

Multiple Monitors in Windows

By Milt Hull

I have been involved in the Sacramento PC Users Group for many years. As a matter of fact, I have been writing articles for SacraBlue ever since 1983. The other day I was looking up some of my old articles and I found one about dual monitors. Dual Monitors were not really supported back in those days and really did not get implemented until Windows 98. Ever since then, every Windows operating system has support for multiple displays. Have you seen the 2010 movie called Wall Street: Money Never Sleeps? In the movie Gordon Gekko walks over to his workstation and it has six displays on it; all showing the latest stocks on all six monitors. It was Cool!

DOS

Back in the day, I used DOS as an operating system. DOS 6.22 was the last version and really did not support Dual Monitors. However, DOS had a major limitation to memory and there were blocks of memory only to the one megabyte location. Below is an example of the entire top of an 8086/88 address space:

F000:0000	Basic Input/Output System (BIOS)
E000:0000	reserved
D000:0000	reserved
C000:0000	SCSI and other BIOS support
B800:0000	Color/Graphics Display BIOS
B000:0000	Monochrome Display BIOS
A000:0000	Graphics memory space & Video Buffers
9000:0000	

Conventional Memory

0000:0000

Now the Disk Operating System really only supported one display at a time but did not erase or overwrite any memory in the B000 block or for the B800 block unless it was writing to display new text. Back then, I used a program called Automenu. Automenu had a switch that would change from Monochrome to Color Display with a single key. It was awesome because you could run Lotus 123 in Monochrome and then display a graph and it would show up on the Color Display. The mode command would also change displays for you and make the current display change from Color back to Monochrome. Also I wrote a assembly command that changed the mode to the current display adapter which I was quite proud of at the time. However, remember, only the active display would work at the time and some of those old DOS based programs did not support writing to those addresses. Screen Savers were also a real problem.

Windows 98 Second Edition

Well when I first got Windows 98 Second Edition was when I got to test out dual monitors. Back then they were CRT's and huge monitors were expensive to run. However, everything in Windows ran in GUI or Graphical User Interface and you could actually move the mouse over from one screen to another. Then true Multi Display productivity came about. Browsing on one screen and writing an article on another was fantastic.

Multi-Display Adapters

Then the invent of true Multi-Display adapters started to appear in the market place. Many supported Dual VGA adapters and just by putting in two single display adapters in the same machine would work as well. I remember one machine that I configured with a Matrox dual display adapter for a client and she wanted to clone the two displays so she could show her clients what she was looking at. Matrox had a Ctrl-Alt-C command which would toggle between cloning and extending the displays for her. I liked it. Windows XP handled multiple displays the same as Windows 98 did.

Windows 7

Now with Windows 7 out there, there is even more support for Multiple displays. As a matter of fact, I have two systems with Quad Displays in them and one with three monitors on it. It is so easy to change the monitors around as well. One of the systems has two Dual Display Adapters and the other has a Quad Display adapter. Keep in mind, if you put in two display adapters, they must match technology. So if you have a PCI and a PCIe card, they will not work together. They both have to be either PCIe or PCI but not different.

Once you have the display adapters installed, go into the Screen Resolution on the Display part of the Control Panel and there you will see the appearance of your screens. You can grab one or more of these displays and move them around to rearrange them to what you would like. In this example, notice that I have them in the order that I see them at.

However, I You could set them up just elongated spread across the desk if you don't have a mutil-display stand like I purchased. That was you could open up things like Excel and spread the pages over all four monitors and see up to cell CZ and everything in-between.

Change the appearance of your displays



Display: 1. DELL E2009W ▾

Resolution: 1680 × 1050 (recommended) ▾

Orientation: Landscape ▾

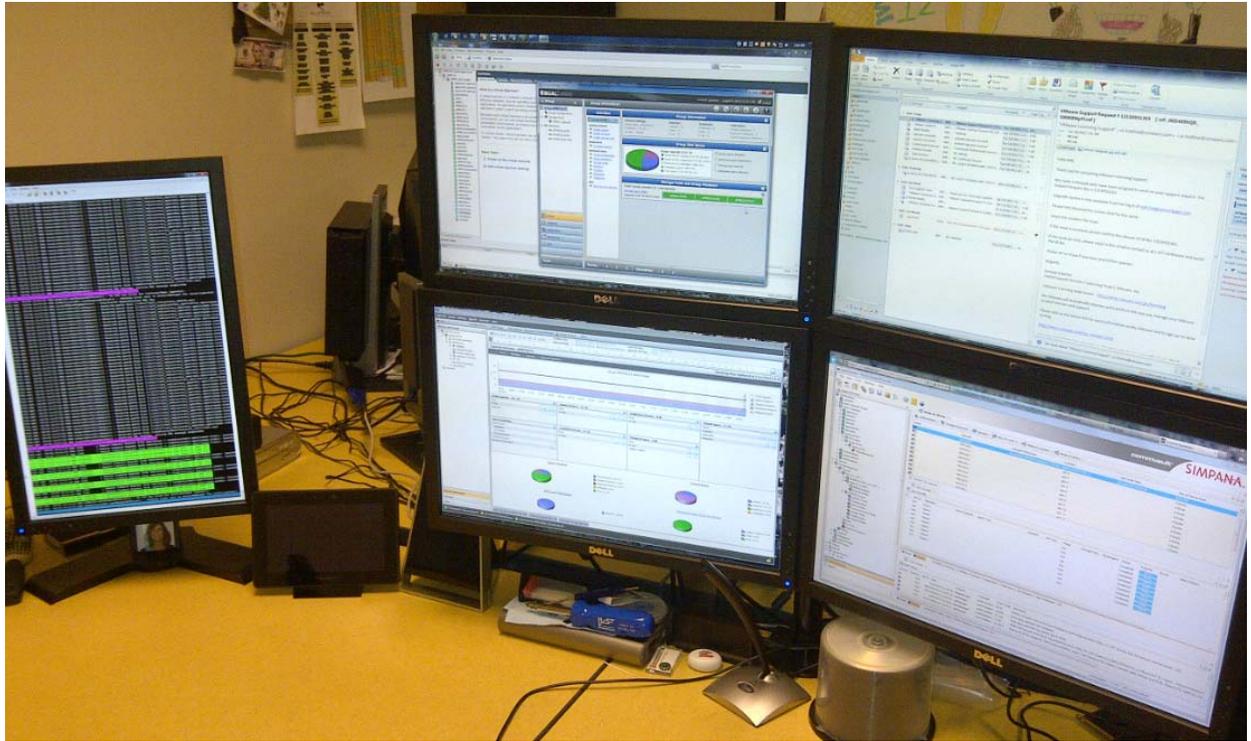
Multiple displays: Extend desktop to this display ▾

Change the appearance of your displays



In this example, I have a dual display adapter and an external USB Display adapter I purchased from DisplayLink. It will hook up to any USB and with the correct drivers drive an extra monitor. On this machine I monitor a log file that needs monitored all the time so I swiveled the monitor sideways.

So if you are a stock broker and need to keep up with the changes of a Network Engineer like myself and need to monitor many systems, then get yourself a couple of adapters or at least a multidisplay adapter and get computing.



My workstation