

IDS Software Suite 4.90.06 for Linux

System requirements

For operating the uEye cameras, the following system requirements must be met:

	USB 3.1/USB 3.0 camera	USB 2.0 camera	GigE camera
Interface	USB 3.0 port (Super Speed)	USB 2.0 port (High Speed 480 Mbps, "Full Powered" 500 mA)	Gigabit Ethernet port (1000 Mbps)
CPU	Intel i5 or better	Intel i3 or better	Intel i3 or better
Memory	min. 2 GB	min. 2 GB	min. 2 GB
Disk space	min. 500 MB	min. 500 MB	min. 500 MB
Operating system	Linux > Kernel 3.4 (32/64-bit) For UI-3013XC: Linux >= Kernel 3.13 (32/64-bit)	Linux > Kernel 2.6 (32/64-bit)	Linux > Kernel 2.6 (32/64-bit)

Depending on the sensor model, the camera performance may be limited with the minimum system requirements.

Compatibility list

The Linux operation system is one of the most widely ported, running on a huge amount of architectures and provided over many distributions. Although we are trying to be compatible among the whole range of kernel versions and distributions, there is no guarantee that the IDS Software Suite is working on a specific untested combination.

Below is a list of tested and succeeded platforms and distributions for the current software release:

Distribution	Architecture / processor	Setup
Debian 9.4/8.10	i386 / i686	uEye-Linux-[version]-32.tgz
Debian 9.4/8.10	amd64 / amd64	uEye-Linux-[version]-64.tgz

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Ubuntu 18.04 LTS/17.10/16.04 LTS	i386 / i686	uEye-Linux-[version]-32.tgz
Ubuntu 18.04 LTS/17.10/16.04 LTS	amd64 / amd64	uEye-Linux-[version]-64.tgz

Configuration notes

- According to the IDS Software Suite version, the Linux system has to support a minimum required version of the GNU C Library (GLIBC, libc.so.6) and the GNU C++ Library (GLIBCXX, libstdc++.so.6), see https://en.ids-imaging.com/download-ueye-emb-softfloat.html?file=tl_files/downloads/LinuxEmbedded/IDS_uEye_for_Embedded_Boards_EN.pdf:
 - libc: minimum version 2.7
 - libstdc++: minimum version 3.4.17
- POSIX threads library (POSIX threads enabled libc)
- bash (Bourne again shell) or sh to run the script
- libcap v2
- libgomp v2 (for OpenMP support)
- udev min. v105
- libpng (libpng.so or libpng12.so.0) for support of saving images in PNG format
- libjpeg (libjpeg.so.8 or libjpeg.so.62) for support of saving images in JPEG format and JPEG mode of XS
- OpenGL graphics functions
- For OpenGL, version 1.4 or higher must be installed.
- If you want to have a graphical environment by using tools like the IDS Camera Manager or the uEye Demo application, you need to install the Qt framework (min. v4.5.2)
- Installation of IDS Software Suite 4.81 (or higher) will break USB driver installations prior to 4.81

Notes on older camera models

Former versions of the IDS Software Suite can be downloaded in the software archive under <https://en.ids-imaging.com/ueye-software-archive.html>.

GigE uEye RE

The GigE uEye RE camera family is officially supported by driver version **4.80** for the last time. The GigE uEye RE PoE camera family is not affected by this.

USB 2 uEye RE

The USB2 uEye RE camera family is officially supported by driver version **4.80** for the last time.

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USB 2 uEye ME

The USB uEye ME camera family is officially supported by driver version **4.40** for the last time.

GigE uEye HE

The GigE uEye HE camera family is officially supported by driver version **3.82** for the last time.

USB uEye SE

The models UI-121xSE, UI-141xSE, UI-144xSE, UI-145xSE, and UI-154xSE-C have been discontinued and will not be tested from driver version 3.80 on. IDS Imaging Development Systems GmbH therefore cannot guarantee that these models will provide full functionality with new driver versions and operate without problems.

uEye memory board USB uEye SE/USB uEye RE

The optional memory board of the USB uEye SE and USB uEye RE camera series has been discontinued. The functions required to operate the memory board are supported up to and including driver version 3.25.

Older USB 2 uEye CMOS cameras

All USB CMOS cameras with USB board revision < 2.1 are not supported by driver versions > 3.10. How can you check whether your camera is affected?

Check the serial number of your camera. If it is less than 400 26 27000, your camera will not be compatible with driver versions > 3.10.

If your camera is not compatible with driver versions > 3.10, you can of course continue to use your present driver (up to version 2.40).

Installation

You must be root to install.

- You must be root to control the daemon.
 - The cameras must have a persistent IP configuration for GigE uEye variant.
 - If a firewall is active on your system, ensure that UDP ports 50000 to 50003 are not filtered if you installed the GigE uEye variant.
 - It is recommended to use a system-wide, fully static interface configuration for the network interfaces that GigE uEye cameras are connected to.
1. Copy all the files into a directory on the hard disk (you need write access to decompress).

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2. Go to the directory you copied the files into and run the setup program script by typing (replace the wildcard with the actual version identifier of the installer file) `$> sh ./ueyesdk-setup*.run`
3. If any problems occurred, the [known issues section below](#) or the generated `report.log` file may include a hint to solve them (see installer output). If not, contact your local distributors support and submit the `report.log` file.
4. If installation succeeded, one may start the uEye daemon by typing `/etc/init.d/ueyeethdrc start` (you need to be root)
5. To stop the uEye daemon, type `/etc/init.d/ueyeethdrc stop`
6. For USB uEye, replace `'ueyeethdrc'` with `'ueyeusbdrdrc'`.
7. Alternatively, if one has a working graphical environment, the daemons may be controlled via the IDS Camera Manager (started as root)
8. Set camera ID
9. To set the camera ID, one may use the IDS Camera Manager or the `'ueyasetid'` tool.
10. Set camera IP
11. To set the camera persistent IP address, one may use the IDS Camera Manager or the `'ueyasetip'` tool.
12. If the uEye daemon hangs and can not be stopped with `/etc/init.d/ueyeethdrc stop`, run (as root) `/etc/init.d/ueyeethdrc force-stop`
13. Note that it is normal behaviour that `ueyeethd` refuses to terminate if there are applications connected.
14. For USB uEye, replace `'ueyeethdrc'` with `'ueyeusbdrdrc'`.

