The Year 2000: are you a time traveler?
by Robert E. Hilliard

When was the last time you thought about Y2K? You may have been standing in line for a burger, purchasing an item with your credit card or boarding a flight for a business trip. As the millennium approaches, the question, "Does Y2K effect me, and if it does, what can I do about it?," is asked more and more. The answer is simple. If you use a computer, you are affected. Every aspect of our lives is touched, in some way, by computers. From the weekend PC user all the way up to the big iron programmer, the Year 2000 date crisis is real and sits dormant, waiting to come alive at the first hint of a millennium change. For some, that change has already hit home more quickly than expected.

This is the reason many people are becoming time travelers. These "vortex nomads" are creating "Time Machines" in an effort to control their Y2K destiny. It began in the mainframe world and is now spreading to other computer platforms, allowing the traveler to see and feel the effects of Y2K without really being there. To build an effective time machine, one only needs a device that processes a date. External materials are not needed. And the cost is minimal~ all it takes is a small portion of your time. A typical trip to the future can take place in minutes, and the benefits are immeasurable.

Understanding the Year 1000 problem: your journey begins

In order to create an effective time machine, one must know the history of Y2K. Briefly, the Year 2000 date crisis began as a shortcoming in the storage of calendar data. Back in the days when computer storage costs were high, dates were kept in a six-digit format. The century was left out in order to save space and thus save money. For instance, the date, May 14, 1998, would be stored as 05-14-98 or 051498. This practice became so commonplace that it spread not only through the computer world, but through the embedded world also. This includes such items as manufacturing equipment, elevators, automobiles, etc. -- any piece of hardware or software that stores and processes a date.

The crisis comes full circle when the date January 1,2000 is added. Any system processing a six-digit date will show January 1,2000 as 010100. This confuses the

system. It doesn't know if the date refers to the year 1800 or 1900. Many PC BIOS chips are not programmed to reach the year 2000, so they refer to the earliest date they can which is 1982. Some chips will go back all the way to 1900, others will not boot up at all. This is what makes Y2K so complicated. Each computer and each embedded system must be tested individually. Even though two computers may be of the same make and model, their Y2K testing results can be totally different.

The misinterpretation of the year 2000 is bringing about embarrassing results. Companies are spending millions of dollars trying to rectify the problem. The deeper they dig, the bigger the problem seems to get. As one computer user puts it, "Y2K is like an onion: the more you peel, the more you cry."

Currently, the biggest problem to Y2K remediation is apathy. There are not enough people willing to become time travelers. Many companies feel that the "millennium bug" will not effect them, so hardware and software is going untested. Recognizing that you have a Y2K problem is ninety percent of the solution. Webmasters and Web developers are no exception. You may have a Y2K problem and not know it. The hardware and software you use must be tested for compliancy. If you connect to other Web servers with old databases that do have a Y2K problem, more than likely, your remediation project just doubled in size.

Creating your very own "Time Machine": a vortex is forming

There are several tests that must be performed before you can become an official time traveler. You can use these tests to simulate the turn of the century on any PC, client or server system.

First, take the Year 2000 test:
I. Back up your applications and data or setup a separate machine, apart from any production environment,
2. set the date on your system to December 31st, 1999,
3. set the time to 23:58hrs (11:58pm) and then POWER OFF the computer,
4. wait at least 3 minutes and then turn the PC or server back on,
5. check the date and time. It should be a minute or two past midnight, on the morning of Saturday, January 1st, 2000. The year "2000" must be displayed, not "00"
6. execute a number of applications, checking for how the date is displayed and

processed and

7. set the date and time back to the current settings.

Note: If your PCBIOS did not pass this first test, one of two things come to play: (1.) Your BIOS is not Y2K compliant and cannot display or process the century 2000 or (2.) your BIOS may just be suffering from 1999-2000 transition failure. This means that the BIOS will work effectively in the Year 2000 and beyond, but will not make the transition from 12/31/1999 to 01/01/2000. Sometimes this transition problem can be solved by using Y2K correcting software or by simply changing the date to January 1, 2000. After the transition problem has been encountered; and the date has been changed; the problem may not come up again.

Second, take the Leap Year test:

1. Back up your applications and data or setup a separate machine, apart from any production environment,
2. set the date on your system to February 28th, 2000,
3. set the time to 23:58hrs (11:58pm) and then POWER OFF the computer,
4. wait at least 3 minutes and then turn the PC or server back on,
5. check the date and time. It should be a minute or two past midnight, on the morning of February 29th, 2000,
6. execute a number of applications, checking for how the date is displayed and processed,
7. set the date and time back to the current settings and
8. repeat Steps 2 through 7 using February 29th, 2000 as the date in Step 2.

Here are some points to remember as you are traveling in time:

It is important that you turn off your computer and power up when instructed. In most cases, just changing the date and time and watching them turn over to the year 2000 without powering off will not give you a true test of the BIOS.

Some network administrators control the century on your CMOS when you log on to the LAN. The user mistakenly thinks that the error is with his or her machine, but it isn't. You must conduct all workstation tests with your LAN cord physically unplugged.

If you are using a Macintosh, your hardware and operating system are Y2K compliant. It's your application software that may not be. Also, check how you are storing dates in data files.

As with any test, results may vary. If your machine does not pass the tests, contact your BIOS chip manufacturer for an update or replacement chip that is Y2K compliant.

The journey is over: the Y2K fun is just beginning

For those that find themselves with a Y2K problem, a remediation plan must be developed and quickly acted upon. After testing your hardware, take a look at your applications. Are they Y2K compliant? How long do you plan on keeping them before upgrading? Will they be replaced anytime in the future? How date-dependent are your applications? These are just some of the questions that need to be included in your plan.

Interfacing must be considered also. Do you depend on others that might have a Y2K problem? What impact will they have on your day-to-day operations with respect to databases? Communication is the key. Talk to your interface partners and discuss the problem openly. Find a solution that will meet the Y2K goals of both organizations. Remember that the millennium cannot be postponed.

Conclusion

Although awareness is growing, we still are not where we need to be in the Y2K remediation process for all platforms. There are countless sites online offering help and guidance in testing. Stay informed and keep in mind that there are no quick fixes. Create your own time machine and encourage others to do the same. Will the millennium bug bite you? Only time will tell.

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