Feature Article:

Linux – The Train is Leaving the Station – All Aboard!

By Richard Dolewski & Garth Tucker

Maybe it's just us, but we're starting to get this funny feeling about Linux. It seems like every time we hear the word "LINUX" there is a huge amount of media attention, and everyone always says the same thing. "Linux is now ready for prime time," or "Enterprise customers are finally starting to take Linux seriously."

Richard Dolewski

We want to know where this product came from? Can you call it a product if it's free? Is it really free? How can anything free be a real solution for my business? Confused? Join the crowd. Join the paying for software crowd. Who is paving the way for all the companies that are coming to the Linux and Open Source parties?

The History

Linux has been around since 1991 when **Linus Torvalds**, while a student at the University of Helsinki, decided to write a UNIX operating system for his PC. He did not write it alone however, he used the Internet to ask other people for input into its design and build. The source code was made available to anyone who had the knowledge to make changes, and is still a "free" Operating System. You can download Linux free over the Internet from the Linux website, http://www.linux.org. However, the files are large and you need to work hard (this is a relative term) at the installation. The key is that the source code can be downloaded and you can make changes to suit your business or personal needs. The other option or preferred one is through a distribution on CD-ROM from companies such as SuSE, Red Hat or TurboLinux. These have easier installation applications and contain other packaged features to make it more viable for business or personal use. More importantly IBM has also embraced these solutions.

Linux is Yours Because the Price is Right !

Let's talk about "free"... Linux is a UNIX-like operating system kernel that is freely distributable. The kernel does the following:

- Manages multiple processes that may run on the system at any time
- Schedules multiple users
- Controls the system security
- Controls the input and output systems of the machine, for example, printers and monitors
- Manages the disks connected to the system
- Controls access to the files on them

Linux Rules of Engagement

The words freely distributable are often seen in relation to Linux. What is meant by freely distributable? Linux is not freeware or public domain. It is covered by the GNU General Public License, or GPL (see: http://www.gnu.org/copyleft/copyleft.html.)

This means that standard international copyright laws protect the software and that the author of the software is legally defined. The GPL allows people to modify free software, and distribute their own versions of the software. However, any derived works from GPL software must also be covered by the GPL. In other words, a company could not take Linux, modify it, and sell it under a more restrictive license. If any software is derived from Linux, that software must be covered by the GPL as well. The Free Software Foundation is a foundation dedicated to eliminating restrictions on the right of people to use, copy, modify, and redistribute computer programs.

Garth Tucker

Everybody has access to the Linux source code and volunteer software development on the Internet is standard, with central kernel development coordinated by Linus Torvalds. Many others coordinate other pieces of the OS. Peer reviews play a large role in Linux development for such things as: security and performance.

The thing to keep in mind is that the license cannot change, so any changes you make, as well as your name, will stay in it forever.

How Can LINUX Survive Without Cash Flow ?

All this leads to an interesting question, how do Linux distributors make money? They make money from the service offerings they have, as well as from any applications they write and market.

The first commercial distributions of Linux starting appearing in 1992 and included such things as an installation program and various tools and utilities, most of which were migrated from UNIX. Commercial Linux distributions generally include:

- Kernel
- X Window system and window managers like GNOME and KDE
- Web servers, e-mail servers, FTP server
- Installation & system configuration support
- Third-party applications
- Development tools

How has IBM embraced this

On iSeries, Linux was announced in April and delivered in May of 2001 and runs in a partition. There are some restrictions as to where it can run and how much processor is required (i.e., a full or partial). I won't go into a listing of which iSeries servers can run Linux here, as this information is readily available from your iSeries Business Partner.

What are the benefits of running Linux on your iSeries? This is open for debate due to the fact that it's still new to the iSeries and solid Total Cost of Ownership numbers are not readily available for this platform at this time. On the surface, it seems very appealing to people wishing to eliminate Intel servers or a firewall, and these are valid reasons to take a look at Linux.

On a higher level, what would lead me to look at Linux on iSeries would be such things as IBM's investment to support Linux on iSeries. This means IBM support will be readily available through 1-800-IBM-SERV as well as from your Linux distributor. The fact is Linux will allow you to take advantage of a new generation of applications. It will enhance iSeries flexibility by enabling another application environment. The iSeries is now able to capitalize on the open source movement, leverage the Linux virtual worldwide development team and when an iSeries shop includes Linux in its repertoire, it will encourage a broader skill base to deliver iSeries based solutions. Another distinct advantage is how iSeries can leverage other IBM hardware, software, and services investments in Linux.

Consolidation

Consolidation is a term that is used frequently, but somehow is rarely put into practice due to squabbling over "turf". What about the mistrust of different platforms amongst the users or administrators of the various platforms? In the case of Linux on the iSeries, this should not be an issue. The Linux admin would still have access to the Root Linux user to administer the system and would not have to go through OS/400 commands to makes changes once the server has been varied on.

On an iSeries, several Linux servers can be setup – in the case of the larger systems; up to 31 Linux partitions can be created and run simultaneously. Now this is leveraging your hardware investment! This also opens the door to share resources between OS/400 and Linux or between Linux partitions with dynamic resource movement.

You can "tune" your servers for times when they have active workloads and reduce processing power when it is not required and add it elsewhere, thus reducing the cost of managing and supporting a heterogeneous environment.

Linux covers the whole spectrum of computing which includes:

- Embedded devices
- Laptops
- Desktop systems
- Development systems
- Small and large servers
- Megaclusters/supercomputers

The Good and the Bad News

This is not to say that Linux will someday take over everything. There will always be a place for "Best of Breed" software, and Linux's use of open protocols means its advantage is always in ease of use, never in locking out the competition. Face it, it's a Windows world.

Whether you use Linux on your home system or at your job, the chances are that you will still have to work with Windows users and their systems; and more importantly, that you exchange data with them on a regular basis. The trick will be to turn them into Linux users, too. Linux and Open Source are becoming inevitable forces in the world of IT. Personally, I would have never believed it. Then again, neither did IBM!

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