

AVT Fire4Linux Introduction

Allied Vision Technologies GmbH
<http://www.alliedvisiontec.com>
August 2005

Glossary

1. What is special in this package?	2
2. Content of the Package.....	3
3. System Requirements.....	4
3.1. Hardware-Requirements.....	4
3.2. Tested Linux Distributions	4
3.3. Tested HW-Platforms.....	5
4. Installation	5
4.1. Notes about the TGZ-Archives.....	5
5. Linux Links	6

1. What is special in this package?

AVT Fire4Linux is a complete and fully running compilation of Standard LINUX modules and AVT special developments, made for SuSE and Redhat/Fedora distributions.
TGZ Archives (also provided) make the package compatible to all other LINUX distributions.

This means, that an AVT-customer

- receives a package ready to install on SuSE und Redhat/Fedora distributions
- can use all special AVT camera features immediately
- receives AVT-support for the complete package.

This is a very untypical benefit in the LINUX world. Under LINUX, all programs are provided 'open source', but you need to compile a package out of several small modules from different vendors by yourself. If you are running into problems, you may not find anybody giving you support on your compilation.

This is different using Fire4Linux:

All out of one hand and especially developed for AVT cameras!

2. Content of the Package

The package exists out of 4 RPM files, which can be handled by the standard packet managers of SuSE und Redhat/Fedora distributions. We also offer all packets as a TGZ archive, so that AVT Fire4Linux can be installed on all LINUX distributions (available).

AVT Fire4Linux is divided into 4 major blocks:

libraw1394: This is a standard LINUX IEEE1394 bus Library. AVT Fire4Linux provides a version with proper functionality within the package. This and versions can be downloaded at Sourceforge.

(<http://sourceforge.net/projects/libraw1394>)

libdc1394: This is a standard LINUX Library for IIDC compatible cameras. AVT Fire4Linux contains the recommended version. For further versions you may have a look at Sourceforge as well.

(<http://sourceforge.net/projects/libdc1394>)

libavt1394: This is a special AVT Library to control all special features of AVT cameras in a simple and comfortable way. Function-Calls are similar to the syntax of libdc1394, but are referring to features like image preprocessing, trigger control and frame grabber functions.

cc1394: This is the AVT Viewer to test AVT cameras and play with all the special features easily without any programming.

Modul	TGZ	rpm	Source rpm
libraw	X	X	X
libdc	X	X	X
libavt	X	X	X
Cc1394	X	X	X

3. System Requirements

- (1) For running the application:
2.6.10+-Kernel-System
Qt-3.3.4

- (2) For binary-rpm-creation (compiling)
Qt-Development package ('qmake') 3.3.4
gcc-3.3.5(SuSE 9.3) / 3.4.2(FC3)

Note! There is no support for a 'gcc4' or 'Qt4' system!

3.1. Hardware-Requirements

The only hardware-requirements are concerning the IEEE1394 port. The port has to be built with an OHCI-chip supporting the 'IIDC1394' protocol (e.g., see 'Tested HW-Platforms').

3.2. Tested Linux Distributions

FC3
SuSE 9.2 and 9.3

Actually, the application ('cc1394') was developed originally on an FC3 installation. Both systems support 'SysV' init-scripts. Therefore the 'dc1394_init' file will be installed to '/etc/init.d' and added to the 'chkconfig' database.

The modules will then be loaded as system-initialization, but the script also accepts the 'normal' parameters (start stop status...) for manual use. The runlevels where the modules will be started from can be configured with 'chkconfig' (see manual-pages for more details).

3.3. Tested HW-Platforms

The application has been tested on both Intel and AMD based systems. It should also work on SMP platforms (Only Hyper Threading was extensively tested!).

It has been tested with a 'TI OHCI' and an 'nForce' integrated OHCI. It has also been tested on a 'multi-OHCI-platform' (providing multiple '1394 busses').

Note: Because SuSE provides (by default) only one '/dev/video1394' node, on this kind of system only ONE OHCI port is supported by default! This may be changed manually by creating the required '/dev' nodes (see 'AVT Cameras and Linux.pdf' for more details).

4. Installation

4.1. Notes about the TGZ-Archives

All Tarballs contain the 'original' sources (accompanied with the original configuration and installation tools). The Libraries will originally be installed with the (normal) './configure' - 'make' - 'make install' procedure.

The Application package was developed on a 'qt designer', so that no 'configure' scripts are available.

The application was compiled by using 'qmake' (for generating the Makefile) followed by 'make'. 'qmake' was distributed with the 'qt-devel' package. Therefore it is necessary on the system where the binary rpm will be generated).

Note: Because this package is named different on the various distributions ('qt-devel...' on RedHat/Fedora, 'qt3-devel...' on SuSE), it's not possible to add this package on the 'build-requirements-list' of the '.spec' file!

Note: Yet there is no 'hotplug'-support for IEEE1394 devices comming with 'cc1394'!

5. Linux Links

The following list can only show a small section from the many different options under Linux. It may be used as a starting point for own investigations.

- The Source of all Knowledge: <http://www.linux1394.org/>
- Various APIs
 - IIDC API: <http://sourceforge.net/projects/iidcapi>
 - <http://unicap.sourceforge.net/>
 - <http://kauri.auck.irl.cri.nz/~johanns/camwire/>
 - Qt-Bindings: <http://sourceforge.net/projects/libgmuvision/>
 - Java-Framework: <http://sourceforge.net/projects/jlibdc1394/>
 - Network-Middleware <http://graphics.cs.uni-sb.de/NMM/>
- Image Processing Libraries
 - <http://siptoolbox.sourceforge.net/>
 - <http://www.ee.uwa.edu.au/~braunl/improv/>
 - OpenCV: <http://www.intel.com/research/mrl/research/opencv/>
 - MATLAB: <http://www.ph.tn.tudelft.nl/DIPLib/>
 - HALCON: <http://www.mvtec.com>