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Y2K – WHAT IS IT?

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With the year 2000 nearly upon us all segments of society, business, governmental, and individual households, are considering the effects of the year 2000 (Y2K) computer glitch. When discussing Y2K, it is difficult to separate fact from fiction. Opinions on the impact of Y2K vary widely, with experts often directly contradicting one another. Part of the reason for these contradictions is that there is no one solution to the Y2K problem. Many people believe this is a technical problem, but in reality, this can become a business or personal problem if the appropriate steps to prepare are not taken. The obvious solution lies with each group or individual to examine their susceptibility to Y2K and to formulate solutions if problems are found.

This document is the first in a series addressing the Y2K problem. The entire series of publications will address the following Y2K topics:

1. Becoming familiar with the Year 2000 problem.
2. Testing Computer Hardware.
3. Testing Computer Software.
4. Embedded Systems.
5. Contingency Planning.

The Problem

The year Y2K problem stems from a fundamental inability of computer hardware and software to correctly process dates into the next century. Over 20 years ago computer systems and software were designed with this limitation because processing power was meager and memory and storage costs were much higher than today.

Since each digit uses up memory, hardware and software developers omitted the "19" in front of the year to conserve space and money. Plus back then, the Year 2000 was simply too far off to worry about anyway.

The problem is global in nature affecting mainframe systems, personal computers telephone systems, data communication equipment, and embedded processors found in such things as alarms, heating/cooling units, elevators, and various types of office equipment. The inability of these devices to correctly process dates into the next century represents significant operational risk to all organizations that use them.

This problem results from computer hardware and software that is unable to do three things:

1. Four-Digit Years

The most common of these three problems stem from devices that are unable to translate two-digit years into four-digit years (e.g. 1-1-98 into 1-1-1998). This becomes particularly problematic when we reach the Year 2000 because older systems consider the date 1-1-00 to be January 1, 1900 and not January 1, 2000. If the computer were to try and calculate someone's age this way, it would provide a result of negative 68 years old. This particular problem is like to surface even before we reach the year 2000 because some computer systems are designed to make calculations based on dates on or after January 1, 1999 (e.g. graduation dates, projected retirement dates, etc.).

2. Leap Year Recognition

Back when many computer systems were first developed, some programmers didn't realize that the Year 2000 was a leap year. This means that there will be a February 29, 2000, and computers need to acknowledge this or else all dates following it will be off one day.

A leap year is a year that is divisible by 4. However, a leap year will not occur if it is divisible by 100, unless it's divisible by 400. That means that the year 2000 is a special leap year that only happens every 400 years.

3. Special Dates

This problem exists in older, as well as recent, computer programs which use special dates like 9-9-99 to represent certain functions such as ""Save this record forever" or "Delete this record after 90 days". Once these dates are encountered in these special computer programs, either prior to or beyond the Year 2000, erroneous results are like to occur in data output.

Potential Impact

If the year 2000 problem is not fixed, problems are like to occur in those systems that use date sensitive information. Some examples may be paychecks not processed properly, heating and cooling systems may fail, and employee records may be corrupted. Depending on the situation, these outcomes fall into three categories:

No Impact:

Systems that are date sensitive, don't fail and don't disrupt your process;

Selective Failure:

Systems that are date sensitive stop processing dates but still continue to function; and

Ma*jor System Failure:*

Systems that are date sensitive may potentially shut down.

Although the much talked about date is January 1, 2000, when more Y2K failures are expected to occur, many experts predict the problem will more likely be persistent over a few years. Some key dates to remember are:

- July 1, 1999, when many governments begin the next fiscal year;
- August 21, 1999, when the Global Positioning System date rolls over;
- September 9, 1999, because many programmers use 9/9/99 as infinity;
- October 1, 1999, when the federal government and others begin the fiscal year 2000;
- January 1, 2000, when systems and electronics begin to use the year 2000;
- January 10, 2000, because this is the first time many systems will have to use a full seven digits;
- January 31, 2000 – W2's and Form 1099's are due;
- February 29, 2000, because this is the first time many systems will have to use a full seven digits;
- March 1, 2000, because it is the first valid date after Leap Year;
- October 10, 2000, because this is the first time many systems will be required to use a full eight digits;
- December 31, 2000, because some systems using Julian dates may not recognize the last day of Leap Year; and
- Any month XX, 2000 – the last day of your agency's fiscal year.

Additional Y2K information can be obtained from your local Cooperative Extension Office or by contacting Buddy Borden, Community Development Specialist with Nevada Cooperative Extension (702) 222-3130 or Tim Darden, Research Analyst with the University Center for Economic Development, (775) 784-6994. Other useful websites with Y2K information include:

http://y2khelp.nist.gov

http://www.sba.gov/y2k

http://www.year2000.com

Material presented in this document was gathered from Council of the Great City Schools, Washington, D. C. and Center for Community Economic Development, University of Washington.