the same prefixes that are used in DCMTK's source-distributed version of the ijj-libjpeg variant. In some configurations, this poses a problem, since linking DCMTK against libtiff with jpeg support through libjpeg-turbo will cause duplicate definitions of those clashing symbols to be available.

Here is a pull request for vcpkg to resolve this issue by prefixing the DCMTK provided libjpeg library with "dcmktk_":
<https://github.com/microsoft/vcpkg/pull/36274>

Essentially the pull request changes the defines already present by prefixing them with "dcmktk_", shown here for dcmjpeg/libijg8/jpeglib8.h. Analog changes need to be made in jpeglib12.h and jpeglib16.h:

```
#define jcopy_block_row
#define jcopy_sample_rows
#define jdiv_round_up
#define jinit_1pass_quantizer
#define jinit_2pass_quantizer
#define jinit_arith_decoder
#define jinit_arith_encoder
#define jinit_c_codec
#define jinit_c_coef_controller
#define jinit_c_diff_controller
#define jinit_c_main_controller
#define jinit_c_master_control
#define jinit_c_prep_controller
#define jinit_c_scaler
#define jinit_color_converter
#define jinit_color_deconverter
#define jinit_compress_master
#define jinit_d_codec
#define jinit_d_coef_controller
#define jinit_d_diff_controller
#define jinit_d_main_controller
#define jinit_d_post_controller
#define jinit_d_post_controller
#define jinit_d_scaler
#define jinit_differencer
#define jinit_downsampler
#define jinit_forward_dct
#define jinit_input_controller
#define jinit_inverse_dct
#define jinit_lhuff_decoder
#define jinit_lhuff_encoder
#define jinit_lossless_c_codec
#define jinit_lossless_d_codec
#define jinit_lossy_c_codec
#define jinit_lossy_d_codec
#define jinit_marker_reader
```

```
dcmktk_jcopy8_block_row
dcmktk_jcopy8_sample_rows
dcmktk_jdiv8_round_up
dcmktk_jinit8_1pass_quantizer
dcmktk_jinit8_2pass_quantizer
dcmktk_jinit8_arith_decoder
dcmktk_jinit8_arith_encoder
dcmktk_jinit8_c_codec
dcmktk_jinit8_c_coef_controller
dcmktk_jinit8_c_diff_controller
dcmktk_jinit8_c_main_controller
dcmktk_jinit8_c_master_control
dcmktk_jinit8_c_prep_controller
dcmktk_jinit8_c_scaler
dcmktk_jinit8_color_converter
dcmktk_jinit8_color_deconverter
dcmktk_jinit8_compress_master
dcmktk_jinit8_d_codec
dcmktk_jinit8_d_coef_controller
dcmktk_jinit8_d_diff_controller
dcmktk_jinit8_d_main_controller
dcmktk_jinit8_d_post_controller
dcmktk_jinit8_d_post_controller
dcmktk_jinit8_d_scaler
dcmktk_jinit8_differencer
dcmktk_jinit8_downsampler
dcmktk_jinit8_forward_dct
dcmktk_jinit8_input_controller
dcmktk_jinit8_inverse_dct
dcmktk_jinit8_lhuff_decoder
dcmktk_jinit8_lhuff_encoder
dcmktk_jinit8_lossless_c_codec
dcmktk_jinit8_lossless_d_codec
dcmktk_jinit8_lossy_c_codec
dcmktk_jinit8_lossy_d_codec
dcmktk_jinit8_marker_reader
```

