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# Market Roundup

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## Linux Laptops

*By Joyce Tompsett Becknell*

This week at Linuxworld in San Francisco, Lenovo and Novell announced the first Linux-based ThinkPad mobile workstations, which will run Novell SUSE Linux Enterprise Desktop 10 (SLED 10). The Thinkpad T60p laptops are based on Intel Centrino Duo mobile technology and are the result of a two-year research and development effort between Lenovo, Intel, and Novell. The systems are not targeted at consumers nor even at hardcore Linux users; they have been designed specifically for electronic engineers engaged in integrated circuit and board-level design who use numeric intensive computer-aided design (CAD) or electronic design automation (EDS) applications in a mobile environment. Enterprise customers will give configuration preferences and software requirements to Novell, which will build a custom version of SLED 10. Novell will send the operating system to Lenovo which will install it and any other software required onto the laptops and test them to make sure the system works with all the software installed. Lenovo is currently certifying engineering design applications from companies including Cadence, Synopsys, and Mentor Graphics. Novell is now investigating other industries with heavy Linux usage such as automakers and financial services for future solutions opportunities.

Until now, to install Linux on a notebook, the user had to purchase a laptop with Microsoft installed, uninstall Microsoft, and then install the preferred Linux distribution. One of the things Lenovo has offered mainstream users is the ability to purchase the T60p laptops with empty hard drives and the ability to purchase support for SLED 10 from Novell for \$50 a year. This allows mainstream users a chance to get Linux desktops without having to pay Microsoft, and it allows Lenovo to offer maximum flexibility to customers with minimal risk to themselves. Because the Linux market is fragmented by geography and industry, it is difficult for hardware vendors to select a distribution on which to standardize. It's also difficult to justify the expense of taking on another operating system if the market share numbers do not easily pan out, which Linux on workstations and desktops has yet to do. Because Intel has helped in development and is one of the key initial customers for this project, Lenovo and Novell can treat this as a pilot program that will help them develop products designed for target markets. A not insignificant portion of the portable market was once handled this way until vendors went to mass-market portables. It may be that for Linux, this model of customized systems will become the predominant model with vendors providing operating systems integrated with applications to markets with large enough purchase volumes.

For design engineers, this announcement provides a couple of new opportunities. First, it brings much of the power of workstations to the mobile environment, allowing designers to unchain themselves from desktop systems. On the other hand, it also allows them to have one system for both design applications and for normal office tasks such as email and other corporate applications. These new laptops are designed to be slim but powerful portable workstations that engineers can use in multiple environments. If Lenovo and Novell can get this right and Intel can exploit the capabilities these systems offer, then the success can be replicated in more industries as more user groups begin to exploit the benefits of customized systems for their application environments.

## Virtualization and Open Source Advances at LinuxWorld

By *Tony Lock*

“Virtualization” and “Open Source” are two of the hottest terms in the IT lexicon today. At the LinuxWorld conference held this week in San Francisco there were significant developments on both of these areas. At the show the OpenVZ project released its operating system-level server virtualization software in the form of a kernel build for Red Hat Enterprise Linux 4 (RHEL4). The OpenVZ project supplies software built on Linux that permits isolated, secure virtual environments to be created on a single physical server. The software now allows OpenVZ environments to be called by designated name rather than by numeric ID and, more importantly, it is now possible to set the number of processors available to specific virtual environments allowing for more granular performance tuning. In addition OpenVZ now includes support for Virtual Ethernet devices allowing network device creation inside the environment. The software now supplies Checkpointing and live migration capabilities permitting virtual environments to be stored on disk and restored to another physical server.

Also at LinuxWorld, SWsoft announced its plans for the future development of its Virtuozzo operating system-level virtualization software. Chief among these is that all future releases of SWsoft’s Virtuozzo management solutions will include support for virtualization tools supplied by other vendors. The idea is to allow data center managers to administer various virtualization technologies from a single management tool. Later this year the company plans to add support for VMware virtual machine environments and will then add support for Xen and other technologies soon thereafter.

The development of the OpenVZ project is indicative of the fact that there is continuing demand for open source solutions to deliver mainstream IT capabilities. Both of these announcements show that virtualization is now moving into real world usage and out of the test/trial arena. There is no doubt that virtualized environments offer many advantages to organizations, not least of which is the ability to vastly increase the typical utilization rates previously achieved on Intel servers with appreciable net benefits in terms of lowering cost of ownership and delivering more highly available business systems.

However, “virtualization” is not a simple one-step project. To achieve maximum benefits the routine administration of virtualized environments must be well managed, and it is here that the development of tools such as SWsoft’s Virtuozzo is important. The demands placed on the workloads of IT administrators are not likely to decrease anytime soon and good management tools are an essential requirement. With Virtual machines moving into everyday use there is a profound need to administer them effectively from a single console if system performance and security are to be maintained and if management costs are not to escalate rapidly.

