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**On the Importance of Good User Interface Design**

**By V. Berba Velasco Jr.**

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It seems obvious, but it's often ignored. A good user interface design can spell the difference between acceptance of a software product and its failure in the marketplace. If the end-users find the software to be too cumbersome or difficult to understand, then an otherwise excellent product could be doomed to failure. The developer's goal should be to make the software as professional-looking and easy to use as possible.

Sadly, I've found that a great many companies—especially small or highly specialized software firms—pay little attention to the mechanics of good user interface style. "As long as it works, that's what matters!" seems to be their mantra, with little regard for the inconvenience that this imposes on the user.

Thankfully, that's not how we operate at our company. Our team of developers invests considerable effort into making out user interfaces as intuitive and foolproof as possible, since we know that this is something our customers would appreciate. I've often commended my teammates for recognizing that excellence is worth pursuing.

Going back to the topic... I can't remember how many times I've encountered software that was designed to work, but with little regard for ease of use. If the software forces the operator to constantly consult a manual or a cheat sheet, then that's a pretty good indication that the user interface needs improvement. Similarly, the software should allow the user to perform tasks quickly and efficiently, without sacrificing power and flexibility. This seems intuitive, and yet these considerations are so often lacking.

The sad part is that these shortcomings can often be cured using a few simple guidelines. For example, it helps if the user can enter data using buttons and list boxes, instead of typing it in by hand. It helps if the software provides pop-up dialog boxes, to guide the user along the way. Even the judicious choice of icons and other graphics can turn a steep learning curve into a short and gentle slope.

For that matter, even such trivial matters as spelling and grammar deserve attention. Poorly phrased instructions can severely hinder an operator—and even if they don't, they do reflect poorly on the developers of that application.

There is much more that can be said about the mechanics of good user interface design, but that's a topic on which entire book can be (and have been) written. Suffice to say that a company that strives for excellence should pay close attention to the elements of software usability and flexibility. These are critical elements of software excellence, and they are worth pursuing.

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### **Linux Runlevels**

**By Vinu Thomas**

#### **Linux Runlevels by Vinu Thomas**

Linux systems today generally use eight runlevels. Runlevels define what services or processes should be running on the system. The init process can run the system in one of eight runlevels. The system runs only one of the eight runlevels at a time. The main runlevels are from 0 - 6. Here's what each runlevel is for

Runlevel 0: Halt System – To shutdown the system

Runlevel 1: Single user mode

Runlevel 2: Basic multi user mode without NFS

Runlevel 3: Full multi user mode (text based)

Runlevel 4: unused

Runlevel 5: Multi user mode with Graphical User Interface

Runlevel 6: Reboot System

Runlevels 1 and 2 are generally used for debugging purposes only, and are not used during normal operations. Most desktop linux distributions boot into runlevel 5, which starts up the Graphical Login Prompt. This allows the user to use the system with X–Windows server enabled. Most servers boot into runlevel 3, which starts the text based login prompt.

## On the Importance of Good User Interface Design

Linux runlevels can be changed on the fly using the init tool. If you want to switch from text based operations to the Graphical Interface, you just have to type in 'telinit 5' in the root prompt. This will bring up the Graphical Interface in your system.

Each runlevel can be configured by the system administrator. The "/etc/inittab" file has information on which runlevel to start the system at and lists the processes to be run at each runlevel.

Each runlevel has its own directory structure where you can define the order in which the services start. These directories are located in the /etc/rc.d/ directory, under which you have rc1.d, rc2.d, rc3.d.... rc6.d directories where the number from 0 through 6 that corresponds to the runlevel. Inside each directory are symbolic links that point to master initscripts found in /etc/init.d or /etc/rc.d/init.d.

You can also change the runlevel at boot time. If your system uses

LILO as the boot manager, you can append the runlevel to the boot command :

LILO: linux 3 or

LILO: linux 5

If your system uses GRUB, you can change the boot runlevel by pressing the `e' key to edit the boot configuration. append the runlevel to the end of the boot command as shown:  
kernel /vmlinuz ro root=/dev/hda1 5

Vinu Thomas is a consultant on Web design and Internet Technologies. His website is <http://www.vinuthomas.com>. You can read more articles on Linux @<http://www.vinuthomas.com/sections-listarticles-6.html>



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