

County of Alameda

Information Technology Department

Y2K News

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F.Y.I.

The address (URL) for the YMARK2000 test tool in the last newsletter has changed. There is no charge for this program. You may now download the program from http://www.nstl.com/html/nstl_ymark2000.html (underscore between the second nstl and ymark). If you are unable to download the program, contact ITD and request a diskette.

You may have heard by now that Windows98 has some year 2000 issues. For a list of the problems, visit www.microsoft.com/windows98/highlights/Win98Y2K.asp. There is a link to the Windows 98 Update page where you will find patches to download.

Y2K Forums in 1999

These popular two hour sessions are held at the Alameda County Conference Center, 125 Twelfth St., Oakland from 9:30 to 11:30. Dates for the 1999 series are:

Monday, 1/25	Friday, 4/30
Thursday, 7/29	Wednesday, 10/27

Invitations to the January Forum have been E-mailed to our mailing list. If you haven't received an invitation and would like to attend, please contact Hal Feuchter at 272-3630 or by E-mail. Find out if your PC will continue to work in 2000, if your spreadsheets will be correct, and what to do if you have problems - Attend one of the scheduled forums!

Embedded Systems

Scenario: It is Monday, January 3, 2000. You have just pulled into your parking place at work and notice that the lights are on in the parking lot and in your building. You use your security key and enter the building. Although it has been cold for the past week, the temperature in the building is comfortable. You take the elevator to your floor and proceed to your work area. You power up your computer and connect to the network. Everything seems fine. You know your IT department has checked your computer, software, and data. All of the predictions have, so far, failed to materialize. The week has started off well.

It is now Thursday, January 6, 2000. You pull into your parking place and notice the lights are off in your building. You approach the door and your security key doesn't work. One of the guards opens the door from the inside and lets you in. The building is cold and the elevators are shut down, so you walk up to your floor - emergency lights illuminate the stairwell. You use your keychain flashlight to find the lock on your desk, open the desk drawer and remove your emergency flashlight. You pick up your phone to place a call and discover you do not have a dial tone. What is going on?

The Y2K bug, in the form of embedded chips, has just bitten you several times. So, why did the problem show up on Thursday and not Monday? Because the embedded chips did not recognize year 2000, the chips rolled to 1900. January 6, 1900 was a Saturday and the building functions switched to a weekend mode, shutting down most of the environmental functions.

All embedded chips are or include computers. The simplest form is a single microprocessor ("chip") that performs a single function, such as a smoke detector. In the above scenario, heat, light, security, elevators, and telephone all contain embedded chips. In many cases, the embedded chips are far from obvious to the casual observer and may take the technically skilled some time to determine if there is an embedded chip problem.

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Spotlight on Dates

01/01/1999	First date using "99" in the year field. May impact systems using "99" as a special flag for handling data. Systems that look one year ahead may fail.
04/09/1999	Special use Julian date (99 th day of 99 th year).
07/01/1999	Beginning of fiscal year 2000 for the County and State.
08/21/1999	Global Positioning System (GPS) date rollover.
09/09/1999	Programmers used 9/9/99 as an end of file or infinity in older programs. May cause problems if the programs have not been remediated.
10/01/1999	Beginning of fiscal year 2000 for the Federal Government.
12/31/1999	Date rolls to 2000 at midnight.
01/01/2000	Some systems may have trouble looking back to 1999 when dates are represented as two digits. Calculation errors may occur when dealing with two digit years
01/10/2000	First date requiring the full use of seven digits (1/10/2000)
02/28/2000	Day prior to the first leap day of 2000 (to be used in rollover scenarios)
02/29/2000	First leap day of 2000. Some systems will not properly recognize the leap year in 2000.
02/30/2000	Invalid date. Test to make sure the logic is functioning.
03/01/2000	Test for correct rollover of leap date.
10/10/2000	First date requiring the full use of eight digits.
12/31/2000	Some systems using Julian dates may not recognize the 366 th day of the year (another leap year problem). For systems still using two digit years, may cause errors when combined with 01/01/2001 when programs look forward or back in processing dates.

It has been estimated that there will be in excess of 25 billion embedded chips by the end of 1999. **25 BILLION.** If we assume that one tenth of one percent of these chips are defective, there are 25 million chips to be replaced or reprogrammed. There are not enough programmers or technicians to complete this task.

Given the enormity of this problem, what should you do? Today, not tomorrow, begin a risk assessment. Determine what the mission critical systems are for your work site. Do any of the systems exhibit intelligent behavior? That is, are any of the processes handled differently during non-standard work hours or do the processes start/end on specific days or times? Are those systems life and death critical, such as heart defibrillators, or are you able to operate for a period of time without them, such as copiers or time recording machines? Unlike some projects, this one has a very definite deadline.

Key Actions for Embedded Chip Y2K Projects Inventory - Risk Assessment - Prioritization Fix or Replace

Embedded Systems can be found in water and sewage plants, power stations, oil refineries, power grid systems, traffic lights, ticketing systems, elevators, escalators, backup lighting and generators, security systems, fire control systems, safes and vaults, heating and ventilating systems, door locks, GPS systems, cable systems, telephone switches and systems, faxes, copiers, video cameras, mobile telephones, credit card systems and ATMs, heart defibrillators, pharmaceutical control and dispensing systems, pacemaker monitors, x-ray equipment, patient information and monitoring systems, electrocardiograph and electroencephalograph equipment, and many more. (California Year 2000 Embedded Systems Program Guide, June 1998)

Practice What You Preach

ITD has now checked all of their desktops for Y2K compliance. YMARK200 was the test tool used. Over 50% of the PCs will not automatically roll to 2000 and will require a manual reset of the date when the staff returns to work on January 3, 2000. All of the PCs tested able to hold a year 2000 date. The **bottom line** - spend less than five minutes per PC to reset the date and avoid the need to purchase new hardware.

THERE IS NO NEED TO TEST YOUR PC FOR THE DATES SHOWN ON THE LEFT. THE LIST IS GIVEN FOR INFORMATIONAL PURPOSES ONLY.