

Ksenos DVR Installer's Manual

Please keep this document up-to-date!

6th April 2005

Contents

1	Hardware guidelines	2
1.1	Selecting the hardware	2
1.1.1	System architecture	2
1.1.2	Processor	2
1.1.3	Motherboard	2
1.1.4	System memory	3
1.1.5	Display adapter	3
1.1.6	Hard drives	3
1.2	Operating System	4
1.3	Recommended system sample	4
2	Installing the software	5
2.1	Main software package installation	5
2.1.1	Software upgrade	5
2.2	Driver installation	5
2.3	Configuring data storage	5
2.4	First run	5
2.5	Configuring the software	6
2.6	Complete system setup and testing checklist	6
3	Development	7
3.1	Getting the latest updates	7
3.2	Using the development version	7
3.3	Reporting bugs and requesting new features	7
4	Troubleshooting	8
4.1	PC system problems	8
4.1.1	One of the hard drives is broken or corrupted	8
4.2	Software problems	8
4.2.1	The software does not start	8
4.2.2	Capturing hardware can not be added	8
4.2.3	Camera shows black picture	8
4.2.4	There is a Ksenos DVR logo instead of camera picture	8
5	Appendices	9
5.1	Tables	9
5.1.1	Hicap / Xecap framerate tables	9

Chapter 1

Hardware guidelines

1.1 Selecting the hardware

1.1.1 System architecture

We prefer Intel Pentium 4 and Celeron based systems for better performance and compatibility. Some capturing card manufacturers have no support for AMD computers because of PCI bus clock problems. However, if only network cameras are used, this is no issue.

1.1.2 Processor

The processor must match the computing power needed by video capturing, motion detection, image displaying and image compression. Also situations where the DVR system is being under remote use and record viewing must be considered. Therefore, the processor should be overestimated for the system in normal use. When all cameras are showed and they record continuously, the system CPU usage should be around 50-70%. Too high usage slows down the fluent use of the software and shortens the lifespan of the processor.

Below is a table of capturing hardware capabilities and matching recommended processors:

Capturing speed (fps, PAL/NTSC)	Processor
25/30	Celeron 2.4
50/60	Pentium 4 2.4
100/120	Pentium 4 2.8
200/240	Pentium 4 3.2

There is no difference between the use of network cameras and capturing card inputs in this chart, because they require the same amount of computing power per frame.

1.1.3 Motherboard

The motherboard should be selected so that it has all the necessary features a customer could want. These include:

- Multiple USB slots (one is reserved for the copy protection)
- Onboard LAN adapter (100 or 1000MBit)
- AGP 4x slot or faster
- Two free PCI slots, so that one can be left free between the display adapter and the capturing card - this lengthens their lifespan

Currently we recommend using MSI NEO2-V or MSI NEO-V motherboards, depending on the required hard drive capacity (NEO-V does not have SATA controllers).

1.1.4 System memory

Memory requirement depends on the operating system and the amount of cameras in the system. Below is a table showing recommended memory (in MB) for each case:

Cameras	Windows 2000	Windows XP
up to 8	256	256
up to 16	256	512
up to 24	512	768
up to 32	768	1024

Windows XP needs a bit more memory than Windows 2000, but is better in some aspects (explained below).

1.1.5 Display adapter

Ksenos DVR utilises the OpenGL API for 3D acceleration hardware for many tasks, most important being showing the camera images. This provides very good image quality with no performance loss when scaling the pictures. However, this sets some limitations.

- NVidia cards have good OpenGL support, but on the cheaper cards, there is some loss of performance when showing lots of camera windows simultaneously.
- ATI cards have an excellent OpenGL support and great performance even with many cameras, but there are some cards that have a memory leaking problem.
- SiS / Intel motherboard-integrated display adapters have quite poor OpenGL performance and some other problems, and we don't officially support them.

Below is a table of recommended cards and cards that we don't currently recommend:

Display adapter	Systems in which can be used	More information
ATI Radeon 9250	Great for all systems up to 16 cameras.	Performance loss with multiple displays
NVidia Geforce FX 5200	Good for systems slower than 100fps.	
ATI Radeon 9600(also pro/xt)	Can't be used - leaks memory	We're trying to get around this problem.

We will be updating this table as soon as we get more information.

