

# *Windo Watch*



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## The Editor's Soapbox!

### The Very Last Word on the BrowserWars..

I'm so tired of the relentless drum beat, "my browser is better than yours, and it's free!" Let's close the windows, turn up the air, and cool down the rhetoric !

The browser wars are a PR bonanza for both Netscape and Microsoft. It's worth zillions and it should only happen to WindoWatch and soon. Byte Magazine, if you haven't noticed us, - get on the stick !

The browser wars have created a media wallowing that has flourished for at least the last year reaping huge monetary rewards for contenders and commentators alike. It's better than OJ, a political convention or even the U.S. Open. Come on Byte, don't treat us like a pimple on the backside of a hot-pink elephant or worse!

This supra yuppy drama twix David and Goliath are in the category of waxing one's legs in public. It hurts like hell but necessary to keep our collective attention in focus. In unison or together! Oh Byte! Why don't you pick on us?

Notwithstanding other conflicts like the Middle East, Bosnia, and the every fourth year blood letting of American politics, the Gods of our collective fathers couldn't be kinder. Netscape and Microsoft enuff! It's WindoWatch's turn in the sun. Hey! You know who. Knock that feather off my shoulder! Take that! It's the American way.

### Eating Crow...

Last month the Acrobat edition was released with a huge error. Linda Rosenbaum's name was not on the masthead. I hear the hisses and boos and deservedly so. Among the other things that Linda does for the magazine are her editorial responsibilities for NT.

### The Simtel Collection

The entire WindoWatch archive is being moved to the Win95 listing or /win95/winwatch. If you are pointing to Walnut Creek, then the ful WWW reference is:

http://www.simtel.net/simtel.net/win95/winwatch  
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## **NT 4.0, RELEASE VERSION (BUILD 1381)**

**By Linda L. Rosenbaum**

**The closely watched and much anticipated release of NT 4.0 has finally arrived! Microsoft sent NT 4.0 release to production at the end of July and it began to appear in the stores at the end of August. I received my release version of NT 4.0 Server (build 1381) the Friday of Labor Day weekend and wasted no time installing the release version...**

**As I had done with the installation of beta 2, I installed the release version as an upgrade over my existing version of NT 4.0. As with beta 2, this is not recommended. However, I concluded that my prior upgrade seemed to be working fairly well and I was not interested in spending the time to have to start from scratch, if I did not have to do so. I do anticipate that, at some point I may need to do a fresh installation, but until that time, I am happily working in my several times upgraded installation.**

**My package for the release version did not include the three setup floppy diskettes. Since I prefer to install NT from them, I created the setup diskette before doing the installation. (Details on how to do so are found in setup.txt). I also printed out the setup.txt found on the NT 4.0 CD-ROM in the directory for Intel installations (i386 folder). This file contains important information about steps to be performed**

prior to installation as well as some things to look out for. The principal one affecting me was the continued advice given by Microsoft to disconnect the cable from a UPS to a serial port. I obligingly did so.

The installation of the NT 4.0 Server release went very smoothly. After creating the setup floppy diskettes, I shut down NT, inserted Disk 1 and restarted the computer. The setup diskette properly loaded and was quite similar to what I have seen in prior installations. At the point where the setup tells you to insert the NT CD-ROM and press enter, a dialogue detailing the license restrictions/ limitations appears. I do not recall seeing this with prior NT versions. I read through it and then agreed to its terms. Setup then continued. Setup properly saw my two installed versions of NT (NT 3.51 WS and NT 4.0 AS) and asked if I wanted to upgrade over one of them or install in a new directory. I chose to upgrade over my existing version of NT 4.0. I still have NT 3.51 WS on my system as well as Windows 95 and DOS 6.20.

Since I was upgrading, I was offered relatively few choices. It is worth mentioning that I was presented with even fewer than when I upgraded from beta 1 to beta 2. It seems obvious to me that an upgrade is geared to rigidly upgrade what it already finds installed. It is easy to go into Add/ Remove Programs in Control Panel to make changes after NT is installed. As a result of opting for the upgrade installation, I don't know what changes were made from beta 1 or NT 3.51, if any, when doing a series of clean installations. The Start Here documentation does cover most of this fairly well.

**During the installation I was presented with one message box that did catch my full attention. It read as follows:**

**The following non-Microsoft networking component is installed on this computer, 3COM Fast Etherlink/Etherlink III Adapter Driver. Although your network connection may function properly after the upgrade is completed, the component should be removed and replaced with a newer version.**

**I was a bit mystified by this dialogue box since I had assumed this would be done automatically. More on this a bit later.**

**As in beta 2, Microsoft Internet Information Server version 2.0 setup is fully integrated into Windows NT Server version 4.0 setup. In beta 2, however, I was never presented with the option to actually install it during my setup of NT Server 4.0 beta 2. In the release, version I was given this option and chose not to install it at that time.**

**NT Server 4.0 release also comes with Microsoft FrontPage version 1.1. Microsoft FrontPage provides a way to develop and maintain Web pages. Although I am not presently creating or maintaining a Web page (but I can do so via my ISP), I decided to try to install FrontPage. This is done apart from the NT setup. Using the Windows NT Server compact disc, the setup program is located in the \Frontpg \Frontpg folder. I chose the typical installation, which installs the client version of FrontPage, as well as the server extensions.**

**The setup program installs three \*.wri files that I highly recommend to print out and read after the installation of NT 4.0. They are in compressed format on the NT compact disk so are difficult to access**

until NT 4.0 has already been installed. The three files are readme.wri (located in \system32 folder), and network.wri and printer.wri (located in \winnt folder). The readme.wri contains quite a bit of additional information about Windows NT 4.0 ranging from special problems with specific programs being used in NT 4.0 to the particulars on certain hardware devices. The network.wri file contains additional details on networks (network drivers, TCP/IP, DUN, etc.) and printer.wri contains additional details on printers (printing issues, printer drivers, etc.).

I was curious about the message I had received during the NT 4.0 setup relating to my network adapter driver primarily because this network adapter is on the Hardware Compatibility List. I first looked in my \system32\drivers folder and saw that my network adapter driver had not been updated. As a matter of fact, I could see it was from beta 1 of NT 4.0 Server. After doing some asking via online forums as well as poking around myself, I finally understood better what the setup.txt documentation and message during installation was referring to. It seems that starting in beta 2 many/most of the network adapter drivers were moved to a different folder in the CD-ROM itself. The documentation makes it sound like a supported network card's drivers will be found and installed from this new location, at least for most PCI, EISA and MCA network cards. For reasons that are still not clear to me, it seems an upgrade does not automatically upgrade to a newer version of this specific driver. Beta 2, unlike the release version, gave me no messages during the setup, so I was unaware of this as an existing issue. The network adapter drivers for the vast majority of supported network cards are now located in the \DRVLIB folder on the CD-ROM. The HCL does point to the appropriate folder on the CD-ROM drive when the specific

network card listed is clicked on. I actually continued to use my older network adapter driver for some time while I tried to figure out and understand what was happening. I was finally pointed to the fact that in Network (in Control Panel), Adapters (Tab), I could choose to update my network adapter. I had to point to the proper location on the CD-ROM drive, but then the updating took place without incident. I did get an error message about not being able to find a .hlp file which did not exist on the CD-ROM, but that didn't have any negative effect on my ability to update the network card driver. After a restart, the newer driver was put into use.

What continues to be puzzling, is the license.txt file that exists in the \DRVLIB folder with respect to the network adapter card drivers contained therein. The license.txt documentation states that these drivers are for Windows 3.5x and earlier. It seems to imply that MS does not warrant anything with respect to using them in NT 4.0. And yet all printed documentation seem to indicate these are the appropriate drivers to utilize for NT 4.0.

About a week after receiving my release version of NT 4.0 Server, I received the release version of NT 4.0 Workstation. My husband also uses NT (we have a four system network of computers using a mixture of NT and Windows 95). We had installed NT 4.0 beta 2 on his system over the summer. We had intended to install NT 4.0 beta 2 in a separate directory from his NT 3.51 WS installation. However when faced with the choice of either upgrading or a new install, we decided to be daring and did an upgrade. We got lucky because NT 4.0 beta 2 has worked very well for him and it was so much easier doing an upgrade preserving his various settings and programs. We ran into a problem with using the software for his scanner (HP IICx) which was



cured by upgrading his system to the latest version of Adaptec EZ-SCSI (version of aspi32.sys that comes with HP software conflicts with something in NT 4.0).

I followed the same steps I had used for upgrading my system to the release version of NT 4.0. I made the three floppy setup diskettes and disconnected his UPS from the serial port. The upgrade went much the same as described for upgrading my system to the release version. However when we did the final reboot after setup was complete, we got a real surprise. The mouse was frozen! I saw the mouse properly and various cursors also displayed, but it would not move. Trying to navigate NT 4.0 without the use of a mouse is a true exercise in frustration. I tried all sorts of things such as restarting from a cold reboot and restarting in VGA mode. I finally got the idea to check the specific mouse settings via Control Panel and hit pay dirt. For reasons that are still a mystery to me, the upgrade selected a mouse driver called Pointer Device msi8042. My husband has an MS Mouse 2.0. After changing to the proper mouse driver for NT 4.0 (which again was a “treat” doing so without the use of a mouse), NT 4.0 release version came up and has worked fine for him since.

While NT Workstation 4.0 does now incorporate the Windows 95 user interface and many other features that first appeared in Windows 95, it is very important to note that there are some features available in Windows 95 that are not available in NT Workstation 4.0. These include the following: (1) Plug and Play, (2) Power Management, (3) Fax, (4) Direct3D, (5) Infrared, and (6) System Tools such as Disk Defragmenter and Scandisk. In addition, there is no way to upgrade to NT 4.0 Workstation over a Windows 95 installation. The two registries are incompatible and the release version of NT 4.0 WS

**contains no facility to convert a Windows 95 registry to an NT one. Hence anyone currently using only Windows 95 who desires to use NT 4.0 must reinstall all of their software.**

**The release version of NT 4.0 allows you to change your display properties without rebooting/restarting the computer. Display properties are changed by right clicking on the desktop and choosing Properties. The settings tab is where a different resolution and/or number of colors is changed. In some cases an application may have a problem if the display is changed without a restart. The readme.wri suggests closing certain types of applications prior to changing display properties. I have not actually tested this feature out because I rarely need to change display and have adjusted to it not being available in NT without a restart.**

**The release version of NT 4.0 incorporates direct draw. It is fully compatible, according to readme.wri, with the version released for Windows 95 in the DirectX 2 release. The only difference between these two versions of Direct Draw is that the Windows NT version does not support ModeX low resolution modes.**

**The readme.wri states that certain video cards have drivers which contain Direct Draw support in the release version of NT 4.0. The video cards are as follows (for Intel platforms): ATI Mach64, ATI Mach32, S3 Trio64V+, S3 Trio64V2, S3 868, S3 968, Matrox Millennium, and Tseng ET6000. Systems with video cards other than these are still able to run Direct Draw applications but no hardware acceleration is provided.**

**Unfortunately I do not have any applications/games with Direct Draw support so was not able to test the Direct Draw included in NT 4.0 release. I do have a video card listed as having hardware acceleration in Direct Draw.**

**For the first time, NT 4.0 release includes some support for joysticks. It contains a driver specifically for the Microsoft SideWinder 3D Pro joystick as well as a generic driver for other joysticks. The readme.wri file contains detailed directions on how to install the appropriate joystick driver.**

**Readme.wri also makes reference to NT 4.0 release CD-ROM containing drivers for Sound Blaster Plug and Play sound cards. NT 4.0 does not support Plug and Play as does Windows 95. As a result, cards such as the Sound Blaster sound cards have had problems in prior versions of NT. Creative Labs finally released a set of drivers for NT 3.51 for their various plug and play cards. Drivers for NT 4.0 are available on the CD-ROM. Readme.wri indicates where these drivers are located and suggests seeing the readme.txt in that folder before installing these particular drivers. I am fortunate that all of our three Sound Blaster sound cards are pre plug and play and as a result we have had no problems with the two used in the NT systems.**

**I continue to be pleased with the performance of NT 4.0. The release versions seems a bit faster to me than the beta versions were. However the various benchmarks have stayed consistently the same on my system since beta 1. I re-ran the full set on the release version. I originally was using the same equipment as I had been using for NT 3.51, NT 4.0 beta versions and Windows 95, as follows: Pentium P133 (Super Micro P55CMS motherboard with 512k pipeline cache) with**

an Adaptec 2940, Conner CFP 4207S, Hercules Terminator Professional (with 4 meg of video memory), and 64MB of RAM (fast page mode DRAM). About a week after installing the release version of NT 4.0, I decided to install a different video card into my system.

This video card did not have video drivers for the beta versions of NT 4.0 but does have video drivers included in the release version. It is the Hercules Dynamite 128/Video, which is based on the ET6000 chipset. All benchmark tests were run in 1024x768x16bit. In Windows 95, both video cards can get a refresh rate of 90. In NT 4.0 release both video cards can only get a refresh rate of 75 (due to limitations of Microsoft provided video drivers, not to limitations of the video cards themselves). The results from Winbench 96 version 1 are as follows:

	<u>NT 3.51</u> <u>(T Pro)</u>	<u>NT 4.0</u> <u>(T Pro)</u>	<u>NT 4.0</u> <u>(D 128)</u>	<u>Win 95</u> <u>(T Pro)</u>	<u>Win 95</u> <u>(D 128)</u>
Disk WinMark 96	1320	1260	1270	1100	1190
Graphics WinMark 96	16.4	14.7	14.2	19.8	25.8
CPUmark16	253	288	280	273	284
CPUmark32	286	295	296	273	289

The results from Wintune 95 are as follows:

	<b>NT 3.51</b>	<b>NT 4.0</b>	<b>NT 4.0</b>	<b>Win 95</b>	<b>Win 95</b>
	<b><u>(T Pro)</u></b>	<b><u>(T Pro)</u></b>	<b><u>(D 128)</u></b>	<b><u>(T Pro)</u></b>	<b><u>(D 128)</u></b>
Dhrystone (MIPS)	<b>245</b>	<b>246</b>	<b>246</b>	<b>244</b>	<b>244</b>
Whetstone (MFLOPS)	<b>77</b>	<b>77</b>	<b>76</b>	<b>74</b>	<b>73</b>
Video speed (MP/s)	<b>23</b>	<b>21</b>	<b>14</b>	<b>13</b>	<b>13</b>
C:\Cached speed (MB/s)	<b>27</b>	<b>37</b>	<b>36</b>	<b>23</b>	<b>22</b>
C:\Uncached speed (MB/s)	<b>.68</b>	<b>.72</b>	<b>.7</b>	<b>.79</b>	<b>.82</b>
RAM read avg (MB/s)	<b>226</b>	<b>245</b>	<b>244</b>	<b>250</b>	<b>232</b>
RAM write avg (MB/s)	<b>82</b>	<b>83</b>	<b>82</b>	<b>83</b>	<b>83</b>
RAM copy avg (MB/s)	<b>56</b>	<b>61</b>	<b>61</b>	<b>60</b>	<b>58</b>

I am not convinced that any of the differences indicated in the test results reported in the two charts are noticeable in real life. I do notice a difference in video speed between Windows 95 and NT (even in NT 4.0). In some instances, video redraw seems a bit slow to me in NT 4.0, with both the Terminator Pro and the Dynamite 128. I also see instances on my system where NT 4.0 is faster than Windows 95. Overall the performance of my SCSI hard drives seems a bit faster in NT as compared to Windows 95. I also believe the performance of NT 4.0 is enhanced by having 64MB of memory. NT can take far better advantage of more memory than can Windows 95.

DUN (Dial Up Networking) was modified a bit in the release version as compared to what was in beta 2. The choices when one right clicks on the DUN monitor changed some although I did figure out how to find all the same information as before. Now I get a choice of which phone book entry I want to dial, which is more akin to the way RAS

(Remote Access Services) itself worked in prior versions of NT. However to access the various statistics and so forth, I have to select open up dial up networking monitor. NT 4.0 release version supports both the NT scripting (i.e. via switch.inf) or the scripting from Windows 95. A few example scripts utilizing the Windows 95 scripting language are included in NT 4.0 release. If an upgrade is performed, any prior modem.inf and switch.inf is left in place. The newer versions are installed as modem.new and switch.new. Since I already had working NT style scripts on both systems using NT, I chose to continue using these for now. I have never written any Windows 95 scripts so have none to easily verify that they work in NT, but based on the experiences of others, this should not create any problems.

The release version of NT 4.0 RAS also supports AutoDial. RAS AutoDial maps and maintains network addresses to RAS phonebook entries, allowing them to be automatically dialed when referenced - whether from an application or from the command line. A network address can be an Internet host name, an IP address, or a NetBIOS server name. If DUN is installed on a Windows NT Server computer that does not have one or more ports configured for dialing out, Remote Access AutoDial Manager is installed in a disabled state. If you later change one or more of the ports to the Dial Out option, Remote Access AutoDial Manager must be manually enabled. Since I only have one communications port on my system and it is configured as Dial Out only (which is proper for my specific setup), I was not able to test Remote Access AutoDial on my system.

In the course of my testing, and use of the release version of NT 4.0 Server, I specifically tested for problems I had in the beta versions. Some have been fixed and others have not. One that has not been

fixed and which frankly surprised me quite a bit is NT 4.0's inability to read a mixed compact disk. A CD that has both audio CD and regular CD data on it cannot be properly read by NT 4.0. The same CD can be properly read in both NT 3.51 and Windows 95 on my system. I also am still having some problems with using sound schemes in the release version of NT 4.0, although the problems are much improved over what I saw with beta 2. In beta 2, I was unable to even read/utilize sounds from the Plus! Pack for Windows 95 (which I had been able to read properly in beta 1). I can once again can "read" such sounds and utilize them in the release version. However, each time I restart NT 4.0, I lose my named sound scheme choice (a sound scheme created and named by me). Most of the specific sounds continue to work properly but not all. I can go into Control Panel, Sounds and re-select my saved sound scheme, but first must also deal with a message box which asks me if I want to save the existing sound scheme, which shows as having no name and which was never activated by me. I recognize this is a minor nit, but an annoying one nevertheless.

The problem with creating new folders in Norton File Manager has disappeared with the release version of NT 4.0. In beta 2, creating a new folder in Norton File Manager also created a phantom desktop icon, which did not go away until a restart was done. However, the installation of NT 4.0 release version itself, which I performed as an upgrade over beta 2 of NT 4.0, created two phantom folders in My Computer which I have not been able to delete, although I have tried valiantly to do so. This did not happen on my husband's upgrade to release version of NT 4.0 Workstation, and I have yet to figure out what went wrong on my upgrade. This is a rather benign problem, so I have left it as is for now.

