Reduce noise for computers

Do you think current computer systems generate too much noise? Although we spent a lot of money to equip high quality speakers to enjoy better music, the sound from the speakers plus the noise came out.

Do you think current computer systems generate too much noise? Although we spent a lot of money to equip high quality speakers to enjoy better music, the sound from the speakers plus the noise emitted from the computer made the room loud and chaotic. .

In general, the more comfortable computers work, the more comfortable we are. Reducing computer noise to an acceptable level is easy and inexpensive. You don't have to make the computer completely 'silent' (in fact, there are no measures to do that), but just make the system work in silence at the calling level. The article will help

you identify and relocate parts that are the main culprits that cause unpleasant noises in the computer.

Noise and temperature

The most noise-generating part in the system is the cooling fan and most computers are equipped with many of these devices at the same time. For example, the Pentium 4 PC tested by PC World in this article is equipped with four cooling fans: the power supply, the CPU, the graphics card and the back of the case.

Of course, these fans have the function of cooling the delicate electrical circuits inside the case and it is a very important task. However with the right equipment, you can both protect the computer so that the temperature is not too hot and operate more smoothly.

First you need to buy a new cooling fan. This type of cooling fan with a slow rotation speed produces little noise but cannot provide much cool air for the CPU and its components. Larger sized fans can spin more slowly, but they blow in more cool air. However, because the propeller is too big, it may not fit into the case. Some expensive cooling fans (about 20 USD or more instead of only 2 USD as usual) have the same size and speed specially designed to minimize noise. Finally, you can reduce dependence on cooling fans by installing highly efficient heat sinks on the CPU and elsewhere in the system.

To assess the system temperature, you can use a temperature monitoring program. Typically, computers or motherboards come with such a program, the computer maker can also provide you as a free download from the Internet. If your computer doesn't have this tool, try Alex Van Kaam's free Motherboard Monitor utility (download it at www.pcworld.com.vn, ID: 47642; see Figure 1). This program shows the temperature of the computer and even gives warning information when the temperature in the cabinet is approximately the level of danger you have set. Another option is to use Podien's $ 15 CPUCool utility (download the trial version at find.pcworld.com/48561).

Before opening the case and moving to the internal parts, you must remember some safety measures: Disconnect the power cable from the socket (at both ends). For any part other than the drive, leave the computer with the motherboard at the bottom, when removing a part, open all the screws before lifting it. And when inserting an accessory, plug all the screws, turn it in half, then tighten it. After everything is done, plug in the power cable and turn on the computer power, if it works well, turn off the power again, unplug the power cable, close the case and then plug in the power cable again.

Determine the cause of noise

Replacing all the noisy parts in your computer will waste a lot of time and money, so start with the device that makes the loudest noise. If the device is still too noisy, continue replacing the unit that emits a second level noise.

To identify the source of noise, use the popular Cardboard Tube Test tube. By placing one end of the tube with a paper speaker attached to the ear, the other end is located near the drive, cooling fan and other devices in the case, you can determine what is the most noisy part.

If the test tube is not reliable enough, you can use the Elimination Test method: turn off and turn on cooling fans and hard drives one by one to see which device is the most noisy (nothing dangerous when the computer is with The case is opened to operate without a fan for a few seconds. To make a 'cooling' a cooling fan or a hard disk (the main noise maker outside the fan), unplug the power supply to the device (make sure the computer has been disconnected before). Cooling fans are usually connected via a small plug (three holes) on the motherboard; The

hard drive uses a large four-pin connector from the computer power supply. Plug the computer's power cable back into the socket, turn on the device and pay attention without listening to the Cardboard tube.

Of course, this method is not possible for fans on the power supply because you cannot disconnect the power supply to this device. If the computer has turned off the power but still plugs the power cable into the outlet, install a small stick between the blades and keep it there while turning on the computer power; If the computer becomes quiet, you have found the culprit.

The power supply unit is usually the first device you want to replace, because the cooling fan inside this device is often the most noisy in the case. Find a new replacement power supply that has at least the power of the power supply in use. However, you need to keep in mind that a large power supply unit with redundancy for future device upgrades is often more expensive and generates more noise than small power supplies.

