

Reference Manual

2.0.14

Generated by Doxygen 1.8.13

Contents

1	Reference Manual (Version 2.0.14)	1
1.1	Introduction	1
1.2	License	1
1.3	Reporting Bugs	2
2	Getting Started	3
2.1	Installation	3
2.2	Organization of the Manual	5
3	Frequently Asked Questions (FAQ)	7
4	Known Bugs	9

Chapter 1

Reference Manual (Version 2.0.14)

1.1 Introduction

JasPer is a collection of software (i.e., a library and application programs) for the coding and manipulation of images. This software can handle image data in a variety of formats. One such format supported by JasPer is the JPEG-2000 format defined in ISO/IEC 15444-1. This software was developed by [Michael Adams](#) from the Department of Electrical and Computer Engineering at the University of Victoria, Victoria, BC, Canada.

1.2 License

JasPer License Version 2.0

Copyright (c) 2001-2016 Michael David Adams
Copyright (c) 1999-2000 Image Power, Inc.
Copyright (c) 1999-2000 The University of British Columbia

All rights reserved.

Permission is hereby granted, free of charge, to any person (the "User") obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions:

1. The above copyright notices and this permission notice (which includes the disclaimer below) shall be included in all copies or substantial portions of the Software.
2. The name of a copyright holder shall not be used to endorse or promote products derived from the Software without specific prior written permission.

THIS DISCLAIMER OF WARRANTY CONSTITUTES AN ESSENTIAL PART OF THIS LICENSE. NO USE OF THE SOFTWARE IS AUTHORIZED HEREUNDER EXCEPT UNDER THIS DISCLAIMER. THE SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO

EVENT SHALL THE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. NO ASSURANCES ARE PROVIDED BY THE COPYRIGHT HOLDERS THAT THE SOFTWARE DOES NOT INFRINGE THE PATENT OR OTHER INTELLECTUAL PROPERTY RIGHTS OF ANY OTHER ENTITY. EACH COPYRIGHT HOLDER DISCLAIMS ANY LIABILITY TO THE USER FOR CLAIMS BROUGHT BY ANY OTHER ENTITY BASED ON INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS OR OTHERWISE. AS A CONDITION TO EXERCISING THE RIGHTS GRANTED HEREUNDER, EACH USER HEREBY ASSUMES SOLE RESPONSIBILITY TO SECURE ANY OTHER INTELLECTUAL PROPERTY RIGHTS NEEDED, IF ANY. THE SOFTWARE IS NOT FAULT-TOLERANT AND IS NOT INTENDED FOR USE IN MISSION-CRITICAL SYSTEMS, SUCH AS THOSE USED IN THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL SYSTEMS, DIRECT LIFE SUPPORT MACHINES, OR WEAPONS SYSTEMS, IN WHICH THE FAILURE OF THE SOFTWARE OR SYSTEM COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE ("HIGH RISK ACTIVITIES"). THE COPYRIGHT HOLDERS SPECIFICALLY DISCLAIM ANY EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR HIGH RISK ACTIVITIES.

1.3 Reporting Bugs

All bug reports should be submitted via the issue-tracking system provided by GitHub. To submit a bug report, go to the following URL and click on the "New issue" button:

<https://github.com/mdadams/jasper/issues>

Please do not submit bug reports directly to the author of JasPer via email, as bug reports that are not submitted via the above issue-tracking system on GitHub are easy to be lost.

Chapter 2

Getting Started

The following sections are useful for getting started with the Jasper software:

- [Installation](#). Describes how to install the Jasper software.
- [Organization of the Manual](#). Briefly explains the organization of the manual (e.g., where to find things).

2.1 Installation

Installation
=====

The process required to install Jasper is described below.

Installation on Systems Running Unix

In what follows, let `$SOURCE_DIR` denote the top-level directory of the Jasper software source tree and let `$INSTALL_DIR` denote the target directory for installation.

1) Select an empty directory to use for building the software.
Let `$BUILD_DIR` denote this directory.

2) Generate the makefiles used for building the software. To do this, invoke the command:

```
cmake -G "Unix Makefiles" -H$SOURCE_DIR -B$BUILD_DIR \  
-DCMAKE_INSTALL_PREFIX=$INSTALL_DIR $OPTIONS
```

where `$OPTIONS` corresponds to zero or more `-D` options as described below under the heading "Cmake Options".