**The speed at which drop down selections open up when needing to select from a partition other than the current one has been significantly improved in the release version of NT 4.0. The speed is now quite comparable to what I see in Windows 95 on my system. The release version also restored the message boxes when first going into NT 4.0 which detail Restoring Network Connections. This series of messages disappeared in beta 2 and I was never quite sure if that was a bug or feature. It now seems to me that it was a bug in beta 2.**

**I did run into a new problem with the release version of NT 4.0 on my system that I have not been able to solve so far. I noticed right after installing the release version that I was getting a lot of CRC errors when using RAS. After some testing, I discovered these errors went away if I did not have Windows NT Task Manager running at the same time I was using RAS. This problem makes no sense to me and did not disappear when I changed video cards. For now I have stopped keeping NT Task Manager open at all times, but miss the information doing so supplied to me. I tested this same situation on my husband's system and do not have the same problem with the release version of NT 4.0. So it seems to me that this problem with the release version of NT 4.0 is related to the mix of hardware and software on my particular system.**

**I also still have the same problem with Procomm Plus for Windows 2.11 that I ran into on my system in beta 2. If I use it with other programs open and minimized (series of various types of programs), the port is not released by NT when I exit Procomm Plus and does not get released until I restart NT. However if I use Procomm Plus with no other programs running, the port is properly released by NT when I exit Procomm Plus. For now I have taken to closing all other**



applications when I need to use Procomm Plus, which is becoming less and less as my use of the Internet increases.

I tried to install a new version (version 6.11) of Arcada Backup Exec Single Server in NT Server 4.0 release version. I was not able to do so because the setup locked up (as NT Task Manager had stopped responding) during an early stage of the install when it checks for Services. I tried in VGA mode and was unsuccessful there too. I have not had the chance to do any more investigating of this problem at this point in time. In any case the version I was attempting to install is still not a fully compliant NT 4.0 version. I was hoping it might improve on some of the problems I am having with Backup Exec Single Server version 6.10 in NT 4.0.

Despite the problems noted above, I believe that anyone currently using either NT 3.51 Server or Workstation should upgrade to NT 4.0. The enhancements and additional features are well worth the price of admission. In addition, I think anyone using Windows 95 who has the hardware capable of running NT 4.0 Workstation, should give serious consideration to moving to NT. With the inclusion of the Windows 95 interface and several other Windows 95 features, the only drawback to such a move is the time to reinstall all programs and the loss of backwards compatibility. Gamers who would like to use NT 4.0 Workstation should consider a dual boot setup whereby they either maintain a Windows 95 installation or at least a DOS 6.2x installation to run their games.

*Linda Rosenbaum lives and works in a suburb of New York City. She is an assistant controller at the World Headquarters for a large global manufacturing company. She has two young children and a husband whose full time job is to take care of the kids. When not working, Linda can be found on a variety of online services and the Internet reading and writing about her experiences with NT, networking, and multimedia. She maintains a home network of four systems using a combination of NT and Windows 95. Linda is the NT Editor for [WindoWatch](#) and can be reached via Email at either [lindar@cyburban.com](mailto:lindar@cyburban.com) or [71154.2622@compuserve.com](mailto:71154.2622@compuserve.com).*

## **An Upgrade Warning**

**Copyright 1996 by Linda L. Rosenbaum**

As my review of the release version of NT 4.0 indicates, other than a few quirks, I had the release version working quite well on two different Pentium based systems. We upgraded both Pentium systems, which had two different Pentium motherboards and CPU's, to the same Pentium Pro motherboard (Super Micro P6DNE). We got both dual motherboards with just one Pentium Pro 200 CPU and what should have been a relatively easy hardware upgrade, turned into a nightmare even though we now have both systems functioning. While my understanding of what happened to us when we upgraded is still quite sketchy and lacking in terms of technical understanding, I think its well worth relaying our experiences so that others who contemplate such an upgrade can be ready if they run into similar problems.

Having moved all the hardware over to the new motherboard (all other equipment was kept the same for each system), we started up the computer. We needed to make a few minor adjustments to the CMOS/BIOS regarding ISA IRQ's and DMA's used, and the use of parity RAM with ECC. After doing these, we let the system start up and boot into NT 4.0. Imagine my surprise when it locked up, solid, at what appeared to be the first sound uttered. I have a sound scheme on my computer, as does my husband. The first sound is heard as the system is getting ready to restore network connections.

We were doing this initial upgrade on a Friday night and knew we did not have ready access to our dealer. But, we were confident that we would be able to get this setup working. I learned that going into NT 3.51 worked just fine (I still have NT 3.51 WS on my system). I also tried Windows 95 and ran into some problems which I thought were related to the NT 4.0 lockups, but in hindsight now am not so sure. I also discovered that I had no lockups if I went into NT 4.0 in standard VGA. Between Friday night and Saturday morning, we tried virtually all of the tricks I could think of, including different video cards, different PCI slots for the video card, different settings in the CMOS-BIOS with respect to IRQ and DMA settings, and a different IRQ for my SB 16 sound card in NT 4.0. None of these options cured the lockups. We also learned that removing the sound card did cure the lockups. I created a *no sounds* sound scheme and was able to get into NT 4.0 without locking up and with the sound card installed. I then tried all sorts of DMA combinations for the sound card, again with no success. As soon as a digitized sound was played, i.e wave file, the system locked up tight even though I could play a midi file just fine!

Fortunately, my dealer was able to return my frantic calls for help that Saturday afternoon. He suggested we try a video card driver from beta 2 of NT 4.0. Unlike many users, we did have beta 2 and hence this experiment was relatively easy to do. And it did indeed cure the lockups! With this *fix* we were able to get both Pentium Pro motherboards installed and working on both NT 4.0 systems.

I was not pleased with this fix as a long term solution, mostly due to my concern of using beta 2 video card drivers in a release version of NT 4.0. However, I do want to emphasize that we have had no problems using the beta 2 video drivers, seeing speed improvements

over our Pentium based systems. These increases vary from program to program, but are present in many subtle and not so subtle ways. I contacted both manufacturers of the video cards we do own, but both were rather mystified by our problem. They were also unsure of the real cause and hence where a fix should come from. As I did more research, I too became more and more confused as to what was the real cause of our lockups or whom I should look to for a cure.

I did learn that we were not alone in these lockups. It seems to be related to using a Sound Blaster sound card, release version NT 4.0 video drivers, a variety of different video cards, and a variety of different Pentium Pro motherboards. On the other hand, my dealer (and several others) have the Matrox Millenium video card working just fine with Matrox's NT 4.0 video drivers (or the NT 4.0 release video driver for this video card) in a Super Micro Pentium Pro motherboard (P6DNF) with the most recent BIOS for that motherboard (.9 AMI BIOS). Our new motherboards use the same BIOS and we too have the most recent one (motherboards came with it). My dealer was also having lockups until he got the most recent BIOS from Super Micro. I also became aware that even with what sounded like some of the same hardware as ours, not everyone got the lockups. And to make this even more confusing, I know of at least one person with a Matrox Millenium video card who still got lockups with sound.

One of the individuals I conversed with on this situation on Compu-Serve (Win NT Workstation forum) was finally able to cure his lock-ups and at the same time passed along information he received on the cures and why the lockups were occurring. One of these messages turned out to be the most detailed explanation of what was happening that I had seen so far. It is technical of course, and seems related to

**the BIOS mis-configuring the chipset settings. It seems that the permanent solution to this problem is to receive a new system BIOS for the affected motherboards that contains the correct, non-conflicting chipset settings. In the meantime, the following workarounds were suggested to prevent the lockups from occurring:**

- 1) In BIOS setup, if available, disable USWC Write Posting during I/O bridge access feature. This will have a negligible effect on performance.**
- 2) In BIOS setup, if available, enable the Passive release feature of the PIIX3. This will enable the correct chipset configuration.**
- 3) Disable the USWC feature for the video driver via the NT system registry. This will have a significant effect on graphics performance. This is accomplished using regedt32.exe (NT registry editor) and adding a key named “DisableUSWC” under HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\GraphicsDrivers.**

**On our Pentium Pro motherboards we have a BIOS setting that sort of sounds like what is described in number 1 above. However it is already disabled on both of our new motherboards. I could not find any BIOS setting that sounds like number 2 above. We decided to try the registry fix, mostly out of curiosity. We tried on my husband’s system, which is using an STB Velocity 64V. As expected, based on the above, this did indeed cure the lockups we were having with the release version of the video drivers for this video card (which we had obtained from STB). In real world usage, my husband sees no difference in graphics performance between using the beta 2 video**

**drivers and the release drivers with the registry setting which disables USWC (my motherboard BIOS manual describes this as a memory cycle that stands for Uncacheable Speculative Writing Combining). However, it has occurred to me that since it seems this was not enabled in NT until the release video drivers, we may be comparing what is slower performance to slower performance rather than being able to truly tap a graphics performance improvement. I have not tried to benchmark my husband's system and in the interim he has continued to operate with the registry fix, using the release version video drivers.**

**We have not yet tried this same fix on my system because in the meantime I had placed an order with my dealer for a Matrox Millenium video card. I have been assured that I will not need the registry entry which disables USWC. Unfortunately the video card (at least the 4 meg version which I ordered) is on back order. In the meantime I have continued to use the beta 2 video drivers for the Hercules Terminator Professional video card.**

**Hopefully our experiences when upgrading to a Pentium Pro motherboard will help others who are contemplating either an upgrade to a Pentium Pro motherboard from a working Pentium with NT 4.0, or who are contemplating an upgrade from NT 3.51, which is working just fine with a Pentium Pro motherboard. I am hopeful that a newer BIOS for our Pentium Pro motherboards will make this situation even better than it is now.**

*Linda tracked down this confusing problem just a day or two before we released this issue because we felt that it was important to inform our readers of possible difficulties during installation.*

## WIN NT Connectivity Issues

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Right out of the box, Windows NT comes with a made-for-networking environment similar to that found in the various UNIX implementations. It's not all there, but a workable LAN (Local Area Network) or WAN (Wide Area Network) is possible. This includes the ability to connect to other computers' shared resources and to share resources with other computers either on hardwired or dialup networks.

NT comes with several of the more popular networking protocols and client interfaces to connect with others over a Microsoft network, a Netware network or a TCP/IP network. Actually they can all be running at once over the same wire. Even Appletalk is supported in NT Workstation for printing.

### TCP/IP

TCP/IP (Transmission Control Protocol/Internet Protocol) is the networking protocol of UNIX and The Internet. Because of the latter its use is now expanding into corporate networks, previously the domain of Netware, Microsoft Network and LAN Manager, LAN Server, Lantastic, etc. Included with TCP/IP are the utilities FTP, Telnet, Ping, the mainstay of networkers everywhere. With NT workstation you can also BE an FTP server. In a TCP/IP network,

each machine is assigned a name (hostname) & number (IP address) and large networks usually have one or more Name Servers, which keep track of and disseminate host information to the group at large.

### Connecting to Net Resources

NT machines share their resources over the net and connect to others' shared resources. Resources are commonly disk drives and printers. You can share directories on drives or whole drives and by drives I mean hard drives floppies, CD-ROMS, and Zip and Syquest drives. Printers can be directly connected to the NT machine or connected to over the network and then shared to other PCs.

Sharing your drives and directories is done through the File Manager by selecting the drive or drive/directory combination to share, and specifying certain names and security parameters for the share. Descriptions are helpful when others are browsing available shares (see screen below). As you can see I'm sharing a directory (My Documents) on the C: drive and I'm calling it mydocs. This name, the description and the computer name is what people will see when browsing for shares on the network.

As you can also see, I've given everyone Read Access only to the files shown on the following captures.



C:\My Documents\*. * - [MICRON4]					
elink.old	assets.htm	4,674	5/8/96	12	
etc	bason.doc	11,776	6/28/96	10	
EXCEEDW	bason2.doc	11,264	6/28/96	12	
FCWIN	changes.htm	4,324	5/8/96	12	
FileMaker Pro 3.0	changes2.htm	4,335	5/8/96	12	
FMPRO	cheyenne.doc	11,776	8/8/96	10	
healthbooks	CHIROSX.xls	13,568	9/11/96	6	
Healthsource	cohesion.doc	10,240	5/10/96	5	
KEPLERW	CompEquipment.doc	12,288	7/2/96	4	
lib	compustar.doc	11,264	7/29/96	2	
MOUSE	computers.mdb	83,968	3/26/96	10	
MSOffice	HMODIRPCP.prn	518,224	5/22/96	3	
My Documents	insurance memo.doc	11,264	5/9/96	3	
net	INTERGRAPH.TXT	1,156	8/9/96	3	

**New Share**

**Share Name:** mydocs **OK**

**Path:** C:\My Documents **Cancel**

**Comment:** Jim's Documents **Permissions...**

**Help**

**User Limit:**

☐ Maximum Allowed

☒ Allow 5 Users

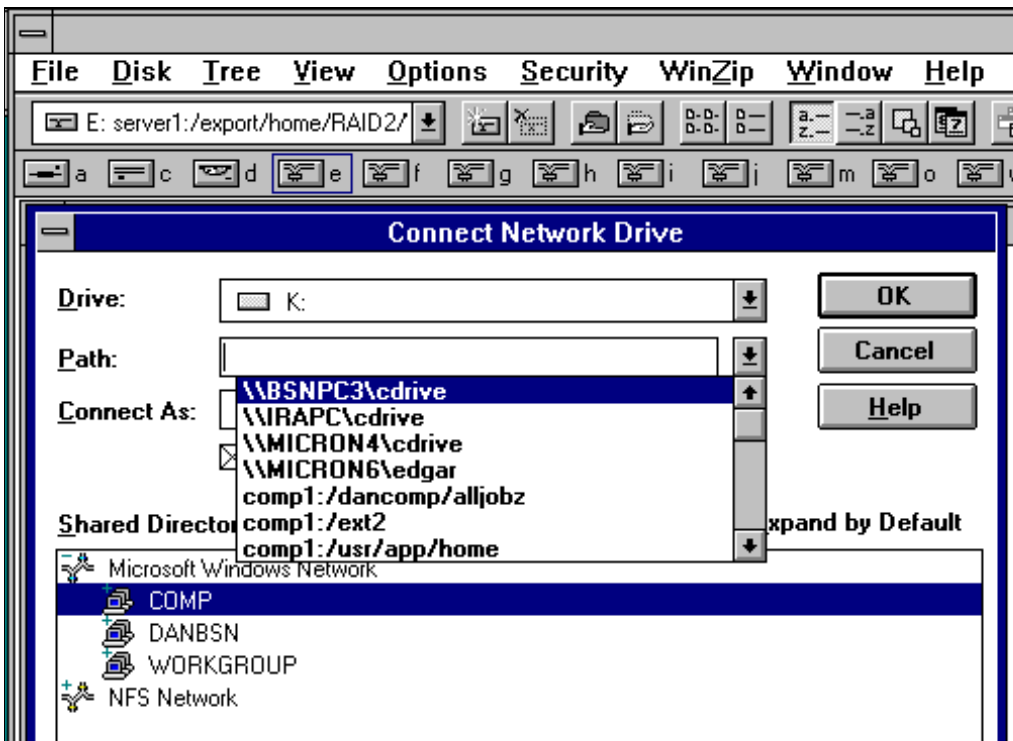
**Access Through Share Permissions**

**Access Through Share:** mydocs

**Owner:**

**Name:**

Everyone	Read
----------	------



Use the File Manager to connect to others' shared drives. Selected shares are given a drive letter and exist as virtual disk drives (see screen above). You can see me browsing the workgroups in the Microsoft Windows Network.

These are other PCs and could be running NT, Win95 or Windows for Workgroups. Opening up a group will display computers in the group and under them, the disks and directories they are sharing. I am

mounting the C: drive of computer BSNPC3 (\\BSNPC3\cdrive) to be accessed as my K: drive.

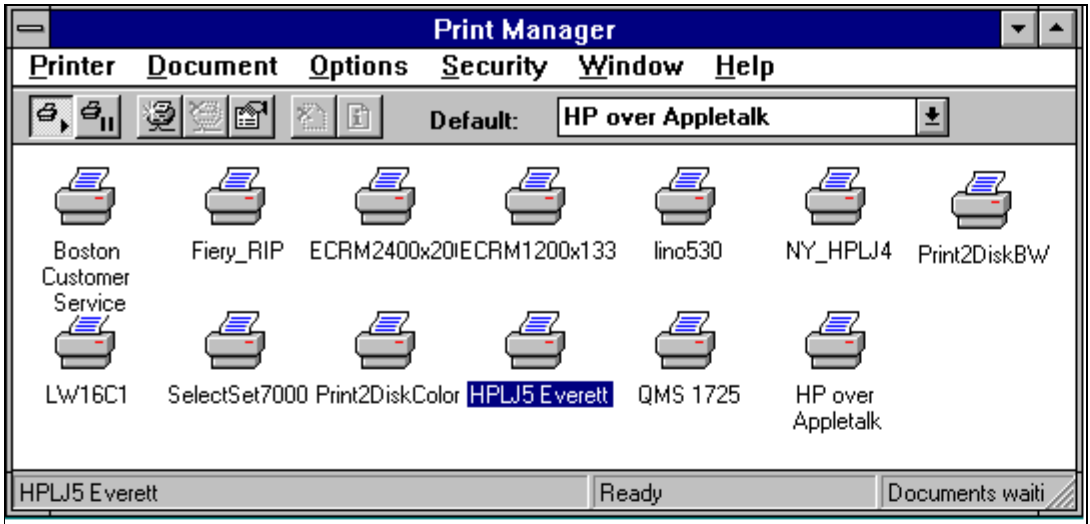
What I would prefer is the ability to *name* a network mounted resource rather than give it a letter. It is one of the holdovers from the old days which I hope gets changed. This is how the big boys do it in UNIX and that's how the Mac folks have done it. Besides, it makes sense and is more useful.

Also take note of NFS Network. Under here are a list of available NFS (Network File System) Servers, usually UNIX machines, but could be NT machines being NFS Servers also. The drop down list above it shows several mount points to server comp1 and the directories I've mounted from that server. NFS is NOT, unfortunately, bundled with NT.

The methods described here are used in NT 3.51. In NT 4.0, you also have the Explorer to map network drives.

### **Network Printing**

Several choices exist when printing in the NT environment. A printer physically connected to your NT machine can be shared with others in the network. You can also connect to others' similarly shared computers. You can connect to standalone network printers and then share them with others on your network.