#define jinit_marker_writer	dcmtk_jinit8_marker_writer
#define jinit_master_decompress	dcmtk_jinit8_master_decompress
#define jinit_memory_mgr	dcmtk_jinit8_memory_mgr
#define jinit_merged_upsampler	dcmtk_jinit8_merged_upsampler
#define jinit_phuff_decoder	dcmtk_jinit8_phuff_decoder
#define jinit_phuff_encoder	dcmtk_jinit8_phuff_encoder
#define jinit_shuff_decoder	dcmtk_jinit8_shuff_decoder
#define jinit_shuff_encoder	dcmtk_jinit8_shuff_encoder
#define jinit_undifferencer	dcmtk_jinit8_undifferencer
#define jinit_upsampler	dcmtk_jinit8_upsampler
#define jpeg_CreateCompress	dcmtk_jpeg8_CreateCompress
#define jpeg_CreateDecompress	dcmtk_jpeg8_CreateDecompress
#define jpeg_abort	dcmtk_jpeg8_abort
#define jpeg_abort_compress	dcmtk_jpeg8_abort_compress
#define jpeg_abort_decompress	dcmtk_jpeg8_abort_decompress
#define jpeg_add_quant_table	dcmtk_jpeg8_add_quant_table
#define jpeg_alloc_huff_table	dcmtk_jpeg8_alloc_huff_table
#define jpeg_alloc_quant_table	dcmtk_jpeg8_alloc_quant_table
#define jpeg_calc_output_dimensions	dcmtk_jpeg8_calc_output_dimensions
#define jpeg_consume_input	dcmtk_jpeg8_consume_input
#define jpeg_copy_critical_parameters	dcmtk_jpeg8_copy_critical_parameters
#define jpeg_default_colorspace	dcmtk_jpeg8_default_colorspace
#define jpeg_destroy	dcmtk_jpeg8_destroy
#define jpeg_destroy_compress	dcmtk_jpeg8_destroy_compress
#define jpeg_destroy_decompress	dcmtk_jpeg8_destroy_decompress
#define jpeg_fdct_float	dcmtk_jpeg8_fdct_float
#define jpeg_fdct_ifast	dcmtk_jpeg8_fdct_ifast
#define jpeg_fdct_islow	dcmtk_jpeg8_fdct_islow
#define jpeg_fill_bit_buffer	dcmtk_jpeg8_fill_bit_buffer
#define jpeg_finish_compress	dcmtk_jpeg8_finish_compress
#define jpeg_finish_decompress	dcmtk_jpeg8_finish_decompress
#define jpeg_finish_output	dcmtk_jpeg8_finish_output
#define jpeg_free_large	dcmtk_jpeg8_free_large
#define jpeg_free_small	dcmtk_jpeg8_free_small
#define jpeg_gen_optimal_table	dcmtk_jpeg8_gen_optimal_table
#define jpeg_get_large	dcmtk_jpeg8_get_large
#define jpeg_get_small	dcmtk_jpeg8_get_small
#define jpeg_has_multiple_scans	dcmtk_jpeg8_has_multiple_scans
#define jpeg_huff_decode	dcmtk_jpeg8_huff_decode
#define jpeg_idct_1x1	dcmtk_jpeg8_idct_1x1
#define jpeg_idct_2x2	dcmtk_jpeg8_idct_2x2
#define jpeg_idct_4x4	dcmtk_jpeg8_idct_4x4
#define jpeg_idct_float	dcmtk_jpeg8_idct_float
#define jpeg_idct_ifast	dcmtk_jpeg8_idct_ifast
#define jpeg_idct_islow	dcmtk_jpeg8_idct_islow
#define jpeg_input_complete	dcmtk_jpeg8_input_complete
#define jpeg_make_c_derived_tbl	dcmtk_jpeg8_make_c_derived_tbl
#define jpeg_make_d_derived_tbl	dcmtk_jpeg8_make_d_derived_tbl
#define jpeg_mem_available	dcmtk_jpeg8_mem_available
#define jpeg_mem_init	dcmtk_jpeg8_mem_init
#define jpeg_mem_term	dcmtk_jpeg8_mem_term
#define jpeg_new_colormap	dcmtk_jpeg8_new_colormap
#define jpeg_open_backing_store	dcmtk_jpeg8_open_backing_store
#define jpeg_quality_scaling	dcmtk_jpeg8_quality_scaling
#define jpeg_read_coefficients	dcmtk_jpeg8_read_coefficients
#define jpeg_read_header	dcmtk_jpeg8_read_header
#define jpeg_read_raw_data	dcmtk_jpeg8_read_raw_data
#define jpeg_read_scanlines	dcmtk_jpeg8_read_scanlines
#define jpeg_resync_to_restart	dcmtk_jpeg8_resync_to_restart
#define jpeg_save_markers	dcmtk_jpeg8_save_markers
#define jpeg_set_colorspace	dcmtk_jpeg8_set_colorspace
#define jpeg_set_defaults	dcmtk_jpeg8_set_defaults
#define jpeg_set_linear_quality	dcmtk_jpeg8_set_linear_quality
#define jpeg_set_marker_processor	dcmtk_jpeg8_set_marker_processor
#define jpeg_set_quality	dcmtk_jpeg8_set_quality
#define jpeg_simple_lossless	dcmtk_jpeg8_simple_lossless
#define jpeg_simple_progression	dcmtk_jpeg8_simple_progression

```
#define jpeg_start_compress      dcmtdk_jpeg8_start_compress
#define jpeg_start_decompress    dcmtdk_jpeg8_start_decompress
#define jpeg_start_output        dcmtdk_jpeg8_start_output
#define jpeg_std_error           dcmtdk_jpeg8_std_error
#define jpeg_stdio_dest          dcmtdk_jpeg8_stdio_dest
#define jpeg_stdio_src           dcmtdk_jpeg8_stdio_src
#define jpeg_suppress_tables     dcmtdk_jpeg8_suppress_tables
#define jpeg_write_coefficients  dcmtdk_jpeg8_write_coefficients
#define jpeg_write_m_byte        dcmtdk_jpeg8_write_m_byte
#define jpeg_write_m_header      dcmtdk_jpeg8_write_m_header
#define jpeg_write_marker        dcmtdk_jpeg8_write_marker
#define jpeg_write_raw_data      dcmtdk_jpeg8_write_raw_data
#define jpeg_write_scanlines     dcmtdk_jpeg8_write_scanlines
#define jpeg_write_tables        dcmtdk_jpeg8_write_tables
#define jround_up                dcmtdk_jround8_up
#define jzero_far                dcmtdk_jzero8_far
```

Issue report and pull request provided 2024-01-23 by Kevin Leonardic <kevin@leonardic.de>.

History

#1 - 2024-05-25 18:07 - Marco Eichelberg

- Status changed from New to Closed
- Assignee set to Marco Eichelberg
- % Done changed from 0 to 100
- Estimated time set to 2:00 h

Closed by commit #5195244f5.