1.1.6 Hard drives

We recommend using hard drives no larger than 160GB because of quality problems with large drives. Operating system should be placed on its own physical drive if possible.

With 4 IDE and 2 SATA drives, the total capacity can be up to 960GB with 160GB drives. A normal system consists of one 40 GB drive for the operating system and exported video gallery, and a 160GB drive for data storage. With a decent recording percentage, a good month of images can be stored.

External hard disk devices (USB 2/FireWire) can also be used.

Below is a chart of example systems and capacities:

Total image storage capacity	IDE1	IDE2	IDE3	IDE4	SATA1	SATA2
160GB	40GB (oper. system)	CD-RW drive	160GB	-	-	-
240GB	40GB (oper. system)	CD-RW drive	120GB	120GB		
320GB	40GB (oper. system)	CD-RW drive	160GB	160GB	-	-
360GB	40GB (oper. system)	CD-RW drive	120GB	120GB	120GB	-
400GB	40GB (oper. system)	CD-RW drive	160GB	120GB	120GB	-
440GB	40GB (oper. system)	CD-RW drive	160GB	160GB	160GB	-
480GB	40GB (oper. system)	CD-RW drive	160GB	160GB	160GB	-
640GB	40GB (oper. system)	CD-RW drive	160GB	160GB	160GB	160GB
800GB	160GB (OS + storage)	CD-RW drive	160GB	160GB	160GB	160GB
960GB	160GB (OS + storage)	160GB	160GB	160GB	160GB	160GB

1.2 Operating System

As Linux support is still on its way, the supported platforms at the time are Microsoft Windows 2000 and Microsoft Windows XP. All versions of both are compatible with Ksenos DVR, but we recommend using the Professional licensed versions, as they have better security and functionality.

Windows XP has better support for processors' Hyper-Threading function and starts up quicker than 2000.

1.3 Recommended system sample

A sample system using a 100fps capturing board could be:

- Pentium 4 processor, 3.0 GHz
- MSI Neo2-V motherboard
- 512 MB DDR RAM
- 1 x 40GB HDD + 1 x 160GB HDD
- ATI Radeon 9250
- CD-R/RW drive
- XeCap 100 16-channel board
- Wheel mouse + Keyboard
- Microsoft Windows XP Professional
- Ksenos DVR software

Chapter 2

Installing the software

2.1 Main software package installation

Insert the Ksenos software CD into the CD drive. Open the contents of the CD with Windows Explorer and run the file “Ksenos DVR Install”.

2.1.1 Software upgrade

If there is a previous version of Ksenos DVR installed, uninstall it with the Add/Remove Programs feature in Control Panel, then continue the installation normally.

2.2 Driver installation

There are some scripts included to make driver installation easier. In the directory C:\Ksenos\drivers\, there are following scripts:

- **xecap_driver.vbs** installs XeCap board drivers automatically (50/100/200)
- **hicap_drivers.vbs** installs HiCap board drivers automatically (25/50/100/200)
- **matrix_driver.vbs** installs the copy protection dongle drivers

When using these scripts, you **must** click 'Cancel' for any automatic dialogs prompting for drivers before running.

NOTE! Automated HiCap driver installation must not be done twice. If there is something wrong after the driver install, please remove **all** HiCap drivers before running the script again. The drivers can be located in Device Manager -> Sound, video and game controllers -> ComArt 2ND Device, Master and Slave.

2.3 Configuring data storage

After installing the software and drivers, the data storage space must be defined. There is a tool, located in C:\Ksenos\drivesetup.exe. Run it, and there will be a dialog. (Please ignore the possible warning about using passive mode.)

Double click on a drive to set it up as storage space, then select the amount of allocation (usually the maximum value) from the list and press OK. It will then allocate the space for Ksenos DVR. There is no limit for the number of drives that can be allocated.

2.4 First run

After the software installation is complete, there is a Ksenos DVR icon on the desktop. Double-click it and the program will start. There will be a small window on the bottom of the screen, titled “Ksenos DVR”.

2.5 Configuring the software

The default procedure for configuring the software usually consists of the following steps:

- set the desired options in program setup, (default window layout, AVI resolution, serial port settings etc.)
- go to the device setup, add the capturing device and configure it (press +, select the device, set the watchdog timer and video standard)
- open the camera setup and add cameras
- set the framerates for the cameras (see the Tables appendix for framerate setup tables)
- setup the users for the program - if there are no users, the program runs in a userless mode. NOTE! When adding the first user, make sure it has all rights for the program!