**You can see in the Print Manager screen a bunch of printer names.**

**These printers are being connected to over a network in several different ways. What's great is that these can all be pre-set and then never have to worry about running out of LPT ports. Several of these printers support TCP/IP and are assigned IP numbers and can be directly printed to as long as I know their IP addresses. Some of the printers are connect to via Appletalk.**

**Connecting to them is similar to using the Apple Chooser. What is better than using the Chooser is that since the printers are pre-defined they are all accessible at any given time, as long as they are live on the network. This represents an advantage over printing from a Mac. When using a Mac, in order to change printers, you need to go to the Chooser and select a printer, rather than choosing from a list**

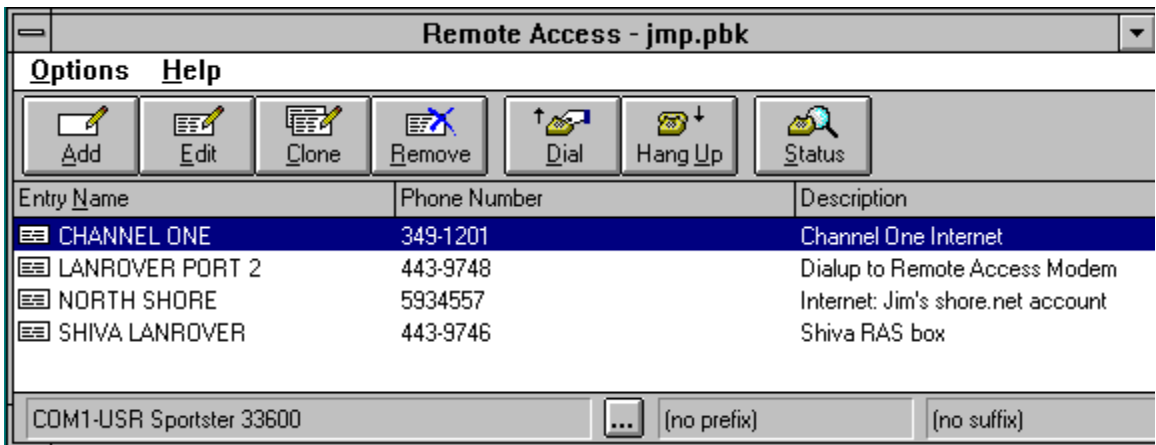
of printers from the print dialog window as you can with NT. For you UNIX people, new with NT 4.0 is the ability to go to the print devices on a Solaris 2.x UNIX box. Previously NT supported only the BSD print devices

### **Remote Access**

Remote Access is the name of the dial-up networking service (RAS). Besides dialing out you can also be a Remote Access Server and allow up to ten dialup sessions at once. NT Server allows 256 dialup connections. What this means is that with RAS you can dial in from home or on the road to your computer at work and connect to your network. Once connected, use file manager or explorer to mount the network as a drive. Here is telecommuting.

Originally, RAS was created with Windows for Workgroups and Windows NT users in mind. However, in the age of the Net, this is the perfect tool for Internet dialup. In Internet mode, RAS can be configured for different sites and different user ids. RAS supports serial connections over ISDN as well regular phone lines.

Once you are connected to the Internet via RAS you can use the Internet tools of your choice.



The Remote Access dial out screen shows several configurations, two for connecting to the Internet and two for remote access to the network at work.

### Summary and the Future

Windows NT is positioned as a leader in the corporate desktop world and as the developers OS of choice. It can connect you to the rest of the world right out of the box. However, NT's big short coming, (also a gripe of mine) is its interconnectivity with the UNIX world or lack thereof. Win NT does not natively support NFS, the UNIX method of sharing/mounting network drives. Next issue I'll look at two ways this is handled. I will also be looking at network configuration issues for the shared protocol environment, perhaps of interest to other system managers.

*Jim Plumb is a System Administrator for a commercial printing establishment. He has been a Contributor to [WindoWatch](#) from its beginnings and its first WebMaster.*

## **Being There: Personal Web Servers at Home and Work**

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If you've been in computer superstores recently, you will would have noticed on the ever growing shelves of Internet software something a little odd. There are an assortment of web servers being sold there. Are these stores crazy or what? Everyone knows you need to spend a fortune on phone lines and learn all kinds of arcane languages such as Perl and CGI, right? Well, maybe! Although such software is targeted toward the business user who needs to publish a small web site on a private intranet network, both small business and home users can take advantage of personal web servers if they want to have a good looking Internet presence. The most useful function of these web servers is to build and test a web site, especially one that contains forms or server scripts to do more than plain HTML can. It is simply more convenient and much faster to test a site on a nearby computer with its correspondingly higher speed than through a dialup 33.6 cps modem to an Internet Service Provider.

If your web page contains nothing more than HTML with simple links from one page to another, there is no need to use a personal web server other than convenience. If you are building server scripts or publishing information, you'll want to test before you publish. Sites that break are sites that people don't revisit. For the purposes of this article, a personal web server is software that will run on Windows 95 without major loss of features and allow you to serve a web browser on the same machine or through a direct TCP/IP connection to it

across a small LAN. Most of the web servers surveyed will not allow a dialup connection to them.

### **What Do You Want and Need?**

Even if you plan nothing more than to announce to the world who you are and how you can be contacted, you need to have an idea of what you want to accomplish. For instance, just letting the world know you are a Star Trek Fan might be of vital importance to you. Without a some idea or focus, it's hard to know what servers can meet your needs. Microsoft's Front Page Personal Web Server, for example, is very easy to set up and get running, but it is can handle few simultaneous users and is harder to configure and expand once you outgrow the basic tools. On the other hand, O'Reilly's WebSite Pro is as fully or more fully featured and expandable than most commercial UNIX web server software. It costs more, takes more effort to manage, and can support a large number of users.

A personal web site is usually a one way means of communication between you and web surfers visiting your site. This means that feedback via e-mail is more than adequate. For these kinds of web sites, there are few demands on the server other than being reliable and fast enough. Any of the servers surveyed will do a fine job. If you have a preferred HTML editor, you can use any server you want, including using an ISP hosted site. However, there are advantages to using authoring software that cooperates with the server. A server and an authoring tool working together can find more types of problems in your pages, such as broken links, or can better assist you in constructing and managing the site.



**Intranet sites can be one way only, but usually they have some requirement for interaction. Technical support or information servers generally require a more structured environment than plain e-mail provides. Microsoft's Front Page has server extensions that directly create and manage these types of sites on several different server platforms besides Front Page's own Personal Web Server. Mustang Software's Internet Connection add-on is based on their Wildcat 5 BBS server, so it intrinsically has support for file download areas and conferencing, but the server is capable only of serving up files via HTTP, FTP, or TELNET. If you want more capability, you have to buy more add-ons. In its favor, MSI's Internet Connection product, because it is based on Wildcat 5, is the only server that allows easy dialup connections without additional software. The Commerce Builder Server by Internet Factory in most respects is a plain, but high performance, web server with direct newsgroup support for conferencing.**

**If you intend to conduct business over the Internet and you both want an out-of-the-box solution and to host your own site, you need to look at servers which have secure connections. Of the servers I tried, only WebSite Pro and Luckman Interactive's Web Commander come with Secure HTTP and Secure Sockets support. No one should conduct credit card transactions on the Internet without a secure connection or should you expect anyone to do so without your using a secure server.**

### **Tools for Building and Managing the Site**

**How much help you need in building and managing your site depends on how complex it is going to be. Building a few pages of HTML and**

included graphics can be done with Notepad. Although possible to do anything in HTML with nothing other than Notepad, sophisticated pages are much easier to prepare with an authoring tool. Similarly, a site with a few pages doesn't need anything special to manage it. Unfortunately, there are few enough pages that you can remember what's on them!

A site with about eighty pages, a download area, and a discussion area, like the one I manage at work, needs some helpful software to keep it all under control. A good management tool is doubly important if you keep in mind that a site that never stays the same, that changes frequently and has interesting content, is one that gets revisited.

Of the five web servers in the survey, four of them come with some form of authoring software. You don't need to use their software, but if you are just getting started with HTML, it doesn't hurt to use the tools that come with the servers. Mustang's Wildcat 5 server has the least specialized editor, Hot Metal, and no special capabilities in the server to take advantage of it. WebSite Pro provides tools with only loose coupling between the tools and the server. There is a site manager to help you keep track of your pages, but you must use it on the machine that is hosting the site or be directly connected to it across a LAN and be able to see the file system. Web Commander's degree of coupling is about the same, but it includes more tools to help author content automatically and get your site started more quickly. Microsoft's FrontPage has the tightest integration between the server and the authoring tool. It allows you to manage nearly all important aspects of your site remotely, and even with servers other than the Personal Web Server included in the box. However, its hardcopy

**documentation is the most minimal. You are expected to read the online help, buy third party books, or go to various web sites to get documentation.**

### **Making the Connection**

**Every one of the Web servers except Wildcat 5 require a TCP/IP connection to serve up Web pages. Wildcat can serve up pages without TCP/IP, but you will seldom ever run it that way. If all you are using your server for is building and testing a site before up-loading it to an ISP or a more official corporate site, you need only to have TCP/IP installed on Windows 95. No special configuration of TCP/IP need be made to get these servers working. Uploading your files to the server is your only problem, and your ISP or central site will tell you how to get the files onto their server. Similarly, if you are on a LAN that uses TCP/IP as one of its protocols, someone will tell you how to set up your TCP/IP to work properly and allow people to connect to your server.**

**If you are building your own site and want to host it on the Internet with your own server, you are talking about yet another set of complications. There are several things you need to do, even assuming that the cost is within reason. You have to find an ISP to connect to with some type of high speed line. A 33.6 connection, even if it could be maintained continuously is nowhere near fast enough for more than one user at a time of your site. You need to arrange a permanent connection using at least ISDN speeds, and preferably a fractional T1. You also need to apply for and receive a domain name and IP address range from InterNIC, the body that is responsible for these things. A friendly ISP can advise or take care of such things for you.**

## **Look and Feel**

If this web site is a personal site or an intranet site, look and feel isn't so important as with an Internet site. The latter is visible to many people and there is a matter of corporate image to maintain. The former can be designed and laid out by talented or interested individuals. An external site needs much more attention if it is going to serve the purpose for which it is intended. It would not be inappropriate to hire an art consultant for such a job if you are lacking in personal or in-house expertise. A web site is nothing if people don't come back to it. Given the choice, people will come back to a good looking site that is interesting instead of a mediocre looking site with the same content.

## **Customization**

Once you have settled on look and feel, the next most important thing about your site is going to be what you can give your web surfers who visit and what you can get from them in return. Although several of the servers come with some form of conferencing software, for a corporate presence on the Internet, you'll want to make your web pages deliver and capture things that interest you. Also, if your site provides some unique service that is handled by software outside the server, you will have to be able to extend the server to talk to your software.

All of the five servers surveyed allow you to extend them. Four of them can use traditional Common Gateway Interface (CGI) programs to extend their capabilities. Documentation varies from nonexistent for the FrontPage server to a three hundred page bound volume for

**WebSite Pro.** Only the Wildcat 5 server requires you to purchase optional software to extend its capabilities. Commerce Builder and WebSite Pro come with not only extensive interface capabilities but also programming languages and tools to write CGIs and server extensions. FrontPage and Web Commander allow programming CGI scripts only, but provide no tools or programming languages to let you do so. In addition to scripting, WebSite Pro allows you to add modules directly to the server for higher performance.

### **Just In Case**

If you haven't upgraded to Windows 95 yet, you may still be able to find a copy of Quarterdeck's WebServer. Quarterdeck has discontinued marketing the product. The software runs on Windows 3.1 or higher (I have used it successfully under Windows 95) and requires less system resources to run well than the newer servers. On the other hand, it doesn't support Long File Names and doesn't come with very many tools to help you serve up your site. Still, for those who are on a budget or have smaller needs, it will do a fine job. WebServer provides CGI support so that you can write all kinds of custom capability into the server, but you'll have to do it yourself.

### **Mentioned in Passing**

I had requested two other web servers capable of running on Windows 95 for this article, but I am not able to comment on them. Clark Technologies, the vendors of the PCBoard BBS system, sent press information for their MetaWorlds server, but no server. TGV Software sent an evaluation copy of their Cheetah multi-platform web server, but the evaluation key to unlock the software had expired.

**Because the Clark Technologies server is based on PCBoard, it should resemble the Wildcat 5 Web server in many respects. The TGV server should resemble the Commerce Builder server from Internet Factory.**

### **Summary**

**Unless you are willing to spend the money to get your own domain name and to have a permanent high speed connection to the Internet (ISDN is just barely enough), you'll never want to use any of the servers mentioned in this article to host a web site on the Internet itself. It is far more cost effective to pay for some space on a local Internet Service Provider and have them manage the server for you. When traffic grows and the costs of an ISP start getting too high, then you can think about connecting directly. At that point, the higher function and more efficient servers can make the transition relatively painless. All of the servers mentioned will do a terrific job of hosting a site on a corporate intranet of moderate to high traffic on reasonable-sized machines. The less expensive servers will do an excellent job of page and script testing for personal pages without costing too much.**

**Once high speed direct connections from the home to the Internet becomes cheap and commonplace, hosting your work site without a machine of your own will become more practical. For now, you're best of letting someone else do it.**

### **Vendor Information**

**Clark Development Company MetaWorlds Server  
<http://www.metaworlds.com>**

**Internet Factory Commerce Builder Web Server**  
**<http://www.ifact.com>**

**Luckman Interactive Web Commander**  
**<http://www.luckman.com>**

**Microsoft FrontPage**  
**<http://www.microsoft.com>**

**Mustang Software International Wildcat 5**  
**<http://www.mustang.com>**

**O'Reilly Software WebSite Professional**  
**<http://website.ora.com>**

**Quarterdeck Corporation WebServer**  
**<http://www.qdeck.com>**

**TGV Software Cheetah**  
**<http://www.tgv.com>**

*Our talented Contributing Editor, Herb Chong finds time from creating computer art to surveying Windows95 server software. Herb is a research man, programmer, computer artist, and writer.*

## **Part 3: The Basics of WordBasic**

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### **Introduction**

It is something of an irony that one of WinWord's most powerful features is called WordBasic. While WordBasic owes its name and heritage to past generations of the *basic* programming language, WordBasic is powerful enough to satisfy all but the most hardened C++ programmer. At the same time, the actual language is close enough to actual English not to frighten away the uninitiated. Actually, the syntax of the language mirrors the menu structure of WinWord itself. For example, to Format a Font through the menu, you select **F**ORMAT, then **F**ONT; to do so with WordBasic, you use the command **FormatFont**. In other words, if you know the menu structure of Word, you already know much of WordBasic.

Surprisingly, many veteran WinWord users have never dipped a toe in the WordBasic pool.

This article certainly isn't intended to teach you everything there is to know about WordBasic, and it won't teach you everything you need to know to use WordBasic effectively. You may wonder if you even need WordBasic to use Word? Tough question. Or at least a relative question. The answer all depends on how *well* you want to use Word. You may have been using Word for years without ever touching the macro functionality. You should know, however, that there are



certain things you can do *only* if you use WordBasic, such as custom dialog boxes. But dialog boxes are a subject for another article. For *The Basics of WordBasic*, I've decided to take—appropriately—a much simpler approach. Actually, I'm going to rip a page from the *Word Developer's Kit* and tackle the Bold-Italic macro.

### The Bold-Italic Macro

The Bold-Italic macro is a simple formatting concept which helps demonstrates several interesting points about WordBasic. First of all, everyone can identify with the application of the macro. I have many occasions where I want to use the combined formatting of bold and italic, usually in headings. *WindoWatch's* own sub-heading style is basically underlined for emphasis since the entire PDF document is already bold. Underline is more visible on screen, whereas italics is preferred for printed output, especially in this day of proportional typefaces.

It is fairly simple to apply first bold, then italics to a heading or any other text by clicking on the bold, then italics button on the formatting toolbar. Two steps. You could define a style for a heading that applies both font formats (see *WindoWatch* Volume 2, Number 6 for *Always in Styles*, my article on WinWord's Styles), just as I've applied underlining and bold to the Heading 3 style above. Sometimes, though, you may want to apply bold and italic to a selection or just a word of text on the fly. At that point, it might be quicker to use the Bold-Italic macro, which gets assigned to a button (described later in this article) right next to those for Bold and Italic. Your productivity will increase in proportion to the amount of times you would have had to click twice and now need only click once.

So the bold-italic concept is simple to understand and even provides a modest productivity boost. The progression I'll take in this article is to first record the macro, then simplify the structure and, finally, turn the macro into an on-off formatting toggle feature similar to the other formatting buttons. I'll wrap up the article by showing you how to add the new format feature as a button to your formatting toolbar.

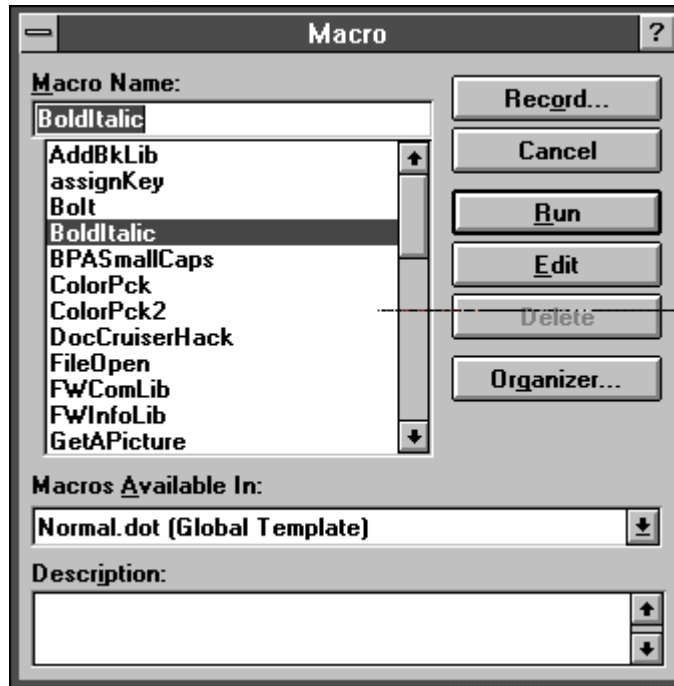
### Recording...

Many first time macro creators are advised to use the *record* feature to record a series of keystrokes or menu selections. Usually this works. It's grossly inefficient, but it works. And once again, there are certain WordBasic features you can't record, like the creation of those custom dialog boxes I mentioned in the first section. Recording the macro will, however, usually give you some useful information about what type of WordBasic commands you need in a particular type of macro; it also gives you the syntax of those commands.

