2000 Toolbox Diagnostic Wizard

2000 Toolbox Diagnostic Wizard tests your PC for Year 2000 hardware and software compliancy, as well as Year 2000-specific viruses. The 2000 Toolbox Diagnostic Wizard lets you test the following::

- Application Compliance: Searches your PC for programs that have Year 2000 issues and displays information about what those issues are. If available, it also provides an Internet address where you can go to see more information.

- Database and Spreadsheet analyzer: Looks at your database and spreadsheet files on your hard drive and checks and repairs any file that may have Year 2000 incompatibility.

- Viruses: Uses proven McAfee VirusScanner technology to scan your hard drive for any viruses, including Year 2000-specific viruses.

- Hardware Checker: Checks your RTC, BIOS, DOS, and Windows clocks to see how they transition through four critical dates.

Using 2000 Toolbox Diagnostic Wizard

The 2000 Toolbox Diagnostic Wizard tests your system to determine if your PC is year 2000 software and hardware compliant. It can repair non-compliant applications and, database and spreadsheet drivers. It can also check your PC for 2000-specific viruses.

See Also:
Testing Application Compliance
Using the Database and Spreadsheet Analyzer
Using the Hardware Checker
Checking for Year 2000 Viruses

Testing Application Compliance

The Application Compliance option in 2000 Toolbox Diagnostic Wizard searches your PC for programs that have Year 2000 issues and displays information about what those issues are. If available, it also provides an Internet address where you can go to see more information.

You need to verify that the software you us is Y2K compliant. Also, check with your computer vendors for Year 2000 compliance in all new products or updates you acquire. If you are using older software, it is an excellent idea to update it.

If you have custom software, its programmers must examine the source code, looking for not only two-digit dates, but also for obscure times when dates, week counts, or even day of the week calculations are performed. If an inaccurate calculation of leap years is made, even the day of the week can be thrown off.

If your PC is connected to a LAN, be aware that networking software synchronizes the server clock with your PC's clock whenever you connect to a server. This means that LAN servers must be accurate, or they could update workstation clocks resetting them all to the wrong date.

To test application compliance

1. Click the Start button, Point to Programs, point to 2000 Toolbox, and then choose 2000 Toolbox. The 2000 Toolbox Diagnostic Wizard appears.

2. Click Next. The diagnostic panel of the Wizard appears.

1. Select Application Compliance (clear the other options), and then click Next. The progress panel of the Wizard appears.

2. Click Skip to skip a particular set of diagnostics, or Stop to stop diagnostics altogether.

3. Once testing is complete, a message appears stating that all checks are complete. Click OK. If problems were detected, the problems panel of the Wizard appears.

4. To see more information about a problem, select the problem and click Explain or Summary. You can print problem summaries. Click Close to close the Summary dialog box.

5. Select the check box next to the problems you wish to fix.

6. Click Fix to choose a solution for each problem. A progress panel appears, notifying you when the fix process is finished.

7. Click Next. A results panel appears, summarizing the tests performed, problems found, and problems fixed.

8. Click Finish to exit 2000 Toolbox Diagnostic Wizard.

Using the Database and Spreadsheet Analyzer

The Database and Spreadsheet Analyzer option in the 2000 Toolbox Diagnostic Wizard looks at your database and spreadsheet files on your hard drive and checks and repairs any file that may have Year 2000 incompatibility.

To analyze databases and spreadsheets

1. Click the Start button, Point to Programs, point to 2000 Toolbox, and then choose 2000 Toolbox. The 2000 Toolbox Diagnostic Wizard appears.

2. Click Next. The diagnostic panel of the Wizard appears.

3. Select Database and Spreadsheet Analyzer (clear the other options), and then click Next. The progress panel of the Wizard appears.

4. Click Skip to skip a particular set of diagnostics, or Stop to stop diagnostics altogether.

5. Once testing is complete, a message appears stating that all checks are complete. Click OK. If problems were detected, the problems panel of the Wizard appears.

6. To see more information about a problem, select the problem and click Explain or Summary. You can print problem summaries. Click Close to close the Summary dialog box.

