

Y2K TEST & FIX

Millennium Bug Diagnosis

BIOS and RTC
Replacement

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Introduction

Thank you and congratulations on purchasing Y2 TEST & FIX from SecureNet Technologies Inc. We trust you will find this software easy to use and an effective tool in helping you deal with the Millennium Bug that may be lurking inside your PCs hardware.

What is the Millennium Bug?

The Millennium Bug is a general description of the problem caused by software, hardware, firmware (or just about anything else) not being able to deal correctly with the change from the year 1999 to 2000. It is not confined to personal computers, it could (and does) effect central heating systems, cars with computerized engine management systems, house and business alarms etc.

How does it effect PCs?

The Millennium Bug in PC hardware, is caused by an error of logic in the PC's Real Time Clock (RTC). This is a small chip inside your PC that ticks 18 times every second to enable it to maintain the time and date. The chip takes its power from a battery when the PC is switched off. This enables it to keep the date and time even when your PC is not in use. The problem, or the bug, occurs when the RTC rolls over from 1999-2000 and it does not roll over the century byte correctly, so 1999 becomes 1900 instead of 2000.

Millennium Compliant BIOS

If your PC is more than a couple of years old it is almost certain to be completely NON-compliant. But don't worry Y2K TEST & FIX can fix this for you so you don't have to rush out to buy a new PC.

When PC manufacturers became aware of the problem they started to try to deal with it. The most common way they do this is to amend the BIOS of the PC so that it can detect the bug AFTER it happens and fix it. When a manufacturer puts this patch into their BIOS, they call it a MILLENNIUM COMPLIANT BIOS because this sounds good and encourages you to buy their computer and not someone else's.

Now there is nothing wrong with calling something a "Millennium Compliant BIOS" as long as the person who is going to use it knows what that means and what it means in general terms is that your PC is OK as long as you switch it off in 1999 and switch it back on in the year 2000. In short, don't use it after the millennium rollover unless you have powered OFF and ON first. If that's your definition of "compliant" then fine.

An extended form of this patch has found its way into some BIOS programs and this is also the method provided by ALL of the rival Millennium Bug fix software we have looked at. With this as well as fixing the RTC at boot-up the BIOS will detect if any application uses the BIOS to retrieve the date. When it does it will intercept the request and see if the year 1900 is about to be passed back (in other words has the bug already struck?), If it is then the BIOS (or corrective software) will pass back 2000 instead. This solution makes the very large assumption that someone will issue a suitable BIOS call VERY soon after midnight 1999. If they don't you will be running with a clock that says 1900 until they do. If an application goes to the RTC directly to retrieve the date it will find 1900 and the bug will do its worse.

We don't think that BIOS' and software solutions that work in this way are "Millennium Compliant".

Y2K TEST & FIX will tell you whether your PC will fail when it is ON and whether it will fail if it is OFF. So if you find that your PC will not fail if it is switched off and you don't mind leaving it switched off from 1999-2000 then you don't have a major problem.

Millennium Compliant RTC

As already mentioned the Millennium Bug is actually a fault in the RTC not the BIOS. Therefore a Millennium Compliant RTC is simply a Real Time Clock that does not have the bug. That is, it correctly rolls over from 1999-2000 just as it would from 1998-1999. They do exist but they are rare. Y2K TEST & FIX will tell you if you have one and it will give you one if you don't - so relax.

You may be asking yourself at this point, "Why don't all the PC manufacturers simply use compliant RTCs?". The best answer we have been given by a large PC manufacturer was "There are only two suppliers of the RTC world wide and compliant RTCs cost more". It is worth pointing out this was in 1998 when then Millennium Bug was well known and manufacturers were still choosing to use non-compliant RTC'S and try to fix the bug with the BIOS.

Using Y2K TEST & FIX to test your PC

So lets move on to actually testing our PC to see what the damage is. Large users should know that they can perform the following tasks via a suitable network and we will cover this later. For now we will assume we are running the software from the distribution floppy on a stand alone PC. If you are running this software from a .zip file that you downloaded from the internet you have already unzipped the files to a temporary directory.

To install Y2K TEST & FIX for DOS run:
Install.bat

To install Y2K TEST & FIX for Windows 95/98 run:
Setup.exe

Insert the distribution floppy.