There is, however, a better way to learn the syntax and parameters of a command: WordBasic help. Before you get started experimenting with WordBasic, make sure you have the file WRDBASIC.HLP in your WinWord folder (i.e., directory); the file is about 1.8MB. If the file isn't on your hard drive and you have the MS Office professional CD-ROM, you'll find it in the WinWord folder. With a floppy disk install, the file may be compressed. If you did a Custom/Complete install of WinWord, you should have the file on your hard drive.

With WordBasic help available, you can place the cursor on any valid WordBasic command in your macro window and tap the F1 key to get a listing of syntax, parameters and examples for that command. You'll also see related commands in hyperlinked format which usually gets you to the command you need for a given task.


Now that you have WordBasic help at your disposal, let's shift our attention back to recording the macro. From the **T**OOLS menu, select **M**ACRO to bring up the macro dialog box.



Type in a name for the macro, such as **BoldItalic**. You want to make the name something meaningful, since this name will pop up as a tooltip when we link the macro to a toolbar button. Note: tooltips have enough intelligence—*intellisense*?—to put a space wherever there is an inline capital letter in the macro name, i.e., between the d and the I. Unfortunately, the same tooltip feature does not have enough *intellisense* to leave well enough alone. If you start your macro

name with a *keyword*, e.g., Insert or Format, that word is dropped from the tooltip, leaving whatever text follows.

This **BoldItalic** macro is probably one that you would want available all the time, not just in a particular template, so you can select Normal.dot (Global Template) from the *Macros Available In:* drop down list. You can also add an appropriate description for the macro in the *Description:* text box. With name, availability and description taken care of, it's time to click the **Record** button and go through the motions of recording the formatting for **Bold** and **Italic**. The Record Macro dialog box pops up with your information already in place. (Note: You could have just clicked the **Record** button, then entered the name, etc. here.)

Click on the **OK** button to begin recording. You'll see a new, two button toolbar pop up, sporting VCR-like controls. You use this toolbar  to stop recording (left button) or pause recording (right button) of the macro. You'll also notice that your cursor has the image of a cassette tape attached to the standard arrow: this is to remind you are recording practically everything you do. An important reminder, because any menu selections, etc. you make are being dutifully recorded for your macro, mistakes and all. Hunting and pecking blindly could give your macro a bad case of bloat. If you continue to use the recorder, it's good practice to make a dry run through the command selections you want to record, although you can clean up the mess later or, if you remember, pause during.

Now that you are ready to record, select the **F**ORMAT menu, then **F**ONT, then under **F**ont Style:, select the **Bold Italic** option. Click the **OK** button, then the left, **STOP** button on the recording toolbar. You're done. Let's look at the macro code you generated.

## The Good, the Bad and the Unnecessary

To take a look at the fruits of your labor, you need to go back to **TOOLS** **M**ACRO to bring up the Macro dialog box. Click on your **BoldItalic** macro and then click on the **E**dit button. This takes you into a macro window (you can get back to your current document window by selecting it from the **W**INDOW menu) where your recorded macro is now available for review and modification.

```
Sub MAIN
FormatFont .Points = "12", .Underline = 0, .Color = 0,
.Strikethrough = 0, .Superscript = 0, .Subscript = 0,
.Hidden = 0, .SmallCaps = 0, .AllCaps = 0, .Spacing = "0
pt", .Position = "0 pt", .Kerning = 0, .KerningMin = "",
.Tab = "0", .Font = "Times New Roman", .Bold = 1, .Italic =
1, .Outline = 0, .Shadow = 0
End Sub
```

The FormatFont line is actually one long line, not several as it appears here. For the sake of legibility, you would want to use the line continuation character to split this line up.

```
Sub MAIN
FormatFont .Points = "12", .Underline = 0, .Color = 0, \
.Strikethrough = 0, .Superscript = 0, .Subscript = 0, \
.Hidden = 0, .SmallCaps = 0, .AllCaps = 0, \
.Spacing = "0 pt", .Position = "0 pt", .Kerning = 0, \
.KerningMin = "", .Tab = "0", .Font = "Times New Roman", \
.Bold = 1, .Italic = 1, .Outline = 0, .Shadow = 0
End Sub
```

This bit of housecleaning—lining up the starting parameters and breaking the screen lines between parameters—makes the macro a little easier to read. But the macro itself is much more than you need

for this particular task, which demonstrates one of the shortcomings of recording macros.

Here the *intellisense* falls short of the mark. *You* knew you just wanted Bold and Italic formatting turned on by the macro. Unfortunately, the *recorder* wasn't sure which settings in the dialog box were relevant and which were not. Result? It records every current setting in the **F**ORMAT **F**ONT dialog box. Of the nineteen options, you need only two. This macro is much longer than it needs to be and therefore bloated and slower than it absolutely has to be.

If you were writing the macro from scratch—once you became a little more comfortable with WordBasic— you would simply use the following parameters in your version:

```
Sub MAIN
FormatFont .Bold = 1, .Italic = 1
End Sub
```

I'm sure you'll agree this macro is incredibly more manageable and less intimidating than the record effort. A couple points of clarification. Every WordBasic macro has Sub MAIN (usually, but not always the first instruction in the macro, it refers to the *main* routine of the macro) and End Sub (usually but not always the last instruction.) When you create a macro without recording, these two instructions are even entered for you, with the insertion point placed between them. (Unlike Visual Basic for Applications, this little bit of formatting is about all the help WordBasic gives you.) As I mentioned previously, the WordBasic command to accomplish this font formatting is simply what the menu selections would be, but without a space between the words: FormatFont. What follows the command are its parameters. Each parameters begins with a period and is

separated from other parameters by a comma. Note: the first parameter is not preceded by a comma. A “1” indicates that the parameter is *on* ; a “0” indicates the parameter is *off*. (Suppose you knew that the Format Font command was FormatFont, but you couldn’t recall the parameters. In the macro window, just type the command FormatFont and—with the cursor placed within the command—press the F1 key. This will bring up the aforementioned WordBasic help, with all the information related to the command. If you type an incorrect command, then ask for help, you will see the WordBasic help index with a button for each letter of the alphabet. If you guessed close to the actual command name, you might spot the command you want from the alpha list. Tip: Hopping around through the WordBasic help system, checking out related commands, etc., can give you a better understanding of the command language.)

So far, you’ve recorded the macro, learned how to make it more legible with line breaks using the line continuation character, then trimmed out all the superfluous commands. You can try out the macro now by selecting text, then running the macro. If you haven’t closed the macro window, the macro toolbar should be visible: simply click on the right-wedge *play* button. Whatever you selected will now be bold and italic. The bold and italic buttons will both appear depressed. Congratulations, you’ve created a functional macro!

### The Next Level

The macro works... or does it? Word’s bold and italic buttons work as a toggle, i.e., click once to turn the formatting on, click again to turn it off. The existing BoldItalic macro is just an *on* switch. Think of a light switch that could only turn your house lights on. Think of the showroom atmosphere. Think of the electric bill!

Ideally, in Word as in life, you want the right to change your mind. Before you make the commitment of slapping a **BoldItalic** button up there beside the bold and italic buttons, you want it to be a true switch, a toggle switch. For this, you need to have Word check if the formatting is turned on or off. If the selection is already bold and italic, turn it off; if it's not, turn it on.

### What If...?

In order to revise the **BoldItalic** macro with toggle functionality, I need to introduce two new concepts. (1) The *If..End If* construction: If a condition is true, do one thing, otherwise, do something else. (2) Getting the current values of a Word dialog box (so you can test them!), using the **GetCurValues** command. To get the current values of the **FormatFont** dialog box, you have to create a dialog record and assign the current values to this record, sort of like polling the dialog box for all its current information: name, age, sex, occupation, etc. Two lines take care of this:

```
Dim dlg As FormatFont  
GetCurValues dlg
```

The first line creates ( *Dim* is short for dimension) a dialog record — called *dlg* here, but you could, basically, use any name for it — to match whatever is currently in the **FormatFont** dialog box; the second line dumps the current status information into the dialog record. One more note before I show you the rest of the revised macro. To reference each piece of information in the dialog record, you preface the parameter name with a prefix consisting of the dialog record name and a period. So the bold parameter is referenced as **dlg.Bold**. Here's the entire macro:



```

Sub MAIN
Dim dlg As FormatFont
GetCurValues dlg
If dlg.Bold = 0 And dlg.Italic = 0 Then
    FormatFont .Bold = 1, .Italic = 1
ElseIf dlg.Bold = 1 And dlg.Italic = 1 Then
    FormatFont .Bold = 0, .Italic = 0
End If
End Sub

```

Now you see the If...Then construction. If bold and italic are both off, then turn them on. The ElseIf is for the other condition in the toggle routine: bold and italic are already on, so turn them both off.

Test out the new and improved BoldItalic macro. Select a word and run the macro. Both should be bold and italic. Run it again and the word should now have bold and italic turned off.

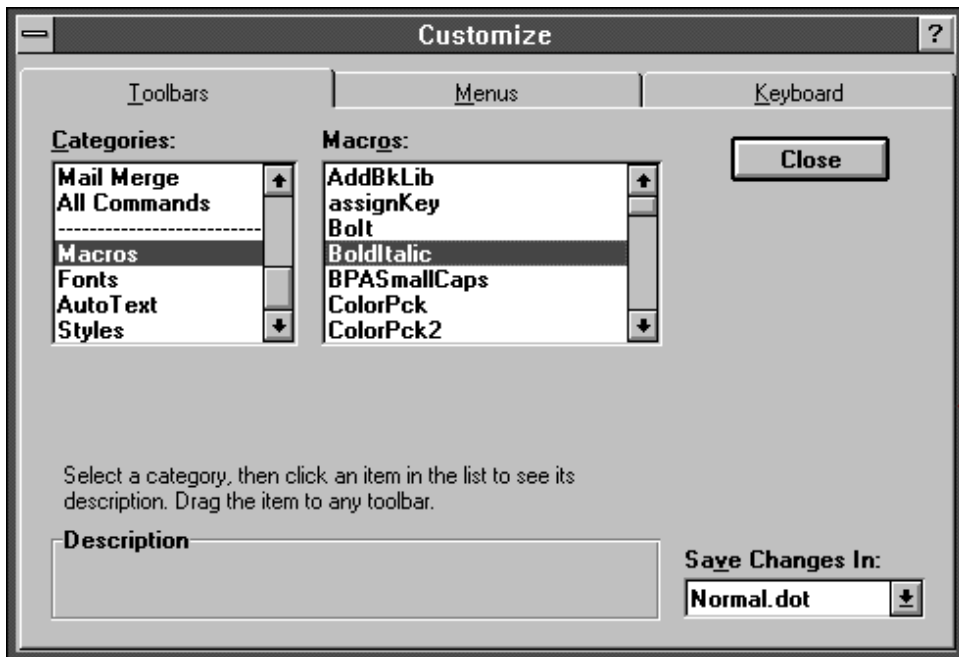
So we are ready to make a formatting toolbar button for the revised macro. Right? Not quite yet. One problem is that if the word you selected was bold but *not* italic, neither condition is true, so nothing happens. Same problem if the word was italic but not bold. No change, no matter how many times you run the macro.

The problem is that the If construct only executes if both conditions (i.e., bold and italic) are true or if both are false. If only one formatting condition is true, then neither instruction runs. This can be remedied easily by changing the two And keywords to Or. Now, if bold is on, but italic is off, running the macro adds italic to the bold attribute. Similarly, if italic is on but bold is not, bold will be turned on. Running the macro a second time turns both on or off, depending on their current state.

## Pushing Your Buttons

Save the current version of the macro by clicking on the disk icon on the standard toolbar. You can Save the Copy of the macro using the FILE menu, but this just saves the macro text; the macro itself is saved inside Normal.dot.

What you want to do now is assign your macro creation to the formatting toolbar. To add a button to the formatting toolbar, right-click anywhere on a visible toolbar, then select Customize from the context menu that appears. In the Customize dialog box, scroll down the Categories: list and select Macros; In the Macros: list, select BoldItalic; make sure that the Save Changes In: drop down list box is displaying Normal.dot.



With the **BoldItalic** macro selected, click-and-drag the macro name to the toolbar where you want it, probably to the right of the bold and italic buttons. Don't worry, it will shove aside the buttons to the left and right to squeeze itself in place.

When you let go of the mouse button, you will be able to designate the new button as a text button. The default text is **BoldItalic**, but the button width will grow to accommodate any text you may enter. Or you can select from the meager supply of graphic buttons. For now, just pick any of the graphic buttons. You'll change it in a moment.

With the **Customize** window still open, right-click on the italic button and select **Copy Button Image** from the context menu; now right-click on the silly little graphic you chose earlier and select **Paste Button Image**.



You'll have two identical buttons side by side, so you need to differentiate between them. Right click on the second one — the **BoldItalic** button — and select **Edit Button Image**. What I did was use Word's simple button editor to add some depth to the slanted 'I' to indicate the bold attribute, then added a gray 'B' to the upper left corner and a gray 'I' to the lower right. Here's what mine looks like:



You can attempt to duplicate mine or create a new button as your heart desires... within the limitations of 16 colors and the 16 by 16

pixel grid. When you're finished customizing your button, click OK, then click the Close button on the Customize window.

### **Conclusion and Limitations**

You now have a macro that toggles bold and italic on or off; if one or the other attribute is applied, the macro toggles the other on as well; you've assigned the macro to a toolbar button on your formatting toolbar. All's right in the world. Or is it?

You may notice that when you click your new BoldItalic button, you get the correct formatting, but instead of the BoldItalic button appearing depressed—as either the Bold or the Italic will do if you apply them individually—both the Bold and Italic buttons depress, while your combination button pops back up, unchanged.

Unfortunately, I haven't figured out how or if we humble Word users can change the appearance of custom buttons on the fly. However, even if the new toggle button doesn't look like the other toggle buttons, it works like a charm.

*Jack Passarella has been providing Winword support on Ilink as a conference host for some time. When one has a Word for Windows problem this is the guy you turn to for help. We recently discovered he has an artistic side as well. But more on that at another time. When he's not writing authoritative Word for Windows articles he is a systems man for a large commercial printing establishment.*

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## *An Introduction to the Mobile Computing Features of Notes R4 Part II*

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### **Taking Lotus Notes R4 Home and On the Road**

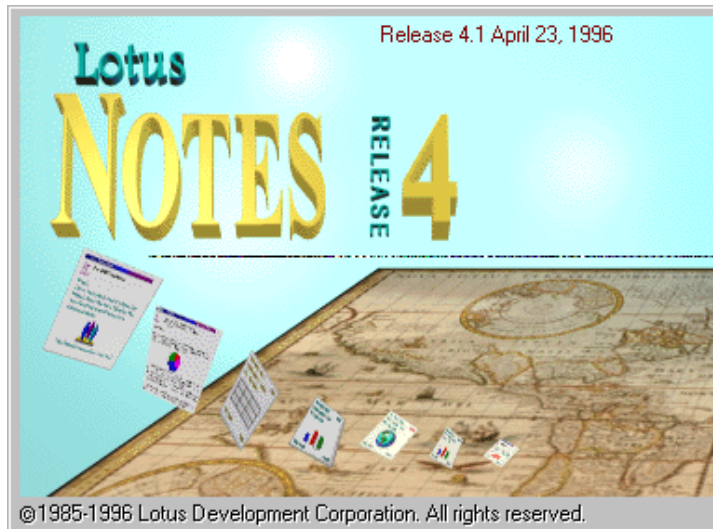
Copyright 1996 by Paul Williamson

**T**he heart of Lotus Notes R4 Mobile computing feature is the new Replicator Tab. This feature gives users access to a set of options that greatly increases the flexibility and range of control they can use over replication and mail routing.

The Replicator Tab provides an easy to use graphical interface for background operations that control various mobile related features for replication management and calling mail and data servers. Much of the guesswork end users had with previous versions of Notes is replaced with a simple, concise interface. Unlike other tabs on the Notes workspace, the Replicator Tab cannot be removed nor renamed.

#### **Replicas and Replication**

First, we need to define what replication is, in the Notes context. Replication is the process of exchanging modifications between *replicas*. A replica is a special type of copy of a database. Through replication,



**Notes makes all of the replicas essentially identical over time. For example, users in one office can make changes to a replica on their server at the same time that users in another office make changes to a replica of the same database on their server. When the servers replicate, each replica is updated with the information from the replica on the other server.**

**A replica has the same replica ID as the original database. This distinguishes a replica from a copy of a database because the common ID lets you replicate changes between the replica and the original database.**

**Replication can occur between two servers or between a workstation and a server, for example, between a laptop and a server. Replication can also occur in one or both directions between replicas. That is, you can set up replication so that two replicas receive updates from each other, or so that only one replica receives updates from the other.**

**Notes lets you choose which databases you want to replicate and when to replicate them. Replication can occur automatically according to a schedule you specify, or manually through server or workstation commands you specify. Replication between servers generally occurs automatically on a schedule specified by a database manager or network administrator, whereas replication between a workstation and a server generally occurs manually when a user needs to replicate updates.**

### **The Replicator Tab Contents**

**The Replicator workspace page lets you manage replication of your local databases in one place. With the Replicator page, you can replicate multiple databases with one or more servers with a single command. When you use the**

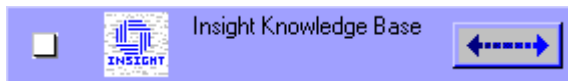
Replicator page, Notes replicates in the background so you can do other work while Notes replicates.

When you use Notes away from the office, you can have Replicator call each server you want to replicate with automatically. If you're using a passthru server or a remote LAN server, you can have Replicator make a single call and replicate all of your local databases at one time, even if they're on different servers.

The Replicator page also lets you customize replication depending on where you're working. For example, you could set up a local database to receive full documents when you replicate at the office (on a network) and receive shortened documents when you replicate away from the office (using a modem). The Replicator page also provides additional ways to replicate; for example, you can assign high priority to selected databases and replicate only those databases.

The Replicator page is always the last page on your workspace; you cannot delete it. It automatically contains the following types of entries:

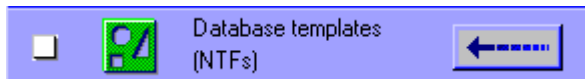
**Database -** The Replicator page contains a database entry for each local replica you have.



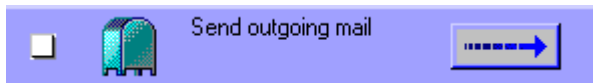
**Start replication at -** You can use this entry to specify a replication schedule and enable scheduled replication. This entry is always first and cannot be deleted.