You can use 330-watt Saesonic S12-330 power supply (see Figure 2), which is available online for about $ 60. With a 120mm wing size, this cooling fan rotates slower and emits less noise than the popular 80mm wing fan in most current power supplies. Even, this product allows to slow down the speed of CPU cooling fans and fans on the back of the case.

If the Seasonic source has not satisfied you yet, try using Antec's Phantom 500 power source with a capacity of 500 Watts (find.pcworld.com / 48564). This source operates absolutely quietly for most of the time. However, the Phantom 500 is large, heavy and very expensive (about $ 175 online). The Phantom power body is also a heat sink and cooling fan only works when the temperature exceeds the user-defined threshold. However, for many people, silence is absolutely not as good as working with a little noise. Users can easily accept small noises more often than noise at no time.

The installation of the new power supply is not difficult. You just need to unplug the motherboard and the drives, remove the screws and lift the old power supply. Then, put the new power supply in, tighten the screws and plug everything in the same way. Seasonic and Antec power supplies are included with installation instructions but not every manufacturer has.

If the computer uses a cooling fan attached to the case (rather than attached to the CPU, power supply or other devices), you can replace it with another type of less noise. The 92mm cooling fan in the test computer is the one that generates the most noise. The best solution is to replace it with a larger fan, but it's difficult because your case is more likely to have no room for 120 mm fans. In addition, using a better fan (and perhaps slower rotation) will reduce system noise.

News firm produces cooling fans attached to noise-free enclosures of various sizes, costing less than US $ 20. These fans do not have an installation guide, but their replacement is quite simple: just unplug the old power supply cord, remove the fan, install a new fan and plug in the power supply cable again. The Nexus's Silent Silent 92mm cooling fan (find.pcworld.com/58566; see Figure 3) worked well in the PC World test system. There is only a small concern: the motherboard monitoring program shows that this fan only turns at half the speed of the old fan. However, this speed does not increase the temperature of the computer.

Most hard drives do not have cooling fans but they still cause a lot of noise during operation. However, there are many new models that make less noise because they use fluid-type axes instead of ball bearings. So, if you need a more 'smooth' operating computer, this is a good opportunity to upgrade the hard disk.

Cover the hard disk

Alternatively, you can put your existing hard drive into a soundproof box that fits into the 5.25-inch (for CD or DVD drive) type like the Nexus Drive-A-Way, which costs about $ 60 (find. pcworld.com/48568). The test team installed this device with some minor problems before reading the instructions written at the bottom of the box. Drive-Way has completely suppressed the noise of the hard disk on the test computer.

The most efficient CPU cooler is a small heat sink with an inexpensive but noisy fan. A little extra money, you can buy a better one. However, changing CPU coolers cannot be done easily. Part of this difficulty is that the size must be absolutely accurate. Noise-free CPU coolers can be quite bulky, with heat dissipation panels like miniature tall buildings, fitted with fans of the same size as portable disc players. You must make sure the new cooler fits on the motherboard and the CPU socket (socket). You probably know what kind of processor you have, but some CPUs are suitable for many types of sockets. Refer to the accompanying technical documentation of the machine or motherboard (or the manufacturer's website).

Once you have found the necessary cooler, you must proceed with the installation. First, remove the old cooler. It is likely that the old cooler is clamped to the socket in ways that you cannot see with your eyes and in places that cannot be manipulated by hand. Next, wipe off the old thermal conductive cream on the CPU surface, then apply a new layer of cream (the new cooler may come with this cream tube). Finally, install the cooler in the clamps.

For motherboards that support socket 478, you should use the Arctic Cooling's relatively compact Freezer 4 cooler (see Figure 4). Although this device is not 'smooth' with another large size, the Freezer 4 is capable of fitting in a normal computer and has a network price of about 30 USD (Arctic Cooling also provides cooler for other types of sockets).

If changing the CPU cooler in your computer is too frustrating, consider not changing the small cooling fan installed on the graphics card. This type of fan usually does not cause significant noise, and manipulating the graphics card is a very dangerous job.

We also recommend that you do not perform chassis isolation. The use of foam rubber material mounted inside the chassis for sound insulation often takes a lot of effort but the efficiency is negligible.

Xuan Cuong
PC World USA 10/2005