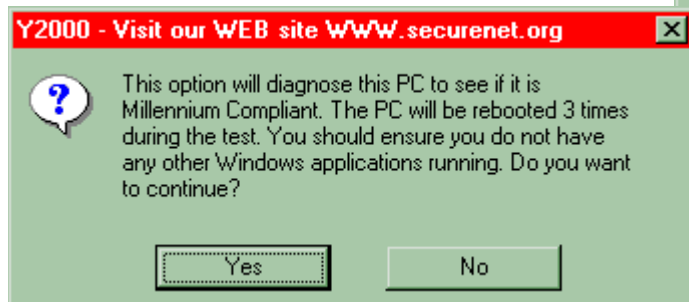
from DOS use install.bat
from Windows and Windows 95 use setup.exe

Note: The DOS and the Windows versions use as much as possible an identical interface. The following screen shots show the Windows version but DOS users will immediately see the resemblance.

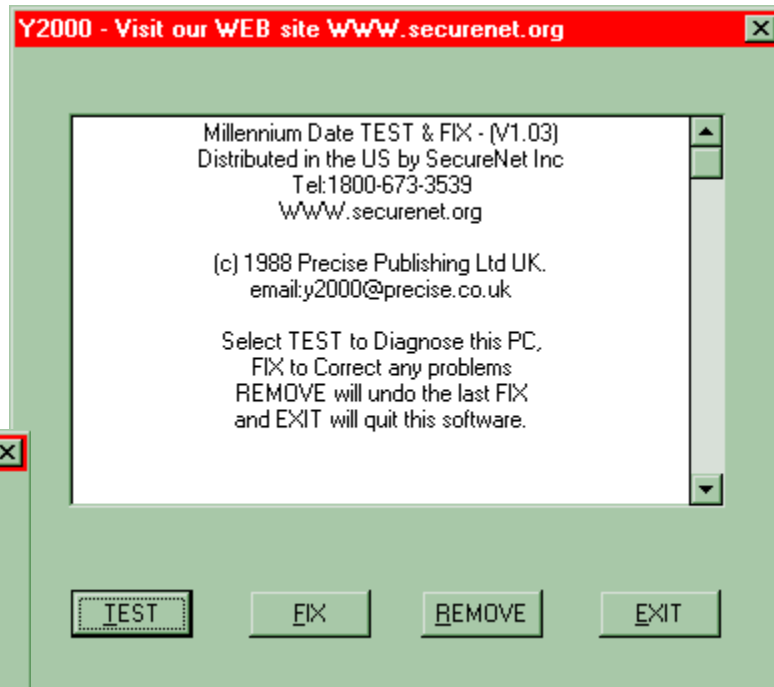
The software will load



As part of the test the PC must be rebooted several times. This is how we are able to tell if a PC has a Millennium Compliant BIOS. (Remember this is a patch to the BIOS that will fix the millennium bug when you power-on)

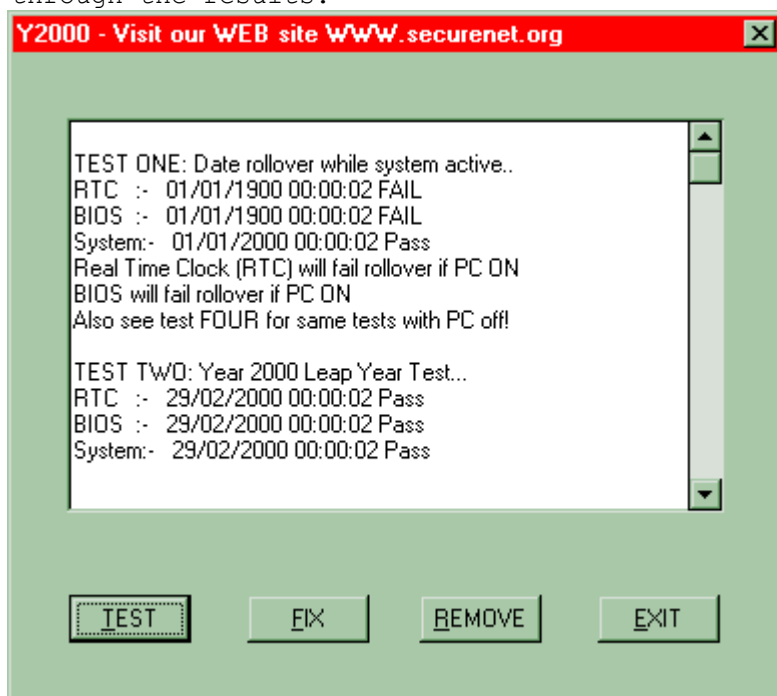


To diagnose your PC select the TEST button.