**Database templates -** You can use this entry to refresh the designs of template-based databases. This entry cannot be deleted.

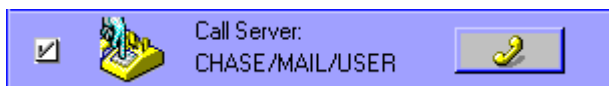


**Send outgoing mail** - You can use this entry to send all pending messages from your local MAIL.BOX database. This entry cannot be deleted.

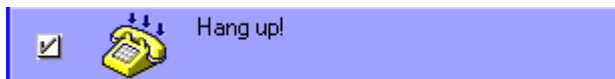


You can also create the following types of entries for mobile locations (such as Home and Travel):

**Call** - You can use a call entry to connect to a server. (See *Calling Into a Server* below for more information.)

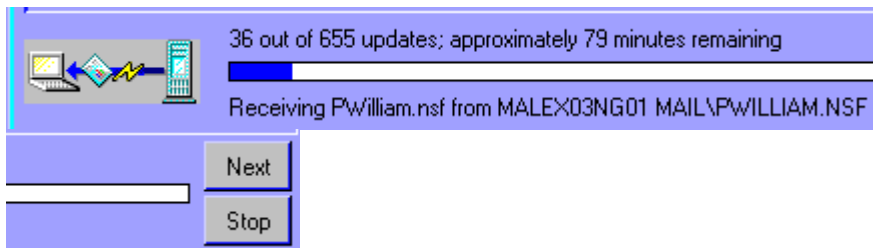


**Hangup** - You can use a hangup entry to end a connection with a server.



Most types of entries on the Replicator page contain action buttons which you can use to specify replication options. For example, you can use the arrow button on a database entry to specify the direction you want to replicate in and the server you want to replicate with.

When you replicate, the status bar at the bottom of the Replicator page displays current replication information, such as call attempt information, the database currently being replicated, and the number of updates that have been replicated.





After replication, the Replicator page displays replication statistics for individual entries such as the server replicated with and the date and time of replication.

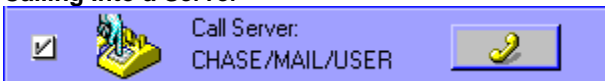


### Replicator and locations

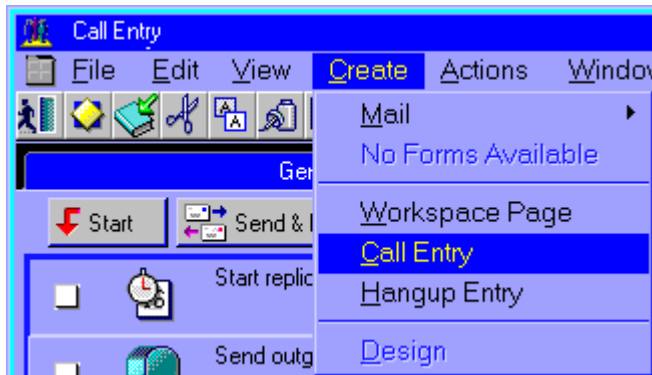
Notes lets you set up the Replicator page in a different way at each of your locations. This way, you don't have to change replication settings every time you work at a different location. For example:


- You could set up a database entry at your Office location so that it sends and receives documents when you're at the office and you could deselect the same database entry at your Travel location so that it never replicates when you're on the road.
- You could replicate all of your local databases on a schedule at your Office location and replicate only your mail on an as-needed basis at your Home location.
- You could arrange database entries in one order at your Travel location and arrange them in a different order at your Home location so that you replicate in a different order at each location.

### Calling Into a Server




When calling into a server, you may want to configure a Call Server entry. This isn't necessary since Notes will use the Connection document to determine the path to the server, but is useful to specify a particular server to call. If there isn't a Call Server entry already on the Replicator page, it can be easily added by clicking on the Create menu item and selecting Call Entry.



Once the entry is added, you simply click on the button with the picture of the phone to receive a list of all the servers to which you can connect from the current location. Just select the appropriate server and click OK. To enable this function, be sure the small box at the left of the line is checked. 

When you select the Actions/Start menu function or press the Start button, the Replicator will execute the enabled tasks in the order in which they appear on the page. Since this is a background replication program, you can still access menus and continue to work within Notes or other applications.

When the process starts, the first thing that appears is a pointing finger icon  pointing to the task that is currently active or running. A textual description of what is taking place will be shown along the bar at the bottom of the page. You will be able to see the status as Notes initializes the modem and makes the call based on the calling rules specified for the current location. Additionally, you will see graphical images that illustrate the entire replication process as Notes moves from connecting to the server, searching the server for

the database, extracting the data from the server, sending data to the server and finally ending in an idle state. During replication, the status bar indicating progress will also be shown.



1. By using different locations, you can easily maintain different combinations of replication options for any individual database. As you switch between locations, the Replicator Tab displays a page with options specific to that location. This includes the individual database options that were last used at that location. This allows you to maintain one location that sends and receives full documents while maintaining another location that only receives headlines or a limited amount of data.
2. This concept can be expanded to maintain different work modes. Because the line entries on the Replicator Tab page change their settings as you change locations, you can use Named Locations for more than just different physical locations. For example, you have a location called “Support” and have icons selected for replicating certain databases with support information. Switching to that *location* would allow easy replication of only those databases.
3. For quick mail transfer, you can use the Actions/Send Outgoing Mail menu choice, which ignores any Replicator tasks and only sends mail.
4. To minimize the time it takes to perform the initial replication, and thus minimize the possible access costs associated with long distance telephone charges, and possible hotel charges, make a local replica copy of the databases you want to access later. This will save considerable time over making the replica via phone calls.
5. Notes R4 accomplishes replication at the field level by assigning attributes to fields that were previously assigned only to entire documents. Notes R4 first detects if a change has been made to a

document as a whole and then determines which individual fields have been modified. If a field hasn't been changed, there's no need to replicate it. This feature will greatly improve life for the mobile user. Another benefit of field level replication is that it drastically cuts down on the number of replication conflicts. In Notes R3, even if two separate fields are modified within the same document on two different replica copies of a database, when replication occurs a replication conflict is created for the entire document. These conflicts have to be resolved manually, which are time consuming and quite often a very difficult process.

## Final Words

If you haven't installed a local copy of the Help database, you should install the Help Lite database, HELPLT4.NSF, locally so you can get help on mobile Notes and other topics while you're away from the office.

*Paul Williamson is a Vice-President at Chase Manhattan bank. He has contributed his computer knowledge and talent to [WindoWatch](#) from the day of our first issue. He sits on on The [WindoWatch](#) editorial board.*

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*Issues of HTML Presentations!*

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*No this is a story 'bout a man named Jed  
A poor mountaneer barely kept his family fed*

## **Teaching Old Dogs New Tricks**

**Copyright 1996 by Gregg Hommel**

**Whoa! Hold on just a second! Who put that tape in? That's for the wrong channel, wrong programme! Heck, it's even the wrong technology!**

**Although maybe not so wrong, to listen to all the pundits talk about the *gold in them thar hills* - the Internet?. Of course, for you and me, the average Joe Blo personal user of the Internet, such gold is not within our grasp, unless we happen to get very lucky, but still, the Internet, and in particular, the World Wide Web, is at the least, available to most of us for a home page, and is simple enough to use and access, with the standard HTML language.**

**And that is what we are going to discuss -the HTML language.**

**For some time now, I've had my own personal home page. Actually, that should read pages as there are several of them, divided by topics of interest for visitors, including pages for my shareware applications for Procomm Plus for Windows. Nothing fancy, but still, a way for people to find out more about me, and my applications if they are interested.**

**As I said, nothing fancy! Indeed, I kept them as simple as possible, in**

order to accomodate as many browsers as possible. But as is normal in life, all things change, sometimes whether we want them to or not.

In my case, the changes to my pages came about for two reasons...

- 1) discussions of framed pages in the ILink HTML conference, and
- 2) the availability of Microsoft Internet Explorer (MSIE) 3.0, in beta form.

I used MSIE, but since version 2.0 did not support frames, and since Netscape did not support the marquee tag from MSIE 2.0, I used neither HTML extension for my pages. But, with the advent of MSIE 3.0 beta, which supported frames, and discussion of both frames and marquees in the Ilink HTML conference, I decided to look at changing my pages into something more current and up to date.

I had used Netscape 2.0 for a while and had viewed a few framed pages, but in all honesty, I wasn't impressed. The ones I had looked at were not exactly spectacular, and indeed, the use of frames seemed to detract from them more than it enhanced them. As a result, and because I had switched to MSIE 2.0, I didn't bother with frames on my pages. But, with MSIE 3.0, I began visiting a few other sites that used frames, some having a very nice approach, such as shareware.com. As a result, I began paying closer attention to discussions of style and technique when using frames that were going on in the ILink HTML conference. It was then that I began thinking about how I might use frames to enhance my Web site.

Just a note here... today. We aren't going to get into a lot of HTML coding for frames or marquees. We'll reserve that for a future discussion. What we will look at is some of the thinking that went into my use of frames, and the how and why of them.

Many of you may have been to sites on the Web that have multiple pages and too often find a lack consistency in terms of unity of style in these pages. It can also be annoying to have to go back and forth from one page to another, with links between pages in random places, if they exist at all. More than once, I found myself on someone's sub-page, with no way back to one of their other pages, other than using the browser's **Back** button. which, depending upon where you are on the site, can be tiresome to use.

I try to avoid this annoyance on my site, but it isn't easy, and one isn't always successful. This is where our discussion of frames came into play. The folks on ILink, for the most part, agreed that many framed sites just weren't worth the time involved. The members' discussion of using frames more usefully, led to development of the basic concept of unifying the look of the various sub pages while easing navigation between them. Frames turned out to be rather well suited to this, *if* they were used with care and discretion, so we decided in conference discussions, and did not become an overpowering feature of the page. Too often frames slowed down access, rather than simplifying it, and made moving from page to page more cumbersome rather than less.

Thinking about this, I came up with what I thought was a simple, yet useful, framed page concept, that would serve the purposes we had been discussing, and allow for easier navigation of my home page. My artistic skills are about on a par with my writing ability, but let's see if I can get something here for you to show the concept anyway...



3 3 3

3 FRAME A 3

3 3



3 3 3

3 3 3

3 FRAME B 3 FRAME C 3

3 3 3

3 3 3

3 3 3

3 3 3

3 3 3

3 3 3

3 3 3

3 3 3

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3 3 3

3 FRAME D 3

3 3





**This is what I decided upon, and we'll get into the coding that creates it, next month. For now, we'll just look at what is in each frame....**

**FRAME A is a title bar, and it never changes. Remember, I want most of the page to be consistent, in order to maintain the same look throughout my site. It contains an HTML file which is a graphic title for the page, and a Microsoft Internet Explorer marquee description. The marquee code is designed inside a table, so that the text in the marquee will appear even if the browser being used does not support marquees, such as Netscape. More on that next month.**

**FRAME D is similar to FRAME A, in that it also never changes, and holds a small table which displays two basic items.. a mailto: URL so that people can send me email from the page if they wish, and my Web Counter display showing the number of visitors to the main page, to date.**

**FRAME B is also unchanging, usually, - unless I add a new sub-page, but is the navigation tool for my site. It is a vertical table of links to various sub-pages available, which can be displayed when clicked on. Those sub-pages are displayed in....**

**FRAME C is the most changeable frame on the page. It's size and location does not change, but, since it is the display area for my various sub-pages, the content will change often, at least that's my hope.**

**When a user visits my page with a browser which supports frames, like MSIE 3.0 or Netscape 2.x/3.0, he sees a consistent interface for all pages, in the form of the framed layout. The page which he has selected is displayed in FRAME C. Navigation between sub-pages is**

simple, since all he has to do is click on one of the topics in FRAME B, and that page is displayed for him. No worries about BACK buttons, or going backwards through multiple pages to get to the one he wants as a simple click with the mouse takes him there.

The more I thought about this, the more I liked the idea of having what almost appears to be a single page to the remote user, but still displays the various topics that I wanted available. As an aside, the above wasn't my first framed layout, but rather a process which led me to the above version. In next month's column, we'll get into the ever important detail. The point I'm making is that deciding upon the layout was the easy part. In one way getting the code for that layout and making it work as I wanted, turned out to be far more difficult than I ever imagined but far simpler in another. Next month, we'll get onto the road travelled to develop the code necessary to make the page work.

*Gregg Hommel has taken on the editorial responsibility for our HTML focus. He is an experienced programmer and Aspect script developer. Given his familiarity and skill with programming tools he was a natural. He continues his interest in Prowin as an Ilink Host and in Windows issues generally as the Rime co-host for Windows. Gregg has been a contributing writer for [WindoWatch](#) from its very beginning.*

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## The NT 4 Controversy:

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### **A Software Switch Hitter** Copyright 1996 by Lois B. Laulich

**The Argument:** O'Reilly Associates dropped a small bomb mid September when those on their mailing list were informed that the distance between the NT4 Workstation to NT4 Server was only two small registry settings away. The lines of code to make this registry change are well hidden and inaccessible by design. O'Reilly has made available at their web site, re-plicas for study along with a very fine article by their senior editor Andrew Schulman. The O'Reilly consultant, Mark Russinovich, took the next logical step and created, with Bryce Cogswell, a registry spy-ing utility to verify the O'Reilly claim of sameness of workstation and server kernels. Subsequently, Microsoft conceded that although the kernels are indeed the same, a kernel does not a server make. But we are getting ahead of ourselves!

*As we go to press, the Dept. of Justice is looking into allegations of anti-trust violations relating to Microsoft business practices. lbl*

Wisely, O'Reilly took their findings and a small conversion utility to PC Week Labs for independent testing. PCWeek confirmed that the O'Reilly claims were right on the money and the newly converted server does exactly what the O'Reilly folks are saying. Additionally, it is very clear that O'Reilly is NOT going to release their conversion utility to the public and they shouldn't. To be clear: We have seen no encouragement from O'Reilly to holders of NT workstation licenses to violate the conditions of those agreements.

**The context:** O'Reilly has recently released Inside the Windows95 Registry by Ron Petrusha with which Andrew Schulman was very involved. Schulman wrote the forward and expects to develop an online resource for the '95 Registry. These are not amateurs! The book is

well written and understandable, even though primarily addressed to programming types.

One must also say, that the O'Reilly finding occurs within the context of controversy surrounding the Microsoft NT workstation license and the number of incoming connections the client is legally allowed to support. Microsoft changed NT 4 workstation from both 3.51 and the version 4 betas, in their final release by limiting incoming support to ten IP connections when using the workstation as a server. Responding to negative press, MS announced that their original open connection policy would be re-instituted even though the work station license remains unchanged.

Software already developed for NT Workstation and written with certain understandings and assumptions based upon the earlier versions has been severely disadvantaged because of these changes in the final NT workstation release.

This last minute change effectively reduces the robustness of award winning O'Reilly web server, WebSite, as well as its potential sales. Additionally, the David-Goliath overtones of this ongoing Internet jockeying for sales and Internet influence can also be tied to the well publicized browser wars and the public side of a conflict defined as a struggle to dominate the Internet. As a result, this disclosure cannot be isolated from the formal complaint to the Dept. of Justice by Netscape over issues of anti-trust violation(s).

An interesting characterization of these events from a respected programmer of my acquaintance: "I think the NT stuff is purely a move from MS to force people to buy NT server. Removing a function that used to be there is good grounds for an anti-trust suit. It's really stupid and arrogant!"

[Are the NTs Separate Products?](#) The WindoWatch NT team, particularly people with long experience using NT like Linda Rosenbaum,

or someone integrating multiple operating systems, like Jim Plumb tell me that they knew that the NT kernels were the same. Jim went on to say that, “Now that this information has been widely publicized, MS should sell WS as the base product and charge for keys or licenses to unlock the server and other management tools.

The high-end publishing software I use, Interleaf and Xyvision, come with license managers controlling the options one can use, how many people can run the software and the availability selections simultaneously. When you want to add more options, you pay for them and get a revised license file to install. That’s all there is to it!” He went on to say that “There's no reason MS shouldn't package a server bundle separate from a WS package but they should be up front with their customers about it.”

Linda Rosenbaum has been using NT on a small home network with three other clients for husband and children. Her reaction was very similar to Jim’s. She believes that MS is giving something of extra value with the Server, referring to the extra software and components, or management tools that come only with Server. What remains unclear to her, is how much these extras are worth. She went on to say that it has always been her understanding that there was very little difference between the two in terms of base operating system. Or was she surprised to learn that the different options could be activated using settings in the registry.

A Microsoft marketing bulletin clearly points up some of the installed differences, a somewhat different spin than the base kernel comparison. Each of the NT4 operating systems has its own strengths and weaknesses which Microsoft carefully explains in the preamble of their revised Market Bulletin dated Summer 1996:

Microsoft® Windows NT® 4.0  
Market Bulletin, Summer 1996

### **Differences Between Windows NT Workstation 4.0 and Windows NT Server 4.0**

Since the first release of the Windows NT platform in 1993, Microsoft has followed a strategy of providing the same kernel architecture, user interface and Application Programming Interface (API) across both the Windows NT Workstation and Server products, while optimizing, pricing, and licensing the products for two specific segments - the interactive desktop operating system and the high performance server. Consistent with that strategy, the Windows NT 4.0 platform is available in two versions: Windows NT Server 4.0 and Windows NT Workstation 4.0.

Aside from the bundled management tools, of debatable dollar value, there are important differences how each system is optimized. One of the fundamental differences is how memory is used or cached for each. In very simplistic terms, memory is primarily cached for rapid response for the WS while it is made completely available for file access and the primary i/o functions of the Server.

Prioritization of tasks or time slicing of the CPU is the other major difference. The workstation is optimized at installation to divide its attention into short slices for rapid foreground usage and the loading and unloading of multitasks. The server requires longer timeslices to deal with multiple network requests efficiently. What is critical to remember, however, is that it is the workstation or server designation which sets off the cascade of multiple options for each installation.

In any case, this latest Internet argument represents still more jockeying for dominance over who is going to create the standards for future Internet software development. Indeed, the NT workstation fight could be over before it has even begun. The street price for an NT 4 workstation upgrade has already dropped to around \$100 putting the product solidly in the hands of individual users and in competition with OS/2 and '95! Market pressure could well even the playing field.

