Picking Operating Systems

“Making a decision on your computer's basic configuration.”

by Pete Choppin

At the most basic level, the computer operating system provides the instructions or configurations for the hardware to communicate and operate with the computer software. More than this, operating systems provide a software platform on top of which application programs can run. The applications must be written to run with a particular operating system. Your choice of operating system, therefore, determines to a great extent the applications you can run. Let's discuss the pros and cons of the more common operating systems.

Microsoft Windows

Microsoft Windows—the most popular operating system—is easy to use and familiar. It is standardized to the point where specific requirements must be met in order to obtain the "Designed for Windows" status. Even with high requirements, developers are eager to obtain this status because of the value and recognition that comes with it. More and more software developers write their applications to Microsoft standards, creating a very recognizable, easy-to-use interface that helps those less comfortable with computers to work with more applications.

But along with this popularity comes a price, and not only in dollars. Windows often comes under security and virus attacks because of wide use and popularity. Microsoft often releases its products in anticipation of releasing security updates to correct security vulnerabilities, so until Microsoft can patch its OS sufficiently, stability and security can be a problem.

It seems that Microsoft has this annoying habit of releasing products that seem to be not quite ready for prime time. Ever since the beginning versions of Windows, it appeared that for every release of Windows, a subsequent sequence of service packs and security patches always followed. Eventually, a relatively secure OS is achieved, but this can sometimes take months or years.

When Windows XP was released, some of the very same complaints came out that were said about Vista. It was too slow, looked like a cartoon OS, too much like a Mac. It reminds me of those PC-versus-Mac commercials that are out (which I love, by the way) that depict the PC, which has the OS that is just re-released every few years with the same promises and the same complaints every time. I suspect the same thing will probably happen with Windows 7 once more users and companies become more familiar with the new system. Microsoft has all but admitted that Vista was little more than an embarrassing mistake, and that Windows 7 is its response to the backlash that ensued. Windows 7 will be the standard for home and business computer platforms just like the previous releases of Windows.

Macintosh

The MacBook Pro is the leading edge of innovation and is finally giving the PC a run for its money. But you cannot separate the software from the machine, and the fine line between form and function is almost invisible. I don't think it is possible to talk about the Mac software without first describing the hardware.

Instead of building the case out of a bucketful of individual pieces (case bottoms, tops, interior frames, sub assemblies, support structures, etc.), Apple instead used a single base of aluminum, which is then machined to produce a one-piece, unibody design. That's the simple secret: The MacBook Pro's case is a single piece of aluminum. The result is a very strong, very lightweight notebook.

Everything else we know—the Macintosh has a solid, secure operating system built on the openBSD Unix-like architecture in the unique and innovative Apple way. The question isn't whether you should get a Mac; it's which size do you want?

Be prepared to pay a premium for this innovation. It doesn't come cheap. A MacBook Pro will cost twice as much as a PC, comparing "apples to apples" (shameless pun).

Linux

Linux is perhaps the most misunderstood of the operating systems. Maybe it's the mysterious nature of the software or the stoic, no-nonsense attitude Linux gurus seem to carry, but Linux should not be ignored as a viable alternative to commercial operating systems. Microsoft isn't ignoring Linux. Last year it made several efforts to bridge the gap between Linux and closed-source software. The jury is still out on whether there have been any positive results.

The question is, "Can Linux be a real desktop solution for business and home users?" Time and time again, Microsoft shows that it is not a question of money, but of usability and, let's be honest—Linux is struggling to stay in the race. If it were not so, consumers would not continually return with wallet in hand eager to purchase the next release of Windows, even though there is a free alternative available. You simply cannot sell that many products over and over again without offering some value to the consumer, but that's an argument for another article.

So where does that leave Linux? Actually, many IT professionals, such as myself, still hold to the belief that Linux is improving and getting easier all the time. Eventually, much of the world will be using some form of Linux and we, the IT professionals, will be there to support it.

32-bit Versus 64-Bit Operating Systems

Here is a short list of what can and cannot support 64 bit:

32-bit

• Windows XP (Home and Professional) and all prior versions of Windows
• Windows Server 2003

64-bit

• Windows XP Professional 64-bit Edition
• Windows Vista*
• Windows 7*
• Windows Server 2008
• All Linux and Unix-like systems*

• Mac OSX (Snow Leopard) systems*
* These systems also support 32-bit

Rather than going into a long, boring, technical explanation of the differences between 32-bit and 64-bit architectures, it may be more helpful to discuss the pros and cons of using one over the other, or why and when you may want to use these operating systems.

32-bit operating systems have been the most widely used for many years now. Primarily this is a limitation of application software. There are still just not very many 64-bit applications available, nor are there very many 64-bit drivers written to support the hardware. So the availability of software to take advantage of the 64-bit platform is quite limited for the average user.

Businesses and organizations that use specialized hardware and software, such as scientific groups and universities, may be able to take advantage of 64-bit operating systems and hardware. For example, we run Microsoft Exchange Server 2007, which *requires* 64-bit architecture, both hardware and software, and therefore in order to install the server we had to purchase a completely new and expensive system.

Fortunately, the average user does not need to make this kind of a purchase. However, there are always more applications being written for 64-bit architecture. If you are anticipating taking advantage of this in the future, it may be worth investing in the hardware and the operating system to support it.

What to Look for in an Operating System?

When considering an operating system, it is most important to think about how you intend to use the computer. After deciding your computer's primary function, you will need to decide what kind of networking and administrations tools you need and the level of security you desire.

Below are what I consider essential criteria used to evaluate operating systems:

Application Software

The number-one consideration in which operating system you pick is which applications it will run. Other than price, one reason Windows maintains a lead over Macintosh is because of the massive amount of software available for Windows computers. Even Mac owners will often install Windows in a virtual machine on their computer to run Windows software. The same is true for Linux, although most Linux software tends to be free.

Home and Office Use

Assess the operating system in terms of how well it supports general home use; for example, it should have basic Internet security and be easy to use. The OS for office or business use needs sophisticated Internet security and the capacity to network, and ought to include administration tools.

Multimedia Use

Some operating systems are designed to entertain; these can play/record television, burn DVDs, and can support HD video and music without supplementary software.

Security

Many operating systems should provide frequently updated security features such as firewalls, pop-up blockers, antivirus and anti-spyware software and more. Operating systems for business or network use require additional security and administrator tools.

Networking

Business and home operating systems can be used in a network. These systems should offer administration tools and security.

Ease of Use

All operating systems should be straightforward. Menu systems, controls, functionality, device and settings should be placed in logical and easy-to-find locations. Help systems and search functions should be useful and readily available.

Technical Help/Support

Since operating systems perform numerous functions, above-average support is needed. Is there a support network you can turn to? Does the online help function provide useful support? Does the company or group where you obtained the system offer any support?

Resources

Windows Secrets—A non-biased newsletter that provides tips for running Windows as well as advisories on the latest security updates. Free weekly news with paid optional memberships available.