7. Select the check box next to the problems you wish to fix.

8. Click Fix to choose a solution for each problem. A progress panel appears, notifying you when the fix process is finished.

9. Click Next. A results panel appears, summarizing the tests performed, problems found, and problems fixed.

10. Click Finish to exit 2000 Toolbox Diagnostic Wizard.

Using the Hardware Checker

The Hardware Checker checks your RTC, BIOS, DOS, and Windows clocks to see how they transition through four critical dates. It provides a resident program (Y2Kfixer.com) that can fix problems with your PC's date handling at the transition to 01-01-2000 and beyond.

To test PC hardware compliance

1. Click the Start button, Point to Programs, point to 2000 Toolbox, and then choose 2000 Toolbox. The 2000 Toolbox Diagnostic Wizard appears.

2. Click Next. The diagnostic panel of the Wizard appears.

3. Select Hardware Checker (clear the other options), and then click Next. The progress panel of the Wizard appears.

4. Click Skip to skip a particular set of diagnostics, or Stop to stop diagnostics altogether.

5. Once testing is complete, a message appears stating that all checks are complete. Click OK. If problems were detected, the problems panel of the Wizard appears.

6. To see more information about a problem, select the problem and click Explain or Summary. You can print problem summaries. Click Close to close the Summary dialog box.

7. Select the check box next to the problems you wish to fix.

8. Click Fix to choose a solution for each problem. A progress panel appears, notifying you when the fix process is finished.

9. Click Next. A results panel appears, summarizing the tests performed, problems found, and problems fixed.

10. Click Finish to exit 2000 Toolbox Diagnostic Wizard.

Checking for Year 2000 Viruses

The Viruses option in 2000 Toolbox Diagnostic Wizard uses proven McAfee VirusScanner technology to scan your hard drive for any viruses, including Year 2000-specific viruses.

To check for viruses

1. Click the Start button, Point to Programs, point to 2000 Toolbox, and then choose 2000 Toolbox. The 2000 Toolbox Diagnostic Wizard appears.

2. Click Next. The diagnostic panel of the Wizard appears.

3. Select Viruses (clear the other options), and then click Next. The progress panel of the Wizard appears.

4. Click Skip to skip a particular set of diagnostics, or Stop to stop diagnostics altogether.

5. Once testing is complete, a message appears stating that all checks are complete. Click OK. If problems were detected, the problems panel of the Wizard appears.

6. To see more information about a problem, select the problem and click Explain or Summary. You can print problem summaries. Click Close to close the Summary dialog box.

7. Select the check box next to the problems you wish to fix.

8. Click Fix to choose a solution for each problem. A progress panel appears, notifying you when the fix process is finished.

9. Click Next. A results panel appears, summarizing the tests performed, problems found, and problems fixed.

10. Click Finish to exit 2000 Toolbox Diagnostic Wizard.

What is the Year 2000 Problem?

The countdown is on to the year 2000. So what's all the hubbub about this date in the computer world?

For nearly a millennia, we have been abbreviating the year to simply two digits in date notations. Almost universally, people understand that 12/01/98 means December 1, 1998. Unfortunately, most computers and software followed suit.

The problem in a nutshell is simple math (which is the language of computers). Computers and software most often allocate two digits for the year, both when storing the information and when displaying it on the screen. Starting in the year 2000, our data will span two centuries. For that reason, four digits must be used to accurately sort, calculate and compare years in the 1900s and 2000s.

The human eye can instantly recognize that 00 means the year 2000 and 95 means 1995. Therefore on screen displays, dates are likely to still only show two-digit years. But the underlying storage and calculation of dates must change.

Using two digits for the year works fine when all the dates are in the same century. However, when dates span centuries, calculation problems can arise unless computers use four-digit years. For instance, when subtracting 06/01/95 from 06/01/05 to determine a person's age, a computer using two digits would produce an incorrect result of -90 instead of 10 (the accurate result).

Why is the Y2K Issue So Urgent?