**The Internet Temperature:** Even though Internet WebServers are the focus of the O'Reilly-MS conflict, the Internet I frequent doesn't seem to have noticed. (My observations are drawn from news groups discussing NT and operating system issues.) It seems those people have

taken a pass and the argument in question is producing a big yawn. Obviously there is some discussion but it is quite limited and has become a repetition of the major points stated above. There is, however, a single important exception: “Has Microsoft acted ethically?”

**Insatiable Appetites:** When Microsoft originally developed NT it was to compete for parts of the corporate market. Networking, cross platform interfaces or inter-connectivity are the guts of competition within the corporate scene. Heavy network demands for memory, advanced processing, reliability and security were product issues four years ago and still are. In contrast, planning for Windows 95 was geared to satisfy needs for 32bit and legacy software support. This was and continues to be an important issue for desktop users with limited installed hardware.

But! All of this changed in a relatively short time and for at least two important reasons: The decreasing cost of hardware and the emergence of the Internet with its rapid exchange of highly specialized computer and related information. As a result, Windows95 users were motivated to upgrade their hardware **so that migration to NT was not the huge leap originally contemplated.** The flourishing of the Internet has fundamentally changed how sophisticated computer information is exchanged and disseminated. The newly available desktop search engine bots take this phenomena even a step further. *WindoWatch* suggested <sup>1</sup>recently that the Internet is potentially the computer appliance while Byte Magazine has referred to the Internet as, *the computer.*”

In any case, the Internet, email and web pages have become an every day fact of life for many and for quite some time. Those of us coming from academic and defense establishment environments who saw the early Internet beginnings never thought that this was the genesis of

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<sup>1</sup> Is the Future Almost Now? by Lois B.Laught; WindoWatch Jan1996;Vol.2 No.1

main stream computing. When Microsoft woke up to this new reality it found a culture of very independent artisans receptive to new ideas, and functioning within a very open if noisy environment.

It also found a counter culture where product on the Internet is free or almost free. Coupled with the steady drop of the cost of hardware, as IBM, an earlier Microsoft competitor discovered, lots of garage enterprises had the talent to create innovation. And as the hardware industry has learned painfully, standardization of components makes my homebrew Pentium running an NT 4.0 server not very difficult to construct or to upgrade.

**Tinkering with Code:** Depending upon clout or budget, computer users at various skill levels have been customizing their software from the days of the autoexec.bat and the config.sys. I hear Microsoft defenders beginning to use language like bootleg and license violation as it relates to this NT controversy but have never whispered a word heretofore, as it relates to tinkering with other OS configurations. Do I need a separate license to customize or create dual or triple Win or System.inis for quite different functions. Microsoft made it very clear that it would not support changes of the registry in Windows95 but many of us do. It was never said that this represented illegal practice. I, for one, would welcome a shareware routine to alter the registry on my '95 boxes to make the complete re-installation of all resident applications no longer a necessity when opting for NT. Presently dual booting is the recommended solution although not an option for me. If I were able to create such an alternative for myself, would I be in violation of my license?

At the time of the 4.0 release, users were told that the two registries were so different and structurally incompatible that it was an impossible upgrading task. Anyone who has thought about this for more than a few minutes knows that assertion is not just over stated but apparently untrue. For whatever the reasons the '95 upgrade is a



low priority for Microsoft planners and will not be made available for '95 users wanting to upgrade to NT4 until late '97 or early '98. Too late for my time table and perhaps too late for others as well.

**The Ethics of Big Guy Practices:** The Big Guys in my world of Intel microprocessors were IBM, Novell, Microsoft, Intel, Lotus, and then of course there is Apple. The customers of the Big Guys are even Bigger Guys! Bigger Guys like the government, banks, insurance companies, financial institutions, and utilities write their own ticket when they purchase software, -at least they think they do. These are the plum accounts of main frame purchases, mega hardware and network installations, dumb terminals, zillions of licenses, and seminar training. The corporate model, at least in the early days, honestly required TA (technical assistance) in order to make the obtuse technology useable. There has developed a paternalistic tradition where the Big Guys tell the Bigger Guys what they need to buy. Microsoft has successfully become the biggest Big Guy and has already achieved the status of becoming a Bigger Guy in its own right. That's how business is conducted not just in the USA but around the world.

What made Microsoft a Big Guy were not enterprise customers but rather small and medium size business where MS specialized in operating system software. As hardware costs began to decline, more and more individuals purchased computers for their own use, and the MS star began to rise. Very powerful desktop computers were coming to market at a time when big business was consolidating and redefining their computer needs. Ultimately this trend reduced the demand for Bigger Guy services. On the other hand Microsoft was providing reasonably priced and quality software for their, (and it is theirs) rapidly expanding operating system market. It seems to me that here lies the dilemma. Can Microsoft maintain their efforts to develop and increase their enterprise business while keeping happy their traditional but much smaller and less technologically demanding customer base? MS has the entrepreneurial right to design software

**for whatever market where they perceive a demand and to price it accordingly. However, you as an individual or small business don't have to like these artificial marketing standards.**

**As the NT controversy emerged so have accusations that Microsoft has short changed its customers primarily around the question of duplicate kernels used in both workstation and NT server. What is being discussed are perceptions of truth which in reality turn upon the class of customer you are. If you are a developer like O'Reilly with a substantial investment in programming resources I would guess you would be more than a bit angry at having WebSite's rosy future diminished. If you are using workstation from home or home office you have no beef in my view. If you've paid a lot of money for server software and you see lesser licensees making hay with essentially cheaper workstation installations having the same functions, you might be furious at such sloppiness from a major developer.**

**In terms of the O'Reilly beef, I don't know how unusual it is for primary software houses to change signals on developers using their product. I would guess that this event does not represent a first as these things go. Obviously concessions are made to good and loyal customers, all a legitimate part of business dealings. Bottom line: How often does a software house distribute their own software on the same CD that effectively cripples their competitors' offering as in the case of WebSite?**

**In terms of server customers, Microsoft has bundled management tools which, it is said, are reasonably priced and which function seamlessly and with stability. I really don't think lack of faith accusations work here at all. Nonetheless the O'Reilly finding has certainly grabbed the attention of those of us who are drawn to the ins and outs of operating systems. Further O'Reilly's award winning WebSite server viability depends upon the open incoming IP connections available in**

prior workstation versions. Not reassuring when one is in direct competition with a software giant!

**What Happens Now:** It must be said, given this articulated puzzle that there are many fine Windows programmers who might find themselves *professionally challenged* and attempt to replicate the O'Reilly steps to create a conversion utility. Not a boot legged copy, because O'Reilly will sit on theirs, but a unique though similar approach for solving the same problem. Call it re-engineering, tinkering, or tuning one's system. Obviously not rocket science if you're comfortable with the registry database or, in fact, particularly unusual within the software industry. It has been whispered more than once that the big guys have been guilty of re-engineering code originally designed by small but independent software developers!

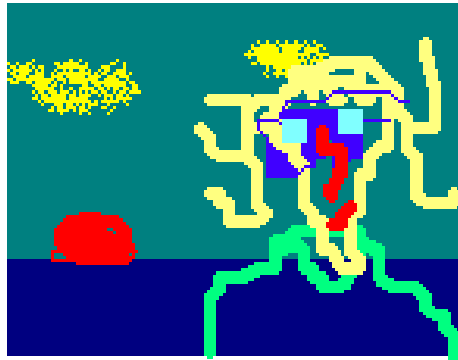
For the short term the combatants will cool it and probably should. However, the basic fight, over unilateral control of software standards and development, which the O'Reilly and Netscape fracas underscore, is not going to go away any time soon. If Internetters are forced to use developer selected software, by implication the developer's own, with the developer employing either contradicting license conditions or code manipulation, users are going to react negatively and actively support legal options. There have been recent rumblings relating to browser software which do exactly that.

But that, my friends, is an article for another day.

*Lois Laulicht is the Editor Publisher of [WindoWatch](#).*

**Stellar Alice**  
**Copyright 1996 by Peter Neuendorffer**

**I heard it from Alice, my friend the inventor! She is working on an idea for interstellar travel. She feels that the answer is to place a theme park in deep space and people will find a way to get to it. She is also somewhat discouraged about the dwindling species in our environment and the ultimate effect on the food chain, necessitating colonization of space sooner than we are ready for it.**



**I pointed out to her that deep space was probably uninhabitable, unless you can live in an environment of hydrogen. She pointed out that all we need is to bring some plants along and we will have oxygen. But what about carbon, I asked? She says that if people bring a lot of pencils along that things will all adjust properly. Whatever else is needed can be grown as necessary.**

**I asked her if she had heard about the new idea of 1 hr. travel around the earth by going into space briefly. She says she thinks this is great but questioned whether the tickets might be a little too expensive for**

most people. However, she says she still thinks if people want to go somewhere badly enough, they will find a way to get there.

Positive thinking goes a long way toward one's travel plans, she added. The trick is to ignore bills, and buy the ticket. I asked her what type of travel would be interstellar, and she said, "The longest journey starts with a single step." That's a lot of steps, if you ask me. She says the models are encouraging and a recent market survey shows many people would enjoy a long trip to anywhere. This all reminds me of a 3D cereal box comic book of my childhood wherein Donald Duck travels by rocket to the land of potatoes.

*Peter Neuendorffer is the creator of my friend Alice and her many adventures and pronouncements. He is also a Windows programmer and a regular [WindoWatch](http://www.users.channell.com/petern) contributor. His homepage can be seen at <http://www.users.channell.com/petern>*

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## *Internet Humor*

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### **Signs of the Times:**

**A woman at our interactive advertising agency recently returned from her maternity leave and sent the following e-mail:**

**Whoever used the milk in the small plastic container that was in the refrigerator yesterday, please do NOT own up to it. I would find it forever after difficult to meet your gaze across a cafeteria table whilst having a discussion about java applets or brand identity. Just be aware that that milk was EXPRESSLY for my son if you get my drift. I will label these things from now on, but if you found your coffee tasted just a little bit special, you might think of calling your mom and telling her you love her.**

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### **MURPHY'S LAWS ON WORK**

**A pat on the back is only a few centimeters from a kick in the pants.**

**Don't be irreplaceable, if you can't be replaced, you can't be promoted.**

**You can go anywhere you want if you look serious and carry a clipboard.**

**Eat one live toad the first thing in the morning and nothing worse will happen to you the rest of the day.**

**Never ask two questions in a business letter. The reply will discuss the one you are least interested in, and say nothing about the other.**

**When the bosses talk about improving productivity, they are never talking about themselves.**

**If at first you don't succeed, try again. Then quit. No use being a silly fool about it.**

**There will always be beer cans rolling on the floor of your car when the boss asks for a ride home from the office.**

**Mother said there would be days like this, but she never said there would be so many.**

**Never delay the ending of a meeting or the beginning of a cocktail hour.**

**To err is human, to forgive is not company policy.**

**Anyone can do any amount of work provided it isn't the work he is supposed to be doing.**

**Important letters that contain no errors will develop errors in the mail.**

**The last person that quit or was fired will be the one held responsible for everything that goes wrong - until the next person quits or is fired.**

## **Welcome Back!**

**Copyright 1996 by Frank McGowan**

**In the beginning was the.. WordPerfect? Well, maybe the first was WordStar, or some other pioneer, but in terms of dominance, the early champion was WordPerfect. It stood astride the word process-ing world like a Colossus. Only in recent years has the Microsoft juggernaut overtaken the old champ, relegating it to a runner-up position in the field. And that's too bad. There's still a lot of life in the old boy, as I discovered when I started looking into the latest iter-ation, Version 7.0 for Windows 95.**



**Most of us buy a word processor because we need to (surprise) process words. In the old days, these software applications were called text processors. Just when the differentiation between *words* and *text* was defined, or by whom, is a mystery probably not worth solving. I suspect it has something to do with ASCII vs. formatted text, but I'll leave that to the historians. In the meantime, in real life, the question of which word processor to buy is certainly not academic. In some ways, it's probably determined by early upbringing or conditioning, much as there are Ford drivers and Chevy drivers.**



**My orientation is towards Word. My wife's is towards WordPerfect. The memories are still fresh of her struggle to master the complexities of the DOS version, with its function keys, Ctrl, Alt, and Shift keys, and their bewildering combinations. It amazed me that anyone could have the patience or brainpower to figure all this out, much less use it on a daily basis. My admiration for her mental prowess, already high, went up exponentially.**

**By the time I entered the fray, Windows was here and DOS was, thankfully, fading into the background. I got started on Word, and never looked elsewhere, so my review of V7 WordPerfect must necessarily have that slant. Much of what I marvel at in the following paragraphs will probably strike veteran WordPerfectionists as old hat, but to me it's new and thrilling, well, a little at least. So bear with me, as I plunge into (for me) uncharted waters. I'll start with the first thing I confronted, namely...**

### **User Documentation**

**I may be atypical in this regard, or it may be the result of my time spent as a technical writer, but I believe user documentation is the window (no pun intended) into a software program, and has a profound effect on a user's experience with a program. Lousy documentation has been the undoing of many an excellent software product. For the most part, WordPerfect's documentation creates a positive impression. Kudos to the writers, editors and production staff (and their management).**

**As with most applications, WordPerfect's user documentation takes two forms: paper (hard copy) and electronic (Help). Try as we might, we still haven't reached that long-sought paperless society.**

## Hard Copy

The hard copy version, the user manual, is neatly put together, laid out well and written clearly and simply. Key points are easy to spot on the well-designed pages, and the diction is directed at a literate adult of normal intelligence. The book's written in second-person, active voice, according to the dictates of good technical writing. The index is complete without being overstuffed, so things are easy to find.

Naturally, I can't let it go without a little fault-finding. On page 45, in the description of Typeover, the word *proceeding* is used incorrectly in place of *preceding* ; but even if the writer/editor had gotten the right word, the meaning of the sentence would be wrong, since the text that's replace by Typeover is that which follows, not that which precedes. I am also disturbed by the use of *un* as the all-purpose negation device, so when I found *unmark* on page 52 the editor in me bristled. Surely a professional writer shouldn't be too hard-pressed to come up with a better word, *clear* , for one. But then, I find the use of Unfreeze in Excel appalling too, so I guess that makes me an equal-opportunity carper.

## Help

WordPerfect's on-line documentation is very comprehensive indeed! Besides the list of Help topics and contents, there's a *How Do I* feature which invokes a WordPerfect expert, or *wizard* if you prefer, that takes you through a hand-holding process for whatever it is that has you baffled.

**I was also impressed by the availability of SGML, and the care taken to include it in Help as a separate topic. I'm not sure what I'd do with it, not being an SGML user, but I'm sure there are many of you out there who can and will put it to good use.**

## **Features**

**There are a lot of good things in WordPerfect 7.0, including some clever tools that should make your life as a wordsmith easier.**

### **Timed Backup**

**From the perspective of a Word person, like myself, it wasn't obvious where I would find the Autosave feature. Thankfully, the manual's index led me to Timed Backup, which is what it's called in WordPerfect. It's there by default, and is set to spring into action every ten minutes, a la Word. So, except for the name, it's still a rose, and smells as sweet. You can, of course, control the time between saves. If you're super-paranoid about losing work, you can reduce it from ten to, say, five, which will ensure that you lose no more than five minutes' worth of editing. The problem is that while the save is in progress, you can't work on the file, so being interrupted every five minutes can become annoying and inefficient, especially when the file is large, and, just to compound the problem, you're saving to diskette.**

### **Formatting**

**I really like the feature that lets you control paragraph formatting directly from the work screen, rather than forcing you to enter via the Format menu (or restrict you to a few buttons on the toolbar). By clicking on the symbol in the margin next to the paragraph you access a set of formatting choices, including indentation, alignment, bullets,**

numbering, fonts, etc. And, having set up a format, you can save it with its own name. Neat.

## **Speller**

Like Word 7.0, WordPerfect 7.0 underlines typos as they occur, so you can fix them as you go. You can turn this off if you find it distracting, by going into the Tools menu and turning off the “Spell As You Go” feature.

If you prefer to wait and get 'em in batch mode, the Spell program is available. Like Word's, the Spell program flags text that doesn't match the contents of its dictionary and provides a list of replacements. Sometimes, these are a bit odd and make you wonder what the implementors had in mind, such as suggesting “Opencast” as a replacement for a misspelled “Appearances.” Where in the world did that come from? And wouldn't it be logical to accept WordPerfect's tool names? In which case, QuickCorrect wouldn't be flagged as a typo.

Spell checking is turned on automatically, but you can override this by selecting an option from the Tools menu. You can also ask that the program to announce a misspelled word by beeping! I don't know about you, but I already have enough extraneous noise around me to want to use this option.

## **QuickCorrect**

This is what the automatic correction feature is called, and it works much like Autocorrect. Again, I can't let it go by without picking a few nits, such as including “acomodate,” but not the more popular “accomodate.” One automatic fix to be aware of is that any word following a period, or other sentence terminator is automatically given

an initial cap. So, if you include an abbreviation, such as “etc.” in the middle of a sentence, the next word will be capitalized. Not a big deal, but something to be aware of.

## **Address Book**

This goes hand-in-hand with the emphasis on connectivity that’s being stressed in so many application programs. WordPerfect 7.0 includes the ability to create a list of addresses you can use to send your documents via Email or Internet. It’s a nifty feature, with lots of flexibility, so you can tailor the addresses as you wish. You can create several, each dedicated to a particular group of addressees with common interests. You can also have the program dial a phone number for you, right from the Address book.

## **Undo/Redo**

I thought Word had reached the ultimate pinnacle here, with 100 levels of Undo, but WordPerfect 7.0 really makes it hard to go too far wrong: you can undo the last 300 actions you’ve taken! While this may be reassuring to some, I think we may have reached the point of diminishing returns in this regard. It would be like setting up a directory for every file on your disk. After you’ve undone 300 actions, you’re probably at the point of retyping the whole file. And, you should probably consider getting into a different line of work.

## **Toolbars**

The standard toolbar contains some buttons we Worders have gotten used to finding on the Formatting toolbar (no problem there). Also, what Word calls the Formatting toolbar is called the Power bar, which makes it sound like a high-energy snack food.

## Table Creation

This is an area where WordPerfect 7.0 really shines. There's not enough space to enumerate all the terrific features included in creating and formatting tables, but for starters, you can: format individual cells by clicking on a button that appears within each cell when it's selected; click on a QuickSum option to add numbers in columns (much like the Formula option in Word, but much faster); specify borders in an astonishing number of formats, for each cell or for the entire table; specify a dizzying array of text alignment within cells (both in vertical and horizontal alignment and rotation of text within a cell); put in diagonal lines; and on and on it goes! I was extremely impressed with the Table feature, but I do have to wonder whether once again things have been taken to extremes. All these bells and whistles seem a little overdone. Still, I suppose you can't have too much of a good thing.