3) Change the working directory to the build directory. To do this, use the command:

```
cd $BUILD_DIR
```

4) Build the code using the make utility. To do this, invoke the command:

```
make clean all
```

5) Run the test suite to ensure that the software seems to be working correctly. To do this, invoke the command:

```
make test
```

If more verbose output from the testing process is desired (e.g., to assist in diagnosing a problem), instead use the command:

```
make test ARGS="-V"
```

6) Install the software. To do this, invoke the command:

```
make install
```

Additional Remarks:

When building the Jasper software under Mac OSX, only the use of the native framework for OpenGL is officially supported. If the Freeglut library is installed on your system, you will need to ensure that the native GLUT library (as opposed to the Freeglut library) is used by the build process. This can be accomplished by adding an extra option to the cmake command line that resembles the following:

```
-DGLUT_glut_LIBRARY=/System/Library/Frameworks/GLUT.framework
```

Installation on Systems Running Microsoft Windows

In what follows, let %SOURCE_DIR% denote the top-level directory of the Jasper software source tree and let %INSTALL_DIR% denote the target directory for installation.

1) Select an empty directory to use for building the software. Let %BUILD_DIR% denote this directory.

2) Generate the project file needed to build the software with Microsoft Visual Studio. To do this, invoke the command:

```
cmake -G "Visual Studio 12 2013 Win64" -H%SOURCE_DIR% -B%BUILD_DIR% ^
-DMAKE_INSTALL_PREFIX=%INSTALL_DIR% %OPTIONS%
```

where %OPTIONS% corresponds to zero or more -D options as described below under the heading "Cmake Options". (Note the caret symbol "^" above denotes line continuation.)

3) Build and install the software. To do this, invoke the command:

```
msbuild %build_dir%\INSTALL.vcxproj
```

Cmake Options

The option OPTION can be set to the value VALUE with a command-line option of the form -DOPTION=VALUE
The following options are supported:

CMAKE_INSTALL_PREFIX
Specify the installation directory.
Value: A directory name.

CMAKE_BUILD_TYPE
Specify the build type (i.e., release or debug).
Valid values: Debug or Release

JAS_ENABLE_DOC
Enable the building of the documentation (which requires LaTeX).
Valid values: true and false

`JAS_ENABLE_LIBJPEG`
Enable the use of the JPEG library
Valid values: true and false

`JAS_ENABLE_OPENGL`
Enable the use of the OpenGL and GLUT libraries.
Valid values: true and false

`JAS_ENABLE_STRICT`
Enable pedantic errors for building the code.
Valid values: true or false

`JAS_ENABLE_SHARED`
Enable the building of shared libraries.
Valid values: true or false

`JAS_ENABLE_ASAN`
Enable the Address Sanitizer.
Valid values: true or false

`JAS_ENABLE_USAN`
Enable the Undefined-Behavior Sanitizer.
Valid values: true or false

`JAS_ENABLE_LSAN`
Enable the Leak Sanitizer.
Valid values: true or false

`JAS_ENABLE_MSAN`
Enable the Memory Sanitizer.
Valid values: true or false

`JAS_MEMORY_LIMIT`
DO NOT RELY ON THIS OPTION, AS IT IS LIKELY TO BE REMOVED IN THE FUTURE.
Set the maximum amount of memory that can be allocated with `jas_malloc`
and friends.
Value: a value of unsigned integral type (e.g., 10000000 or `SIZE_MAX`).

2.2 Organization of the Manual

The library is partitioned into groups of related code called modules. The documentation is also partitioned in this way. The documentation for each of the various modules can be found in the [modules page](#).

Chapter 3

Frequently Asked Questions (FAQ)

The following is a list of common questions/problems encountered when using the library.

-

Chapter 4

Known Bugs

All bugs reported in Jasper are tracked using the issue-tracking functionality provided by GitHub. If you encounter a problem with Jasper and you would like to know if it is a known problem, please check the issue tracker for Jasper on GitHub, which can be found at the following URL:

`https://github.com/mdadams/jasper/issues`

If you happened to find a bug that has not been previously reported, please report it so that it can be fixed. New bugs can be reported by creating a new issue using the page at the above URL.