The year 2000 is the beginning of the Gregorian calendar year that culminates with the start of a new century and a new millennium. It is also the year whose first tick of our clock's second hand will test the date handling of computers and software worldwide. What makes this issue urgent is that the deadline for bringing computers and software into Year 2000 (Y2K) compliancy is fixed. We simply cannot turn back the clock and still have meaningful data.

So will our computers and software accurately handle this transition from dates in the 1900s to dates in the 2000s? Or will our computers suddenly miscalculate the date and reset computer clocks to some date only meaningful to the developers, such as January 1, 1990 or January 4, 1980? Or worse yet, will our computer systems stop working entirely? These situations are all possible. And the Y2K problem is massive, affecting governments, private sector business and home users alike.

For this reason, U.S. Government agencies estimate they will spend $2.3 billion between the 1996 and 2000 fiscal years bringing government computer systems into compliancy before the beginning of the year 2000. Solving the Y2K issue is the most massive example of human cooperation and teamwork to date. In that respect, achieving total compliance before 2000 will be something to celebrate in itself.

Why Do We Have Y2K Problems With Our Computers?

The Year 2000 issue is a problem now, because of design decisions made two or more decades ago by engineers and programmers. These people knew that the turn of the century loomed only 20 years in the future. However, they were confident that their products would only have a five to ten year lifespan. Hardware wears out, and software is enhanced (at that time approximately once every year a new release of software was made available).

There were other factors involved in those early decisions to use a two-digit year. Screen "real estate" (or the area on the screen available for displaying information) has always been a precious commodity. Also the standard method of noting dates by hand and in printed forms used only the last two digits of the year. For these reasons, and for reasons associated with the storage space needed to store dates, developers opted to go with only two digits to represent the year (that is, 93 is 1993, 86 is 1986, and so on).

These developers were confident that their products would be "wall art" long before the next century commenced. In that regard, they were right. The earliest microcomputers (such as Z80 and 8080 CPUs) and their software have long been obsolete and are now in some cases collectors items.

What these developers did not predict was that the standard methods of storing dates that they defined would become "etched in stone." They did not foresee that their hardware and software, although long out of production, might remain in use long into the future due to replacement costs. Neither did they expect that using two-digit years would start a chain reaction of backward compatibility and design stasis that has caused developers to scramble en masse to find and fix every single occurrence of Y2K non-compliance in hardware and software alike.

What are the RTC, BIOS, DOS, and Windows Clocks?

2000 Toolbox's Year 2000 Checker can test the four clocks on your PC. They are the RTC, BIOS, DOS and Windows clocks.

The *RTC (Real Time Clock)* is a device in your computer that maintains the time (measuring elapsed time) even when you turn off or unplug your PC. Accurate time measurement is needed on your PC, and not just so that you can use your computer as a timepiece either. Your PC uses accurate time to perform a flow of computing tasks. The RTC clock gives your computer the ability to perform tasks in order.

The *BIOS (Basic Input/Output System) clock* is stored in firmware, such as PROM (Programmable Read Only Memory) or EPROM (Erasable Programmable Read Only Memory). When you start your computer, the BIOS reads the date and time from the RTC. The BIOS is your PC's "traffic cop," which dictates how software interacts with all the peripheral devices in your computer, including the RTC clock. Most software gets the date and time from the BIOS, DOS, or Windows clocks. Non-compliant BIOS clocks have reset themselves from 12/31/1999 to 01/01/1900 when the year 2000 begins.

The *DOS (Disk Operating System) clock* gets its date and time from the BIOS clock, and then makes the current date and time available to you or to any application that requests it. You can change the DOS date and time in an MS-DOS Prompt window using the DATE or TIME commands. Non-compliant DOS clocks have reset themselves from 12/31/1999 to 01/04/1980 (the date when DOS was originally released, and before which it did not need to support a current date).

Note   Although seemingly transparent, MS-DOS still runs underneath Windows 95, so the Year 2000 Checker fixes the DOS date if it is non-compliant.

The *Windows clock* gets its information from the DOS clock, and makes the date and time available to Windows applications, or to you via the Date/Time control panel. Non-compliant Windows clocks have also reset themselves from 12/31/1999 to 01/04/1980.