After the test is complete, if you are using the DOS version the results will be displayed automatically. If you are using the Windows version, Windows will load again as normal but you must manually reload the software as shown above. You do this by using the setup.exe file.

In either case a screen will be shown that allows you to scroll up and down through the results.



If you have a fully compliant PC all the tests will be shown as "PASS" and at the very end of the report there will be an entry that says "This PC is 100% Millennium Compliant". If your PC has failed any tests these will be shown as "FAIL".

The tests are in four parts;

Test One - Millennium Compliance While PC is ON

These show if your PC is safe to use WITHOUT ANY POWER-Down after the rollover from 1999-2000.

Test Two - Leap Year 2000

The algorithm that people use for deciding which leap years is common knowledge. However sometimes a crucial last stage of the algorithm is forgotten. Normally this does not matter but in the case of the millennium it does. Failure to take this last stage into consideration would mean that 2000 would be classed as NOT being a leap year while 2001 would be considered a leap year. This is obviously the reverse of the true situation. Y2K TEST & FIX will test to ensure your PC deals with this situation correctly.

Test Three - NON Leap Year 2001

See above

Test Four - Millennium Compliance While PC is OFF

The rollover tests used in test one are repeated after the PC has been reset during the rollover. If your PC passes this test it will fix itself on the first boot-up.

Fixing the Millennium Bug

If your PC fails any of the above tests you may want to apply the corrective software to fix the problem. This option requires the optional FIX component. If you try to FIX a PC without that component the software will inform you that it can not continue. Call your supplier to obtain an update to the Diagnose and Fix version.

To apply the corrective software select the FIX button.

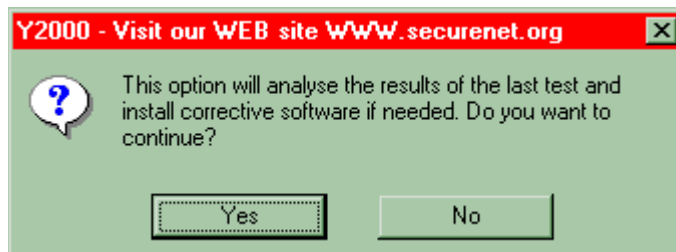
If your PC has already been diagnosed as 100% compliant, either because it already was or because you have previously applied the FIX, then the following message will be displayed;



Before you can FIX a PC you must TEST it first. Failure to do this will result in the following message being displayed;



If neither of the two situations shown above apply then selecting the FIX option will result in the following message being shown;



The fix can perform in two ways. It can give your PC a Millennium Compliant BIOS (as described above) or it can give you a compliant BIOS and RTC. We call these modes RESIDENT and TRANSIENT.

A RESIDENT solution is one that will take some of your PC's memory. A TRANSIENT solution requires no memory.

When making your choice these are the things you need to consider;

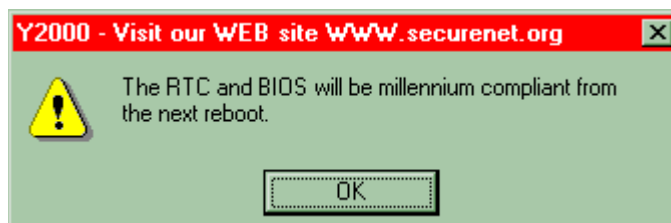
Fixing the BIOS does NOT require any memory
Fixing the RTC does require a small amount

If you know that you will not be using your PC after 1999 WITHOUT rebooting it, then fixing the BIOS is adequate.

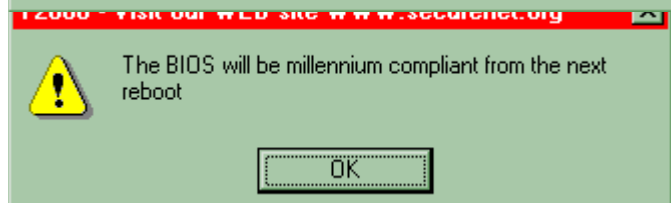
If you know that your PC will be left on from 1999-2000 or you are unsure, then you should select to fix the RTC.