## Summary

With WordPerfect 7.0, Corel has made a bold move into continuing the progression from pure word processing to word processor as desktop publishing tool. I was dazzled by the power and flexibility of this program, and anticipate that Microsoft will include some similar features in the next release of Word.

Now, if they've done the same with the other programs in their suite, they're in position to give Microsoft Office a serious run for its money. Tune in next month.

*Frank McGowan has become the Swami of software suites! In his next life I doubt if he will ever touch these again. In this life, however, he is a teacher, a science writer, and a computer consultant as well as a regular [Windo Watch](#) contributor*

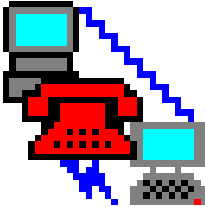
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*What's Really New?*

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## Reflections of a ModemJunkie

Copyright 1996 by *Leonard Grossman*

Computers are amazing. Every day we are impressed by the number of things we can do with computers that we simply couldn't do before.

For example:

Wait a minute. That next sentence should come easily. Each day there are stories in the newspapers about the computer industry. The stock markets follow closely the latest news in the browser wars or chip development. Yet, finding something really new eludes us.

There was a story in the New York Times the other day about a small company on the east coast that was proving invaluable in sorting out claims of various purported eye witnesses to the TWA Flight 800 disaster. According to this story, there is a gap in the information provided by Air Traffic Control and by the flight crew itself during the last few minutes of a flight as the crews prepare to land and the final runway decisions are made. Because of these delays, ground

**crews could be unable to prepare for the actual landings and support services could be severely delayed.**

**However, it appears that this small firm has found an answer using information provided by transponders on each plane which are required by the FAA. By using computers, it is able to use a form of triangulation to identify each plane and give ground crews much more accurate information as to the location of each plane and to also provide much more accurate estimates of actual landing times than is available from other sources. In the case of the TWA crash the data provided precise information as to when the engines on Flight 800 ceased operation, while conventional radar continued to show the path of the jet, even after the explosion.**

**In addition this ability proved particularly useful in analyzing eye witness information surrounding the crash of TWA Flight 800. By reviewing its records, the firm was able to determine the precise position and path of each plane in the area at the time of the crash. Using this information, crash investigators were able to evaluate the quality of the eye witness information provided by crews and passengers in the vicinity at the time.**

**This information is recorded at a number of airports around the country and except for the firms, like United, which have contracted for the information, few people are aware that such records are kept. The firm has become a silent monitor for a number of airports around the country. This time, the information they quietly stored was available for a quite unintended and unexpected purpose.**



How amazing I thought. Where would we be without computers? Then I read Snow Falling on Cedars the magnificent novel I referred to in last month's column. In that novel, a young Japanese-American is accused of a maritime murder. The prosecutor has everything: motive, opportunity, weapon. Everything but a witness to the act itself. The reader knows something isn't right. But in the face of such overwhelming circumstantial evidence, how can this young man possibly be acquitted? The novelist carefully develops the character of the major figures. The reader doesn't want to believe that the young man is guilty. Yet the overwhelming evidence seems to convict him. If only there were some independent evidence to corroborate or contradict the circumstantial evidence.

Well (I hope I am not ruining this book for anyone; it's been out in paper for years), there was a silent witness that night too.

It turns out that at a lonely lighthouse on this island off Puget Sound, a Coast Guard employee regularly made a manual log of the soundings made that foggy night. The logs would reveal just which boats were in the ship channel that night and how close to one another they passed.

One way or another they would reveal the truth.

No one ever looked at those notes. They were just silently filed away. At the last minute, a major character in the novel discovers these logs and presents them to the court. Compared to the sophisticated transponders and computer analysis used in the crash of Flight 800, these manual logs were decidedly low tech. But the technique was essentially quite similar.

**When I read the novel, I had a strange sense of deja vu. I immediately understood the technique being described. At first I didn't realize why. Then I remembered the New York Times story.**

**Unfortunately, all of our modern technology hasn't provided the answers to the crash of Flight 800, at least not as of this writing. But it is comforting to know that there is truly nothing new under the sun.**

*Leonard Grossman is an attorney who works for the government. He is a **Windo-Watch** regular and has been contributing "Reflections" for some time. Leonard's home page was chosen as a "Best o' [comp.infosystems.www.announce](http://comp.infosystems.www.announce)" site during April 1996. He is also president of his local user group. Comments can be sent to [grossman@mcs.com](mailto:grossman@mcs.com) or [leonard.grossman@syslink.mcs.com](mailto:leonard.grossman@syslink.mcs.com)*

*Late in the legislative session both the House and Senate heard testimony on issues of encryption legislation. This debate promises to heat up immediately after the election no matter who takes the White House. The following testimony from Phil Zimmerman lays out the more important arguments.*

**Testimony of Philip R. Zimmermann to the Subcommittee on Science, Technology, and Space of the US Senate Committee on Commerce, Science, and Transportation 26 June 1996**

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**Mr. Chairman and members of the committee, my name is Philip Zimmermann, and I'm Chairman and Chief Technology Officer for PGP Inc, a newly-formed company that provides cryptographic products.**

**I'm here to talk to you today about S.1726 and the need to change US export control policy for cryptographic software. I want to thank you for the opportunity to be here to speak in favor of this bill.**

**I'm the creator of PGP (Pretty Good Privacy), a public-key encryption software package for the protection of electronic mail. Since PGP was published domestically as freeware in June of 1991, it has spread organically all over the world, and has since become the de facto worldwide standard for encryption of E-mail, winning numerous industry awards along the way. For three years I was the target of a**

**criminal investigation by the US Customs Service, who assumed that laws were broken when PGP spread outside the US.**

**That investigation was closed without indictment in January 1996.**

**Computers were developed in secret back in World War II mainly to break codes. Ordinary people did not have access to computers, because they were few in number and too expensive. Some people postulated that there would never be a need for more than half a dozen computers in the country, and assumed that ordinary people would never have a need for computers. Some of the government's attitude toward cryptography today were formed in that period, and mirrors the old attitudes toward computers. Why would ordinary people need to have access to good cryptography?**

**In addition to the limited availability of computers, another problem with cryptography in those days was that cryptographic keys had to be distributed over secure channels so that both parties could send encrypted traffic over insecure channels.**

**Governments solved that problem by dispatching key couriers with satchels handcuffed to their wrists. Governments could afford to send guys like these to their embassies overseas. But the great masses of ordinary people would never have access to practical cryptography if keys had to be distributed this way. No matter how cheap and powerful personal computers might someday become, you just can't send the keys electronically without the risk of interception. This widened the feasibility gap between government and personal access to cryptography.**

**Today, we live in a new world that has had two major breakthroughs that have an impact on this state of affairs. The first is the coming of the personal computer and the information age. The second breakthrough is public-key cryptography.**

**With the first breakthrough comes cheap ubiquitous personal computers, modems, FAX machines, the Internet, E-mail, the World-Wide Web, digital cellular phones, personal digital assistants (PDAs), wireless digital networks, ISDN, cable TV, and the data superhighway. This information revolution is catalyzing the emergence of a global economy.**

**But this renaissance in electronic digital communication brings with it a disturbing erosion of our privacy. In the past, if the government wanted to violate the privacy of ordinary citizens, it had to expend a certain amount of effort to intercept and steam open and read paper mail, and listen to and possibly transcribe spoken telephone conversation. This is analogous to catching fish with a hook and a line, one fish at a time. Fortunately for freedom and democracy, this kind of labor-intensive monitoring is not practical on a large scale.**

**Today, electronic mail is gradually replacing conventional paper mail, and is soon to be the norm for everyone, not the novelty it is today. Unlike paper mail, E-mail messages are just too easy to intercept and scan for interesting keywords. This can be done easily, routinely, automatically, and undetectably on a grand scale. This is analogous to driftnet fishing -- making a quantitative and qualitative Orwellian difference to the health of democracy.**

**The second breakthrough came in the late 1970s with the mathematics of public key cryptography. This allows people to communicate securely and conveniently with people they've never met, with no prior exchange of keys over secure channels. No more special key couriers with black bags. This, coupled with the trappings of the information age, means the great masses of people can at last use cryptography. This new technology also provides digital signatures to authenticate transactions and messages, and allows for digital money, with all the implications that has for an electronic digital economy.**

**This convergence of technology -- cheap ubiquitous PCs, modems, FAX, digital phones, information superhighways, et cetera -- is all part of the information revolution. Encryption is just simple arithmetic to all this digital hardware. All these devices will be using encryption. The rest of the world uses it, and they laugh at the US because we are railing against nature, trying to stop it. Trying to stop this is like trying to legislate the tides and the weather. It's like the buggy whip manufacturers trying to stop the cars -- even with the NSA and the FBI on their side, it's still impossible. The information revolution is good for democracy -- good for a free market and trade. It contributed to the fall of the Soviet empire. They couldn't stop it either.**

**Today, every off-the-shelf multimedia PC can become a secure voice telephone, through the use of freely available software such as PGPfone. When you combine that with the strong political will that exists in the American people to have their privacy, it's going to require extreme measures to control this technology. What does this mean for the government's Clipper chip and key escrow systems?**

**Like every new technology, this comes at some cost. Cars pollute the air and cause traffic jams. Cryptography can help criminals hide their activities. People in the law enforcement and intelligence communities are going to look at this only in their own terms. But even with these costs, we still can't stop this from happening in a free market global economy. Most people I talk to outside of government feel that the net result of providing privacy will be positive.**

**Law enforcement and intelligence interests in the government have attempted many times to suppress the availability of strong domestic encryption technology.**

**In 1991, Senate Bill 266 included a non-binding resolution, which if it had become real law, would have forced manufacturers of secure communications equipment to insert special "trap doors" in their products, so that the government could read anyone's encrypted messages. Before that measure was defeated, I wrote and released Pretty Good Privacy. I did it because I wanted cryptography to be made available to the American public before it became illegal to use it. I gave it away for free so that it would achieve wide dispersal, to inoculate the body politic.**

**The 1994 Digital Telephony bill mandated that phone companies install remote wiretapping ports into their central office digital switches, creating a new technology infrastructure for "point-and-click" wiretapping, so that federal agents no longer have to go out and attach alligator clips to phone lines. Now they'll be able to sit in their headquarters in Washington and listen in to your phone calls. Of course, the law still requires a court order for a wiretap. But while**

**technology infrastructures tend to persist for generations, laws and policies can change overnight.**

**Once a communications infrastructure optimized for surveillance becomes entrenched, a shift in political conditions may lead to abuse of this new-found power. Political conditions may shift with the election of a new government, or perhaps more abruptly from the bombing of a Federal building.**

**A year after the 1994 Digital Telephony bill passed, the FBI disclosed plans to require the phone companies to build into their infrastructure the capacity to simultaneously wiretap one percent of all phone calls in all major US cities. This would represent more than a thousandfold increase over previous levels in the number of phones that could be wiretapped. In previous years, there were only about 1000 court-ordered wiretaps in the US per year, at the federal, state, and local levels combined. It's hard to see how the government could even employ enough judges to sign enough wiretap orders to wiretap 1% of all our phone calls, much less hire enough federal agents to sit and listen to all that traffic in real time. The only plausible way of processing that amount of traffic is a massive Orwellian application of automated voice recognition technology to sift through it all, searching for interesting keywords or searching for a particular speaker's voice. If the government doesn't find the target in the first 1% sample, the wiretaps can be shifted over to a different 1% until the target is found, or until everyone's phone line has been checked for subversive traffic. The FBI says they need this capacity to plan for the future. This plan sparked such outrage that it was defeated in Congress, at least this time around, in 1995. But the mere fact that the FBI even asked for these broad powers is revealing of their**



**agenda. And the defeat of this plan isn't so reassuring when you consider that the 1994 Digital Telephony bill was also defeated the first time it was introduced, in 1993.**

**Advances in technology will not permit the maintenance of the status quo, as far as privacy is concerned. The status quo is unstable. If we do nothing, new technologies will give the government new automatic surveillance capabilities that Stalin could never have dreamed of. The only way to hold the line on privacy in the information age is strong cryptography. Cryptography strong enough to keep out major governments.**

**The government has a track record that does not inspire confidence that they will never abuse our civil liberties. The FBI's COINTELPRO program targeted groups that opposed government policies. They spied on the anti-war movement and the civil rights movement. They wiretapped Martin Luther King's phone. Nixon had his enemies list. And then there was the Watergate mess. The War on Drugs has given America the world's largest per-capita incarceration rate in the world, a distinction formerly held by South Africa, before we surpassed them during the eighties even when apartheid was in full swing. Recently, we've seen the images and sounds of the Rodney King beatings, Detective Mark Fuhrman's tapes boasting of police abuses, and the disturbing events of the Ruby Ridge case. And now Congress and the Clinton administration seem intent on passing laws curtailing our civil liberties on the Internet. At no time in the past century has public distrust of the government been so broadly distributed across the political spectrum, as it is today.**

**The Clinton Administration seems to be attempting to deploy and**

entrench a communications infrastructure that would deny the citizenry the ability to protect its privacy. This is unsettling because in a democracy, it is possible for bad people to occasionally get elected-- sometimes very bad people. Normally, a well-functioning democracy has ways to remove these people from power. But the wrong technology infrastructure could allow such a future government to watch every move anyone makes to oppose it. It could very well be the last government we ever elect.

When making public policy decisions about new technologies for the government, I think one should ask oneself which technologies would best strengthen the hand of a police state. Then, do not allow the government to deploy those technologies. This is simply a matter of good civic hygiene.

In addition to the human rights arguments, there are technological reasons why the current export control regime makes no sense anymore.

There has been considerable debate about allowing the export of implementations of the full 56-bit Data Encryption Standard (DES). At an academic cryptography conference in 1993, Michael Wiener of Northern Telecom in Ottawa presented a paper on how to crack the DES with a special machine. He has fully designed and tested a chip that guesses DES keys at high speed until it finds the right one.

Although he has refrained from building the real chips so far, he can get these chips manufactured for \$10.50 each, and can build 57000 of them into a special machine for \$1 million that can try every DES key in 7 hours, averaging a solution in 3.5 hours. \$1 million can be hidden

**in the budget of many companies. For \$10 million, it takes 21 minutes to crack, and for \$100 million, just two minutes. That's full 56-bit DES, cracked in just two minutes.**

**I'm sure the NSA can do it in seconds, with their budget. This means that DES is now effectively dead for purposes of serious data security applications. If Congress acts now to enable the export of full DES products, it will be a day late and a dollar short.**

**Knowledge of cryptography is becoming so widespread, that export controls are no longer effective at controlling the spread of this technology. People everywhere can and do write good cryptographic software, and we import it here but cannot export it, to the detriment of our indigenous software industry.**

**I wrote PGP from information in the open literature, putting it into a convenient package that everyone can use in a desktop or palmtop computer. Then I gave it away for free, for the good of democracy. This could have popped up anywhere and spread. Other people could have and would have done it. And are doing it. Again and again. All over the planet. This technology belongs to everybody.**

**PGP has spread like a prairie fire, fanned by countless people who fervently want their privacy restored in the information age.**

**Today, human rights organizations are using PGP to protect their people overseas. Amnesty International uses it. The human rights group in the American Association for the Advancement of Science uses it. It is used to protect witnesses who report human rights abuses in the Balkans, in Burma, in Guatemala, in Tibet.**

**Some Americans don't understand why I should be this concerned about the power of government. But talking to people in Eastern Europe, you don't have to explain it to them. They already get it-- and they don't understand why we don't.**

**I want to read you a quote from some E-mail I got in October 1993 from someone in Latvia, on the day that Boris Yeltsin was shelling his Parliament building:**

**"Phil I wish you to know: let it never be, but if dictatorship takes over Russia your PGP is widespread from Baltic to Far East now and will help democratic people if necessary.**

**Thanks."**

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## **Writing a First Program in Delphi**

**Copyright 1996 by Peter Neuendorffer**

**In the past I've written about the theory of programming. This article is meant to be a hands on look at how to write a simple Windows program in Delphi. You can rapidly add controls to your Window and give them processing by double-clicking the controls and writing code. You will need a working copy of Delphi 1.0 and the ability to use the help system.**

**In Delphi, when you are writing code, if you are using a procedure or variable that is part of the language library, you can position the cursor on the word and type F1.**

**Here is a description of how to create a simple program using Delphi. Our problem is to maintain a short list of words in alphabetical order. Before firing up Delphi, set up a directory on your hard drive for this project. Then bring up Delphi, and choose File/New Project. Form1 appears.**

**Click on File/Saveas and give your project a name. Specify the new directory you created. Delphi creates a single standalone .EXE with the project name + .exe.**

**There are many things you can do during design time. Often you can directly see your controls as you add them to the screen. The size and position of the controls can be changed with the mouse.**

**We may want to change the name of this form. Whenever referring to the form, we use it's name. To do this, the name property, and many other properties of the form may be edited with the Object inspector. Click once on the form, then press Alt-V-O to get the property editor.**

**Select color and click on the color for the form. This, like many other properties, can also be set from within your program. For example, to change the form's color to Aqua, we would use the line**  
**form1.color:=clAqua;**

**Windows Controls can be positioned and configured from the main form screen. The toolbar for controls is at the top - or where ever you drag it. Double click on the Button control and it will appear on the form. Put two other buttons on the form as well. Click on the first button once, then Alt-V-O for the property editor. Change the caption on the button. If you put an ampersand (&) before any letter in this caption, that is the accelerator Alt- hot key to activate the control when the program is running -at runtime.**

**Drag one button to the top right of the form. Change it's caption to &Close. Put the second button slightly to the left and below the first. Change the caption to A&dd. Put the third button at the bottom right. Change it's caption to &Delete.**

**We will use two other controls: the edit box and the listbox. Move the mouse slowly over the toolbar icons to get the help message naming each control. Position the edit box - this is for user data entry - at the top left even with the Add button.**

**Position the listbox at the bottom left. You should have something like**

	<b>Close</b>	
<b>edit box</b>	<b>add</b>	
<b>listbox</b>	<b>delete</b>	

**Design time is when you are designing your screens, and writing code. Run time is when the program is actually running.**

**This program will have two types of input. Adding words by the user typing in a word in the edit box and clicking on add. Also, selecting a word in the listbox and clicking on delete. Technically, another input would be clicking on the Close button to end the program.**

**Output is adding or deleting words in the listbox. To coordinate this processing, the main thing we need do is write code in the controls indicating what to do if the user clicks on each control. I'm assuming here you left the name of the form as "form1".**

**Additional processing is associating our word list with a file on disk so it will display the next time the program is run.**

**Filling in the code for the button events:**

**Close button:**

**Double click on the Close button. This brings up the procedure that will be run when the CClose button is clicked at the run time of your program. We say the button has been "fired" when it is clicked. This OnClose procedure only needs one line: form1.close. Since form1 is the main form for the program, the program will end when the Close button is clicked.**

**Properties of Edit box and listbox:**

**We now need to change one property in the edit box. Alt-V-O to get the object inspector. Set the maxcharacters to 15. This limits input to 15 characters. We may wish to size the listbox to be big enough for 15 character words. We do this by clicking on the listbox control and dragging the edges. Select the listbox and go to the object inspector (Alt-V-O). Select the sorted property and set it to true. That way our list will be maintained in alphabetical order.**

**Add button:**

**This is how the program adds words to the list in the list box. The code for this button is what processing the program will do on the current contents of the edit box (the word the user wishes to add.) We need to validate this data - see if it is acceptable, and prepare it for adding to the list. This involves trimming off leading and trailing blank characters - blanks that start or end the edit box contents. Also converting it to lower case. If the word is not already in the list, we**



will add it to the list. All this requires only a few lines of code, but it does require a subordinate procedure editstring to trim leading and trailing blanks.