2.6 Complete system setup and testing checklist

The following steps should be done:

- assemble the computer
- install a capturing device
- set the power failure default state to "Power On" from system BIOS
- install the operating system and the Ksenos DVR software
- turn off power management features and the screen saver
- install the device driver for the capturing device
- install the device driver for the copy protection dongle
- run Ksenos drive setup and define the storage space
- enter a default setup into Ksenos DVR (capturing device + cameras)
- test briefly with camera signals
- check the recordings for success
- reboot the computer and check that the automatic startup works

Chapter 3

Development

3.1 Getting the latest updates

All updates are downloadable from the Ksenos DVR distributor website (<http://dist.ksenos.info/>). Please note that when updating the software, you must first uninstall the previous version. This will not remove your settings, unless you manually delete the Ksenos directory completely.

3.2 Using the development version

First of all, the development version is for testing and feedback purposes. It can be used in a real environment, but it should not be the only security measure. There are always some bugs and unwanted features in the unstable versions.

3.3 Reporting bugs and requesting new features

You can report bugs and request new features at our distributor website either by using the contact form, or sending mail to `development@ksenos.info`.

Chapter 4

Troubleshooting

4.1 PC system problems

4.1.1 One of the hard drives is broken or corrupted

- If this happens, you have to replace it and currently also reset all recordings. We are adding recovery and repair tools to the program, but they're not yet released.

4.2 Software problems

4.2.1 The software does not start

Here's a list of things that can be done:

- Check the capturing hardware and protection dongle drivers. If there is a conflict or error with any of these, the program may not even start.
- Make a backup copy of the file **settings.kse** in the program installation directory and delete it. This resets all program settings, in case of a faulty setting causing the problem.
- Check the disk storage - if there is a corrupt hard disk in the list of capturing storage disks, the program may not start.

4.2.2 Capturing hardware can not be added

If the list of supported devices to be added contains nothing else than "TCP/IP Client", the software is missing the software protection dongle. Check the dongle drivers. However, if the list has devices:

- Check that the necessary device drivers are installed.
- Check the file **kseos.log** in the program installation directory. Look at the last few lines, they can provide a clue.

4.2.3 Camera shows black picture

This can be caused by several things:

- Wrong capturing hardware driver version
- Faulty video signal in camera input
- Wrong or faulty display adapter driver
- All capturing frames are already reserved for the camera group. Check the tables in Appendix "Hicap / Xecap framerate tables" to see how many frames you can give to the cameras in the group.

4.2.4 There is a Ksenos DVR logo instead of camera picture

There is no signal in the camera input. If the signals are connected through, remember to disable the termination resistors from the capturing board (Xecap only).

Chapter 5

Appendices

5.1 Tables

5.1.1 Hicap / Xecap framerate tables

Camera capturing in Hicap and Xecap boards is divided into groups. Each group shares the default framerate of the video standard (PAL: 25, NTSC: 30). Below are tables which shows in which group each camera belongs.

50fps capturing boards (Hicap50 / Xecap50)

Group									
[1]	1	3	5	7	9	11	13	15	total 25/30 fps
[2]	2	4	6	8	10	12	14	16	total 25/30 fps

100fps capturing boards (Hicap100 / Xecap100)

Group					->	(24)		(32)		
[1]	1	5	9	13		17	21	25	29	total 25/30 fps
[2]	2	6	10	14		18	22	26	30	total 25/30 fps
[3]	3	7	11	15		19	23	27	31	total 25/30 fps
[4]	4	8	12	16		20	24	28	32	total 25/30 fps

200fps capturing boards (Hicap200 / Xecap200)

Group			->	(24)	(32)	
[1]	1	9		17	25	total 25/30 fps
[2]	2	10		18	26	total 25/30 fps
[3]	3	11		19	27	total 25/30 fps
[4]	4	12		20	28	total 25/30 fps
[5]	5	13		21	29	total 25/30 fps
[6]	6	14		22	30	total 25/30 fps
[7]	7	15		23	31	total 25/30 fps
[8]	8	16		24	32	total 25/30 fps