## IBM and Open Source beyond Linux

By *Tony Lock*

At LinuxWorld this week IBM announced its road map and blueprint to advance key developments in Linux and Open Source business models. Scott Handy, Vice President Linux and Open Source, IBM, revealed eight open source initiatives beyond Linux that are targeted to help accelerate the adoption of open standards and extending existing product lines in order to reach new potential customers. At the same time IBM announced new work that it is undertaking with the open source community to improve the development of general Linux kernel functionality, expanding its Linux focus around virtualization and Cell processor technologies. In addition IBM will work with the open source communities to extend Security-Enhanced Linux and security. Exploiting its extensive experience in with Linux, Eclipse, and Apache, IBM plans to utilize open source business models and a new collaborative development blueprint to target eight open source business opportunity areas beyond Linux. The eight new opportunities include:

- Client Side Middleware supporting the Eclipse Rich Client project for hosting cross-platform applications.
- Development Tools built on Eclipse.
- Web Application Servers based on Apache open source projects such as Geronimo.

- Data Servers building on the open source Apache Derby and no-license fee IBM DB2 Express-C.
- Systems Management, including the open source Aperi storage project.
- Open Hardware Architectures promoting community driven collaborative innovation with Power.Org and Blade.Org.
- Grid Computing with expanded support for Open Grid Services Architecture and the Globus Alliance.
- IBM Research/Business Consulting and Technology Services enabling customers to innovate with open source solutions.

These announcements should help promote the fact that Open Source encompasses more than just the Linux operating system. Open Source is in many respects much more a philosophy than a product or range of solutions. It is interesting to see that the areas being addressed here cover many of the core IT areas that provide fundamental support to business operations and demonstrates how broad is the scope of open source developments efforts.

It is equally important to recognize that IBM is also working with the open source communities to help define and develop business models that work with open source solutions. This is an area in which there is still considerable latitude for innovation. For Open Source to thrive to the fullest it is essential that economically sound and sustainable communities develop, and these must be based not just around open source technologies but around acceptable open source-compatible business models. IBM has been one of the major supporters of open source and it is good to see the company taking efforts to ensure that as wide an audience as possible understands the full potential of "Open Source." It is time for the Open-Source-equals-Linux misconception to fade away.

## Topio and Network Appliance Data Combine Solutions

*By Susan Dietz*

Topio, Inc. recently announced the integration of its Data Protection Suite (TDPS) 3.0 with Network Appliance Data's ONTAP 7G and FlexClone. The combination of the two choices is intended to offer advanced functions for data management. Those functions include non-disruptive, continuous data replication and on-demand cloning for production support applications such as development and testing, reporting, data analysis, point-in-time recovery, or archiving. The stated goal of the new solution is to enable continuous replication from any production storage to NetApp storage for SAN or IP SAN, thus eliminating application disruption during the copy process and allowing customers to avoid duplicating production storage in the production support environment, an occurrence that is admittedly expensive. In the production support environment, the combined solution should maintain a current, 100% consistent data image, while at the same time leveraging NetApp Data ONTAP to deliver instantaneous cloning of data sets; all this while consuming virtually no incremental storage. Topio and Network Appliance Data decided to utilize a point-and-click interface so that customers can have a single point of control to manage replication and clone creation and retention for up to 256 clones per NetApp system. These capabilities' stated goals are to significantly reduce capacity requirements while at the same time removing the operational barriers to delivering on-demand copies of always-current data.

Data that is virtually inaccessible is virtually useless. All companies need to access their archives at some time or other, so being able to do so quickly and easily cuts down on the frustration and labor hours of the people who have to retrieve it. However, for most SMBs, unless they are highly data-centric, Topio and Network Appliance Data's solution most likely would be overkill. Large-scale businesses are probably the target audience, and they may just like what they see here. More efficiency means less overhead, and the same bit of data being stored in at least two different places is admittedly highly inefficient. If the Topio and NAD solution lives up to its promises, it will likely be a cost-effective solution, and one that is likely to be implemented by enterprises of all ilks.

The world of data storage may not be glamorous, but it is vitally necessary, and thanks to the attention it is receiving from today's hot shot programmers, some of the world's cutting edge technology can be found in the data storage arena. It's a quiet but impressive technological growth area. Searchable databases are the very least

that a business needs to stay competitive, no matter the size of the business. The days of a simple tape backup are most likely soon to be long gone, and are probably going to stay gone. We might all count ourselves lucky in the fact that “reverse progress” just doesn’t happen. The cutting-edge data storage solutions of today will in all probability become available to the SMB of tomorrow. We are looking forward to it.