Select the option of your choice. depending which one you choose one of the following messages will be displayed:

Resident:



Transient:

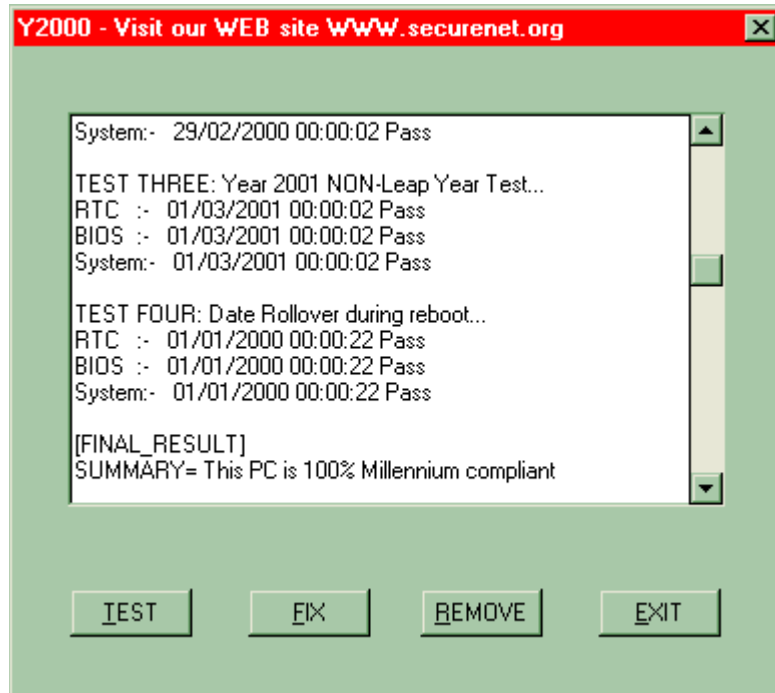


Repeating the test:

Once you have applied the fix you may wish to repeat the diagnosis to confirm that it has been applied correctly and that it is functioning correctly on your PC.

Select TEST again and follow the instructions shown earlier under TESTING your PC.

When you finally view the results IF YOU HAVE CHOSEN THE RESIDENT FIX, you should see a screen like the one below:



This shows all the tests have been passed.

IF YOU CHOSE THE TRANSIENT FIX YOUR PC WILL STILL FAIL TEST ONE BUT SHOULD PASS TEST FOUR. This means that Y2K TEST & FIX will fix your PC the first time you boot up after 1999.

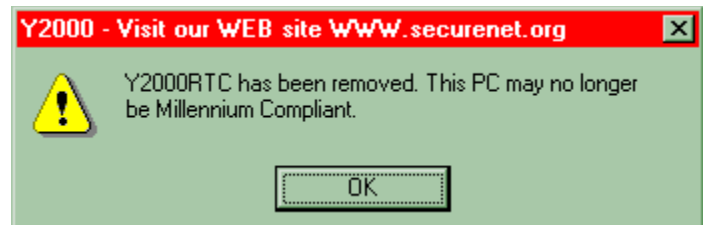
Removing Y2K TEST & FIX from your PC

If you decide to sell your PC at any time you will want to remove Y2K TEST & FIX from the hard disk. To do this, just select the REMOVE button.

If the PC has not been previously fixed the following screen will be displayed:

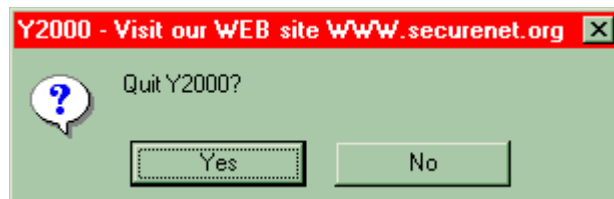


If the PC has been fixed, the fix will be removed and the following will be seen:



Exiting from the software:

To exit from the software select the EXIT option and select YES to exit.



Network Download

Larger companies will usually have their PCs connected via network. This network can be used to simplify the task of installing Y2K TEST & FIX.

This feature is only available in the Y2K Fix program. Please contact SecureNet Technologies for more information.