Installation Guide of Linux DVR

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Package Contents for Enhanced Linux DVR kit

DVR Cards
Each package includes one, two, or three pcs of DVR cards and its cables as below:

4004C 4-ch Enhanced Linux DVR card and its cable

4008C 8-ch Enhanced Linux DVR card and its cables

4016C 16-ch Enhanced Linux DVR card and its cables
Note: the 16-ch cards will be connected as this:

Audio connector to motherboard
Included in each DVR card
Installation Guide of Linux DVR

Card-to-card audio cable

Card-to-motherboard audio cable

DOM

DOM and DOM power cable

DOM cable

Document CD
Package Contents for Professional Linux DVR

DVR Cards
Each package includes one, two, or three pcs of DVR cards and its cables as below:

4008S 8-ch Professional Linux DVR card and its cable

4016S 16-ch Professional Linux DVR card and its cable

Audio connector to motherboard
Included in each DVR card

Card-to-card audio cable
Card-to-motherboard audio cable

DOM
DOM and DOM power cable

Document CD
# Hardware Recommendations

Before you begin, please verify that your computer hardware specifications meet these requirements.

<table>
<thead>
<tr>
<th>Motherboard</th>
<th>Intel 865 Chipset; Intel 945 Chipset; AC97 Audio Chipset; Realtek or Intel 10/100M Network Chipset</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The following motherboards are recommended:</td>
</tr>
<tr>
<td></td>
<td>Seavo P5 i6513G/865G, Seavo P4 i6513G/865G (DVR Motherboard)</td>
</tr>
<tr>
<td></td>
<td>GIGABYTE 865PE, GIGABYTE 865G, GIGABYTE 865GME</td>
</tr>
<tr>
<td></td>
<td>MSI 865G, MSI 865PE</td>
</tr>
<tr>
<td></td>
<td>ASUS 865G, ASUS 865PE</td>
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<tr>
<td></td>
<td>ECS 865G, ECS 865PE</td>
</tr>
<tr>
<td></td>
<td>GIGABYTE 945GCMX-S2, GIGABYTE 945GZM, GIGABYTE 945PL-S3E</td>
</tr>
<tr>
<td>CPU</td>
<td>Pentium 4 &gt;1.8GHz, or Celeron &gt;2.0GHz</td>
</tr>
<tr>
<td>RAM</td>
<td>256M, recommended 512M</td>
</tr>
<tr>
<td></td>
<td>For 865chipset motherboard or DVR motherboard, use DDR I memory.</td>
</tr>
<tr>
<td></td>
<td>For 945chipset motherboard, use DDR II memory.</td>
</tr>
<tr>
<td>VGA Card</td>
<td>nVidia series (AGP slot): TNT2 (32M), etc.</td>
</tr>
<tr>
<td></td>
<td>nVidia series (PCI-E slot): Geforce 7300, nVidia Geforce 7200, etc.</td>
</tr>
<tr>
<td></td>
<td>ATI series (AGP slot): ATI Radeon 7000 (32M), and ATI Radeon 9000 (32M), etc.</td>
</tr>
<tr>
<td></td>
<td>Note: Use Integrated VGA card for 8 channels or less than 8 channels systems.</td>
</tr>
<tr>
<td>Network Card</td>
<td>Integrated LAN card, or LAN card from well-known manufacturers.</td>
</tr>
<tr>
<td>Audio Card</td>
<td>Integrated sound card, or sound card from well-known manufacturers.</td>
</tr>
<tr>
<td>Hard Disk</td>
<td>80GB or higher</td>
</tr>
<tr>
<td></td>
<td>For Intel 865 Chipset motherboard, only IDE HDD is supported.</td>
</tr>
<tr>
<td></td>
<td>For Intel 945 Chipset motherboard, both IDE HDD and SATA HDD are supported.</td>
</tr>
<tr>
<td>CD-RW/DVD-RW</td>
<td>BenQDW2000 DVDRW</td>
</tr>
</tbody>
</table>
Connecting hardware

Before installing the Linux DVR kit, turn off the power, and unplug the power cable.

Please follow these steps to install Linux DVR.

Step 1 Prepare a computer with recommended hardware. If you purchased non-recommended hardware yourself make sure it works with linux drivers. We are not responsible for non-approved hardware.

Most incompatibility problems are incurred by non-recommended motherboards and VGA cards. We provide special DVR motherboard to build a robust Linux DVR system.

Step 2 Remove the PC case cover, and then remove the brackets for the PCI slots. Save the screws.

Step 3 Insert the DVR cards into PCI slots, and fix them.