So double click on the Add button to get to the procedure that fires when the user clicks the Add button. The name of the button may vary depending on the order you set up the buttons when placing them on the form.

The code for the add button looks something like this:

Note that when we put words inside braces, they are comments and are ignored by the computer.

```
procedure form1.Button1Click(Sender:Object);
  var {the var signals that we are going to declare the variable
      thestring}
      thestring:string;
  {-----}
  {sub} procedure editstring(var thestr:string); {this removes leading
    and
                                     trailing blanks and
                                     converts the string to
                                     lowercase}
  var
    found:boolean; {a true or false variable}
    x:byte; {a counter for the loop}

  Begin
    found:=false;
    for x:=1 to length(thestr) do
```

```

    if thestr[x]<>' ' {not a space} then
        begin
            found:=true;
            thestr:=copy(thestr,x,400);
            break;
        end;
    if not found then thestr:='' {all spaces}
else
    begin
        for x:=length(thestr) downto 1 do
            if thestr[x]<>' ' {not a space} then
                begin
                    thestr:=copy(thestr,1,x);
                    break;
                end;
        thestr:=lowercase(thestr); {convert to lower case}
    end;
{-----}
    Begin {main part of button click procedure}
        thestring:=edit1.text;
        editstring(thestring);
        if thestring='' then
            exit; {we are not going to add this because it is
                all blanks}
        if listbox1.items.indexof(thestring)<0 then
            listbox1.items.add(thestr);
    End;
{-----}

```

**Now what is all that? The main part at the bottom is executed first when the user clicks the Add button. The contents of the edit control are copied to our variable thestring using an assignment statement.**

**The := sign means that "the contents of the variable named thestring are replaced with the contents of edit1.text" We then call our editstring procedure to remove leading and trailing blanks. We pass by value the actual variable thestring to the editstring procedure. If the string is now empty (') then we exit without further processing.**

**Finally, we check that the word is not already in the list. A return in the indexeof of zero or greater would indicate it is in fact already in the list, so the final if statement checks for that.**

**The subordinate editstring procedure looks at the beginning and the end of the string in a loop. A for x:=1 to 6 loop counts x six times. The loop would be done 6 times, or until the code calls a "break" to break out of the loop. The lowercase() conversion comes with the language, so we do not have to write that.**

**Delete button:**

**Here our processing is to delete the current selected item in the list.**

**This procedure - remember to double click the button to get to the dock - is much simpler. We need only check that an item in the listbox is selected so that we do not delete "garbage".**

**The line is**

```
if listbox1.itemindex>=0 {the current selected line  
                        starts with zero}  
then  
    listbox1.items.delete(listbox1.itemindex);
```

**Restoring and Saving our list to disk:**

**Click on the form. Now get the object inspector with Alt-V-O. Select from the bottom EVENTS. We will be filling in code for two events: OnActivate, and OnClose. It is a safe bet for this program that when and only when the user starts the program, the OnActivate will trigger.**

**This event is where we want to read the list from disk. The OnClose event will trigger when the user ends the program. This is where we will save the list to disk.**

**Select each procedure from the event list in the object inspector for the main form. (Click on the main form and type Alt-V-O and select events):**

**form1.activate code:**

```
listbox1.items.loadfromfile('myfile.dat');
```

**form1.close code:**

```
listbox1.items.savetofile('myfile.dat');
```

**There is one hazardous open end we have left. The first time the**

program is run, there will be no file myfile.dat to load. This will cause an error. One solution is to check first if the file exists. This may not be the most elegant solution, but this is the one I use.

**form1.activate code:**

```
var
  fil:file;
  Iocode:integer; {stores the error}
begin
  Assignfile(fil,'myfile.dat');
  {$I-} {turn on error checking}
  Reset(fil);
  Iocode:=Ioresult;
  {$I+} {turn off error checking}
  if Iocode<>0 {not found} then
    exit; {get out without loading}
  Closefile(fil);
  listbox1.items.loadfromfile('myfile.dat');
end;
```

## **Running your program**

You must compile your program. Select Compile/Combile from the main menu (Alt-C-C). If all is not correct in your grammar, you may get error messages. Correct these as needed. The most common one is "unkown identifier" usually caused by spelling a variable incorrectly, or not declaring a variable you use (in the var block of the code.)

To run the program from within Delphi, select Run/Run (Alt-R-R).

**The big problem about writing this article for me is that a lot of it is second nature to me. Exploring the help system in Delphi can solve many of the problems. I also recommend getting books about versions of Turbo Pascal 6.0-7.0. A large part of the Pascal language is learning how to "think" in Pascal. A firm foundation in the base language can mean that you can write your own procedures to solve problems as they arise in the quest of better programs.**

*Peter is the author of a number of Windows shareware programs as well as being a regular [WindoWatch](#) contributing writer. He has the distinction of being the creator of the ever popular AliceA, a truly unique character! Peter's homepage is located at <http://www.channell.com/users/petern> and he can be emailed at [petern@channell.com](mailto:petern@channell.com)*

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## ***More on Internet Addiction!***

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**Contributed by Jon Helis**

**You know you are addicted to the Internet when:**

- \* You actually wore a blue ribbon to protest the Communications Decency Act.**
- \* Your bookmark takes 15 minutes to scroll from top to bottom.**
- \* Your eyeglasses have a web site burned in on them.**
- \* You refuse to go to a vacation spot with no electricity and no phone lines.**
- \* You finally do take that vacation, but only after buying a cellular modem and a laptop.**
- \* You spend half of the plane trip with your laptop on your lap and your child in the overhead compartment.**
- \* You find yourself typing "com" after every period when using a word processor.com**
- \* You turn off your modem and get this awful empty feeling, just as tho' you had just pulled the plug on a loved one.**
- \* You start introducing yourself as "Jim at I-I-Net dot net dot au**

- \* You step out of your room and realize that your parents have moved and you don't have a clue when it happened.**
- \* You turn on your intercom when leaving the room so you can hear if new e-mail arrives.**
- \* All of your friends have an @ in their names.**
- \* Your dog has it's own home page.**
- \* You can't call your mother...she doesn't have a modem.**
- \* You check your mail. It says "no new messages." So you check it again.**
- \* You refer to your age as 3.x. (Or maybe pushing '95?)**
- \* You have commandeered your teenager's phone line for the net and even his friends know not to call on his line anymore.**
- \* Your phone bill comes to your doorstep in a box.**
- \* You code your homework in HTML and give your instructor the URL.**
- \* You don't know what sex three of your closest friends are, because they have neutral nicknames and you never bothered to ask.**
- \* You name your children Eudora, Mozilla and Dotcom.**



- \* You laugh at people with 2400 baud modems.**
- \* You move into a new house and decide to Netscape before you landscape.**
- \* You tell the cab driver you live at <http://123.elm.street/house/bluetrim.html>**
- \* Your virtual girlfriend finds a new net sweetheart with a larger bandwidth.**
- \* You tell the kids they can't use the computer because "Daddy's got work to do" and you don't even have a job.**
- \* You buy a Captain Kirk chair with a built-in keyboard and mouse!**
- \* Your wife makes a new rule: "The computer cannot come to bed".**
- \* You are so familiar with the WWW that you find the search engines useless.**
- \* You get a tatoo that says "This body best viewed with Netscape 2. + or higher."**
- \* You never have to deal with busy signals when calling your ISP...because you never log off.**
- \* You leave the modem speaker on after connecting because you think it sounds like the ocean wind, the perfect soundtrack for "surfing the net".**

- \* Your wife says communication is important in a marriage...so you buy another computer and install a second phone line so the two of you can chat.**
- \* As your car crashes through the guardrail on a mountain road, your first instinct is to search for the back button.**
- \* The last time you looked at the clock it was 11:30pm, and in what seems only a few seconds later, your sister runs past to catch her 7am school bus.**
- \* Your hard drive crashes and you haven't logged on in two hours. You start to twitch. You pick up the phone and manually dial your ISPs access number. You try to hum to communicate with it. You succeed.**

**Jonathan Helis  
Baton Rouge, Louisiana**

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*By Way of Introduction... A Friend of a Friend!*

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*Russ Jenkins and I share a good friend in John M. Campbell. They, in turn, share a passion for all things pinball. This doesn't make either of them either frivolous or merely uncommitted computer dilettantes. Quite the contrary! Russ is getting an article ready for us and we thought you might find his relationship to computers as interesting a read as I did .  
lbl*

## **RUSS JENSEN'S *COMPUTER HISTORY***

I am a retired Electrical Engineer who got my degree from UCLA in 1958 and worked as a civilian employee for the Navy for thirty-six years. I was always interested in computers and took several computer courses in college, including machine language programming for the pioneer computer SWAC (National Bureau Of Standards Western Automatic Computer) which had been *retired* to UCLA several years earlier. That machine had a Cathode Ray Tube memory where data bits were stored as dots on a CRT.

Also during my college years (1954-1958) I was introduced to one of the earliest personal computers which was used in our Engineering Economics class by students having to solve an economics problem by creating a program (using an Interpreter) on it. That computer was the Bendix G-15, about the size and shape of a refrigerator and used vacuum tube plug-in modules and a magnetic drum main memory. The Input\Output consisted of a paper tape reader/punch and an IBM electric typewriter.

After graduating in 1958 I got a job at a Navy missile range in the Pulse and Digital Branch. There I first worked with another early personal computer, the IBM 610. That machine was about the size and shape of a desk, was partly electronic and partly relay, used an IBM typewriter, of course, for I/O. It was programmed by a punched paper tape which duplicated itself in order to perform extra passes through the code; subroutines, such as Trig functions, being programmed on a removable wired patch board. The 610, incidentally, was not made by the Computer Division of IBM, but by the Time Clock Division.

A co-worker and I were placed in charge of this machine which was used as an open shop computer facility where engineers and scientists could solve problems they were working on. The two of us, as our first junior engineering project, were asked to design and build an off-line paper tape punch control unit to use with the IBM 610. The pin-ball circuit experience I had as a kid helped in that project. The device we made I later purchased at a base surplus sale and still have lurking in the rafters of my garage.

Due to my past experience with the Bendix G-15, I recommended that that computer later be purchased to replace the IBM 610 as the department's open shop computer. This was subsequently done and my associate and I were again in charge of that operation. I was sent to both the machine language programming and hardware maintenance schools and became an *expert* on the machine.

When later a computer was needed to perform radar tracking calculations on a missile tracking ship, a G-15 was used and went to sea.

**Incidentally, I still have several instruction and technical manuals for both the IBM 610 and Bendix G-15. Also, Bendix Computer Division who made the G-15 was taken over by the newly formed Control Data Corporation in the mid-1960's and they produced the machine for a short time afterwards.**

**As far as main frame computers at the missile range were concerned, when I first started working there in 1958 they had a brand new IBM 650 which stored data using the bi-quinary number system. This was later replaced by a 709, using vacuum tubes, and still later by the new transistorized computer, - the 7090.**

**They also had a specially built large computer called the RAYDAC. It was a vacuum tube machine designed especially for the facility by Raytheon in Massachusetts. That computer had a mercury delay line main memory and used some very unusual magnetic tape units which had binary coded ink marks on the tape used for performing fast searches for data. That computer was dismantled in the early 1960's and our branch used some of the surplus electronic modules to build other equipment.**

**At that point in my career my direct involvement with computers came to an end as my assignments were involved with acceptance testing of input/output buffering hardware used on ships to interface with on-board computers. I did, however, witness changes in the UNIVAC military shipboard computers in the 1970's which used transistorized plug-in modules and magnetic core memories.**

**My next direct involvement with computers in my career came in the early 1980's when I volunteered to be trained in computer program**

**maintenance, again involving UNIVAC shipboard military computers. I learned about compilers at that time. Also at around the same time I had my first introduction to a time sharing system called SHARE 7 which ran on a UNIVAC AN/UYK-7 military computer. We could log onto that system from various terminals in our offices and access databases or use a word processor. I also could access time sharing functions on our main-frame DEC VAX computer.**

**A few years after that the organization I worked for decided to go to office automation. First they purchased a slew of Tandy TRS-80's distributing them around the offices. I attended at that time a course in VISACALC and was introduced to *the wonderful world of spreadsheets*. I also worked with a larger Tandy computer running UNIX.**

**Sometime later they decided to let a contract for a networked office automation system. The winning contractor was Hewlett Packard who provided a host of Vectra (286) personal computers all connected to an H.P. 3000 minicomputer, one per each department, which were interconnected to each other. Each department assigned a System Manager and I was selected as ours.**

**The system also consisted of standard software to run on the PC's including a word processor, a spreadsheet, a database, and a graphics package. An email system was also provided on the HP3000's accessible from the PC's. My main task was to help the secretaries, administrative personnel, etc., to learn how to use the system and it's software to better perform their duties.**

**After a year or so our department started slowly upgrading the PC's to 386's with Windows, etc.. Well, being only a support person, I had a little trouble getting a new machine, but I finally convinced the powers that be that if I was to help people who were using Windows I should have one myself.**

**Well, I was given a 386 with Windows, was sent to a one week class, and soon became an instant Windows expert. Our department also installed a LAN and our PC's were interfaced with that which led to the elimination of the HP3000 network. A year or so later I retired from the Federal Civil Service after we were offered a \$25K bonus to do so.**

*Among other talents Russ is a well known writer contributing regularly to pinball magazines.*

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## *Herb's Art Gallery*

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**This month Herb is offering us another video: a biggie, almost a 3.0 Meg \*.avi file. It is available for download on the WindoWatch homepage and is called flyby4.avi The download took about twenty minutes in the dead of the night with very fast T1 connections and a 33.600 modem. The magazine is showing the very tiny thumbnails, merely a taste of what the video offers. This is a crude enlargement of a single frame in the video. The video is Herb's best to date and I urge you to get it.**



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**We hope he's back for good!**

**Well, first let me apologize for my three month absence! I received a very generous offer from a firm in Honolulu, Hawaii to take over their Information Services Department and decided to leave private practice in California for the even sunnier shores of Oahu and the excitement and generous benefits of the corporate environment.**

**From this side of the table, however, it is even more evident how inept some vendors seem to be. We've received some rather incredible proposals so far; some of them from firms that claim expertise yet propose systems that are obviously doomed to problems from the onset. I can now see how a lot of companies get themselves into trouble by inexperienced IS managers who don't spot these flaws. They find themselves sucked in by low prices and just as suddenly find themselves left holding a solution that needs to be fixed.**

**Another thing that I've noticed, and maybe this is true for all IS people and I just never noticed, is that most of the vendors who pitch me products seem to have, as the thrust of their presentation, the primary concern of saving my job. Don't get me wrong, I find that extremely noble; it's just that I'm trying to find technology that will help my firm be more profitable and provide better service to our clients...while most of these vendors are trying to pitch me safe**

**solutions. Their selling point seems to be, "These choices may not be the best, but at least they won't get you fired"**

**Every vendor I meet wants to be my friend. They want to protect me from the corporate "black helicopters" that seem to be hovering outside my office window. Of course, that's just a metaphor; I don't actually HAVE an office window...and I'm pretty sure they don't let helicopters hover in the midst of downtown, but that's a whole different column.**

**My question is: What brought on this sudden paranoia? Could it be that computers have become too pervasive; that even the average home user has experienced plugging in a modem and connecting to America OnLine and now believes that Information Systems is easy? Any system failure or shortcoming must be the fault of the incompetent IS staff who obviously aren't very bright because administering Netware couldn't be any harder than finding your way around AOL?**

**Maybe it comes back to the vendors. As I said, about half of them proposed flawed systems and oddly, they were roughly the same group that said they were worried about saving my job; so go figure! Could it be that IS managers have bought enough of these flawed systems, and paid the consequences, so that now they find themselves ever vigilant against the dangers of the uninformed vendor?**

**Surely there must be a reason for this fear? Am I so naive as to think that if I work hard and bring in a solution that is well-suited to the task and really helps our firm do even better that I'm taking a chance with my job? It occurs to me that every day I walk in the door I take a chance on losing my job. Any number of things can happen, some of them beyond my control that could result in my being fired. So I move**

**boldly ahead, blind perhaps to the dangers, seeking the Holy Grail of successful technology. I tell myself that one of these days I'll be the one featured on the cover of The American Lawyer's Technology Magazine; Cheshire Cat grin on my face, comfortable slacks, casually posed on a desk in front of a 17" monitor.**

**I've always vowed that I never want to be so busy keeping my job that I don't have time to DO my job. But still, as I flip through my copy of "The Dilbert Principle" I wonder if all of these who are actually vendors know something that I don't. It's been a long time since I sat on this side of the desk, I think to myself, glancing furtively under my chair for a trap door or the chalk outline of the fellow who had this job previously. Does today's information system professional really have to live in constant fear of the pink slip? Has that ALWAYS been the way it is, or is it a new development? You tell me. E-mail me at [bms@hawaiilawyer.com](mailto:bms@hawaiilawyer.com) I'll be in the lounge with the classifieds...**

**Aloha!**

*Ben M. Schorr is the Director of Information Services, for now, for Damon Key Bocken Leong Kupchak in Honolulu, Hawaii. He is surrounded and outnumbered by a Netware LAN and Win95 workstations but expects WinNT Server reinforcements any time now. He can be reached at [bms@hawaiilawyer.com](mailto:bms@hawaiilawyer.com)*