How to Ensure Y2K Compliancy of Your PC's Clocks

2000 Toolbox's Year 2000 Checker can instantly determine exactly what the four primary clocks on your computer will do on certain milestone dates without some form of correction or intervention. It can also bring these clocks into compliancy by installing the Y2Kfixer.com program, and adding a line to your AUTOEXEC.BAT file that causes this program to run each time you start your computer. Even if you uninstall 2000 Toolbox, the Y2Kfixer.com program remains on your system so it continues to be Y2K compliant.

What Does Year 2000 Checker Test and Why?

The 2000 Toolbox Year 2000 Checker tests each of the four clocks for the following dates. In each case, it starts the tests a few seconds before the date and verifies that the transition to the next day's date is accurate.

01/01/2000

This date is the 2000 rollover. In some applications that perform forecasting or handle future dates, this date will be reached before the actual calendar date. Examples of this include banking, accounting and project management software. In many cases, these programs may begin using 01/01/2000 when the previous year begins on 01/01/1999 or even earlier. The Year 2000 Checker tests to make sure that all four clocks transition accurately from a few seconds before 01/01/2000 into the next day.

02/29/2000

The year 2000 is a leap year, so the Year 2000 Checker verifies that this date is accurate.

The rule for determining leap years is:

- Years divisible by 4 are leap years except for years ending in 00.
- Years ending in 00 that are divisible by 400 are leap years.

Reports have been made of computers failing to accurately consider 2000 a leap year (and instead making the year 2001 a leap year).

03/01/2000

Some BIOS clocks go correctly to February 29, 2000 but then continue to an inaccurate date of 02/30/2000. So the Year 2000 Checker tests not only   02/29/2000, but also that it then moves accurately to the first day of March (03/01/2000).

01/01/2002

The Year 2000 Checker tests 01/01/2002 to ensure that farther down the road your clocks are still handling dates accurately. It also confirms that the clocks do not consider the year 2002 to be a leap year.

What Other Y2K Problems Must You Resolve?

After you ensure that your PC's clocks are Y2K compliant using 2000 Toolbox's Year 2000 Checker, you still need to verify that the software you use, and your data itself, is also Y2K compliant.

Check the ways that you use dates in your data (such as embedding dates in identifiers like serial numbers). Also check with your computer vendors for Year 2000 compliance in all new products or updates you acquire. If you are using older software, it is an excellent idea to update it.

If you have custom software, its programmers must examine the source code, looking for not only two-digit dates, but also for obscure times when dates, week counts, or even day of the week calculations are performed. If an inaccurate calculation of leap years is made, even the day of the week can be thrown off.

If your PC is connected to a LAN, be aware that networking software synchronizes the server clock with your PC's clock whenever you connect to a server. This means that LAN servers must be accurate, or they could update workstation clocks resetting them all to the wrong date.

Year 2000 Checker Test Methods

Your PC has four clocks where date and time information is gathered and stored. From the lowest level clock to the highest, these are the RTC (real time clock), the BIOS, DOS and Windows clock. The RTC clock is a hardware subsystem, and the other subsystems are software based. At each subsystem level, Year 2000 Checker will set the date and time, and get the date and time from that level and all levels below it.

Numerous dates are tested at all subsystem levels. Only January 1, 2000 problems can be fixed by the Y2K Repair Facility. All other problems require either a replacement BIOS or an operating system update.

Note   The first RTC clock test fails on most PCs. All known RTC chips fail to update the century. This failure can be overcome by the system BIOS on a year 2000 compliant system. The *Y2K Repair Facility* will not be installed unless non-RTC tests fail (BIOS level or above).

Year 2000 Checker Repair Methods

The *Y2K Repair Facility* (Y2KFIXER.COM) is installed on your hard drive. A line is added in the AUTOEXEC.BAT file that causes this program to run each time you start your PC. This ensures year 2000 hardware compliance whether the system is turned on or off during the transition to the next millennium.

Warning   The Y2KFIXER.COM program does *NOT* fix software packages, such as spreadsheets and databases, that represent dates with only a two-digit year. Contact the software manufacturer to determine if your version is year 2000 compliant.