Step 4 Connect video & audio cables to DVR cards.

If audio monitoring is required, do the step 5 and 6. Otherwise, skip to Step 7.

Step 5 Connecting the Card-to-card audio Cable between cards. Connect the audio output of the first DVR card to the audio input of the second DVR card, and the output of the second card to the input of the third card. If there is only one DVR card, no need to do this step.
Step 6 Connect the Card-to-motherboard audio Cable between the audio output of DVR card and CD IN port of motherboard or PCI sound card.

Step 7 Insert VGA card, and connect it to monitor. For system less than 16 channels, use the built-in VGA card in the motherboard.

Step 8 Connect DOM to Linux DVR PC. There are two ways to do, with DOM cable or without DOM cable.

Connect DOM to Linux DVR PC without DOM cable:

Real picture:

Connect DOM to Linux DVR PC with DOM cable:
Step 9 Insert hard disks to the first slave IDE (when using DOM cable), or other IDE slots.

Step 10 Check the hardware, make sure that VGA cable, power cable, network cable, keyboard, and mouse has been connected.

Step 11 Turn power on.
Software initiation

After hardware installation, please power on the system.

CMOS Setup

In the start up page of motherboard, press [Del] to enter CMOS/BIOS setup page.

Note: The way to enter BIOS configuration window may be different for different motherboard.

1. Make the “PQI DOM” as the first boot priority and HDD disk as the first boot device. (DOM is a kind of HDD disk, but you have to define the DOM as the first boot drive)
2. See details as below. The configuration may be different for different motherboard.

For example, ASUS P5-P800-VM (Intel 865G chipset) motherboard,
1. When power on the PC, press [Del] + [F1], the PC will enter BIOS Setup interface.
2. In the [Boot] menu, click [Hard Disk Drives], click [1st Drive], and select [PQI DOM Disk].
3. In the [Advanced CMOS setup] menu, set the [1st Boot Device] as HDD disk (DOM is one kind of HDD disk).
5. The system will restart and begin to load system from DOM disk.

System loading

When you see the green words as below, it means the software is initiating.

Load basic drivers [Ok]
Load sound drivers [Ok]
/dev/sda1 is iDVR boot device
Ok, ds40xxhc installed
Ok, hietm installed
Ok, idvr installed
Ok, usr installed
Ok, extra packages installed
Load net card driver [Ok]
Load graphic driver [Ok]
Load HK video capture card driver [Ok]
========Press any key to enter maintenance mode=======

if it is a new HDD or HDD not using Linux file format, system will prompt to format HDD.
Then the software startup GUI will appear:

![Software Startup GUI](image)

After several seconds, the main GUI will appear.

![Main GUI](image)

In the bottom RECORD Panel, the channel number in black means the video input is valid.
FAQ

Q1. Can not see the green words.
AN: This problem may caused by wrong DOM installation or CMOS configuration.
How to fix it:
1. Power off the computer, and re-insert DOM. Make sure the DOM is connected in the first primary IDE slot, and DOM power cabel is connected.
2. In the BIOS/CMOS setup page, make sure that “PQI DOM” as the first boot priority and HDD disk as the first boot device.

Q2. Sometimes, the Linux DVR keeps rebooting.
AN: This may caused by insufficient VGA memory. How to fix it:
1. Press [Del] to enter the BIOS/CMOS setup utilities.
2. Click [Advanced Chipset Features], in the panel of [On chip VGA settings], set [On-chip VGA as [Enabled], and adjust the [On-chip buffer size] to a larger value, for example, 8MB or 16MB. (The value should not exceed the memory for VGA card).
3. In the [DRAM Timing Selectable], set [AGP Aperture Size (MB) to 128MB or 64MB. (this is the share memory size for VGA card).
Note: The settings may different for motherboards.

Q3. How the hard disks will be formatted?
AN: For new hard disk, when it is connected to Linux DVR, system will automatically format it. This process may take tens of minutes to do, depend on the capacity of hard disks.
For hard disk with FAT32 format, system will prompt user whether to format hard disk. If choose [Yes], the hard disk will be formatted to Linux format. If choose [No], the hard disk will be used with FAT32 format.

Q4. In the software GUI, the available channels number is less than the channels you have installed? For example, you have inserted 2 pcs 8 channels card in Linux DVR, but only 8 channels found in software.
AN: Two reasons may cause this problem.
1. The DVR cards are not well fastened. If so, power off Linux DVR, and re-install DVR cards.
2. The DVR cards have not been registered. If so, contact the supplier to register the Linux DVR system.