Note regarding GigE uEye cameras: By default, the installer configures any ethernet network interface named `eth*` - if you use another network interface to connect your cameras, insert the interface name at the interface configuration parameter in "[Parameters]-Interfaces" of `/usr/local/share/ueye/ueyeethd/ueyeethd.conf`. You must be root to edit the configuration file.

The GigE uEye daemon network interfaces may be configured with the IDS Camera Manager if a graphical environment is available.

Note: `ueyeethd` must be stopped **before** manually editing the configuration file!

Installed file structure

The created files will be installed in following directories (the presence of the binaries depends on whether you have installed the USB or GigE package):

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/usr/lib/libueye_api.so.[version]	32bit uEye shared library	After ldconfig has finished, a symbolic link libueye_api.so should exist to provide linkage against libueye_api.so . Note that only the version for the current target architecture will be installed, e.g. the 32-bit library will only be installed on a 32-bit system and the 64-bit library will only be installed on a 64-bit system.
/usr/lib/libueye_api64.so.[version]	64bit uEye shared library	
/usr/include/ueye.h	Development header file	For compatibility with older versions, a symbolic link /usr/include/uEye.h will be created. It is strongly recommended to use the lower case file name in new projects.
/usr/local/share/ueye/ueyeethd	GigE uEye daemon binaries and configuration	
/usr/local/share/ueye/ueyeusb	USB uEye daemon binaries and configuration	
/usr/local/share/ueye/bin	uEye utilities	
/usr/local/share/ueye/licenses	Thirdparty licenses and copyrights	
/usr/local/share/ueye/firmware	USB3 firmware binaries	
/var/run/ueyed	Runtime directory	
/etc/init.d/ueyeethdrc	GigE uEye daemon runlevel	

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	control script	
/etc/init.d/ueyeusbdrd	USB uEye daemon runlevel control script	
/usr/src/ids	IDS demo sources	
/usr/share/doc/ids	IDS SDK readme	
/usr/share/doc/ids/ueye_manual	IDS SDK user manual	

Additionally, the installer provides the following tools - unless not indicated otherwise, the tools will be installed to `/usr/local/share/ueye/bin`:

ueyesetid	Camera ID configuration tool
ueyesetip	Camera IP address configuration tool
idscameramanager	IDS Camera Manager
ueyedemo	Demo application
report.sh	Report generator tool

For the binary tools, a symbolic link will be created in `/usr/bin` to provide direct command line access.

User/group

The installer will create a system group 'ueye' and a system user 'ueyed' to run the daemon with. Currently there are no access control restrictions, but be aware that this might change in the future.

First start

USB 3.1/USB 3/USB 2 uEye camera

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After you installed the software, connect the camera to the PC, using the corresponding USB cable. The camera will be recognized automatically. When you connect a camera with a PC or a new USB port for the first time, it is detected as a new device and the firmware is uploaded to the camera. When the camera has been correctly installed, the LED on the back of the camera lights up green and the camera is displayed in the list of the IDS Camera Manager.

GigE uEye camera

After you installed the software, connect the camera with the network. Check the power supply to the camera. Use either an external power supply or - depending on the model - via PoE (Power over Ethernet).

Attention: The camera should not be supplied through both voltage sources at once as this can irreparably damage the camera.

Before you can use the camera on the network, you need to assign a valid IP address to the camera in the IDS Camera Manager.

Known issues

This section lists known issues that might occur in this release.

- Energy saving issues: On some systems with activated energy saving, the daemons may hang once the system has entered an energy saving state.
- USB 3.0 issues: Sometimes the USB daemon cannot receive data from the camera which is connected on a USB 3.0 port. After that occurs, physically disconnect the camera and reconnect it.
- USB 3.0 performance issues: High CPU load may lead to USB transfer fails. They possibly can be reduced by:
 - Increasing the daemon priority by reducing the `NICEVALUE` in `/etc/init.d/ueyeusbdrv`
 - Increasing the number of pending USB requests with the following configuration of `/usr/local/share/ueye/ueyeusbd/ueyeusbd.conf`:
 - [Parameters]
 - `NumRequestsStr = 40 ;`
- OpenMP issues may be cause high CPU load or "Driver out of buffer" errors. They possibly can be reduced by:
 - Setting the value of the environment variable `OMP_WAIT_POLICY` to `PASSIVE`
 - This variable specifies whether waiting threads should be active or passive. If the value is `PASSIVE`, waiting threads should not consume CPU power while waiting; while the

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value is **ACTIVE** specifies that they should. If undefined, threads wait actively for a short time before waiting passively.

List of contained files / dependencies

See list on <https://en.ids-imaging.com/open-source.html>

Uninstallation

- To uninstall ueyeethd, run (as root): `/usr/local/share/ueye/bin/ueyed_install-eth uninstall`
- To uninstall ueyeusbd, run (as root): `/usr/local/share/ueye/bin/ueyed_install-usb uninstall`

You should always use the install script that came with the previous installation to ensure proper system cleanup. Do not attempt to remove the IDS Software Suite manually.

Note: Once uninstalled, any configuration file will be lost. Consider backing up the respective configuration files!

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