



TechTalk

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At 24, Linux Has Come Out of the Basement

Linux is a very functional operating system." It led to the collapse of the infrastructure decision debates of many IT shops," said Guy Smith, chief strategist for Silicon Strategies Marketing. "Before Linux, long-term choices concerning the OS, database, development language, and more divided IT shops -- and the resulting incompatibilities led to dysfunctional applications."

Happy Birthday, Linux Project – last week you turned 24.

The Linux OS has grown everywhere. Its code and the open source model are found worldwide. People often use Linux without knowing it -- for example google search, buying metro tickets, surfing the web. Linux powers all of that infrastructure. Linux travels worldwide on airplanes, and it's embedded in many of the smart devices that bring ultra-convenience to our homes and cars. It runs our WiFi routers and our Android phones and tablets.

Linux drives our HDTV sets and set-top boxes. Linux now is regarded as the de facto operating system of choice by manufacturers of electronic toys, video and telephone equipment, and remote controls. Linux gives consumer product manufacturers a stable operating system with no royalties to pay and no ownership hassles. Not having to cater to a controlling corporate entity gives manufacturers a tremendous marketing advantage.

Linux has become the first OS choice in the manufacturing and database industries, and that can be credited in large part to its solid reliability and its ability to scale and innovate. Linux is a very functional operating system.

The Linux OS for desktop and laptop computers has a growing user base scattered around more than 600 Linux distributions. While some lament the lack of a bigger OS takeover, steadfast Linux OS users cling to it passionately.

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Lenovo Changes the Chromebook Game



Engineered to withstand accidental drops, spills, and sudden shock, the Lenovo ThinkPad 11e Chromebook is a good match for the classroom or for users who spend lots of time on the road. Powered by a quad-core Intel Celeron CPU and 4GB of RAM, this 11-inch Chromebook delivers a typical school-day's-worth of battery life and can handle multiple video and audio streams without a hiccup. However, it's a bit heavier than most 11-inch Chromebook.

The Lenovo ThinkPad 11e Chromebook may cost a little more than most other Chrome OS laptops, and it is a bit heavier, but it is built like a tank and is well-suited to classroom duty and life on the road. Its quad-core processor handles multiple audio and video streams with aplomb, and its keyboard is standard ThinkPad quality. That said, a touch-screen would help take the sting out the \$340 price tag.

The Future is Now

Aquatip Will Give a New Lease of Life to People Without Fingers

A prosthetic finger named Aquatip, designed by Leticia Cervantes is here to change the way people without fingers live. This very useful piece of equipment that comes filled with a liquid bladder with exposed ends will let the user get a sense of touch. This bladder works on Pascal's principle because of which the liquid will travel to the other end because of the pressure on one side. Such a situation will create a bubble which will cause sensation after it moves ahead and touches the skin.

It comes attached with a security strap that has been crafted out of rubber latex. This strap momentarily is fixed on the palm and top of the hand after it envelops around the remaining finger. Simply washing the adhesive will reactivate Aquatip, hence no extra effort or expenditure is involved in it. This equipment with a liquid bladder can also be used by those who have some difficulty with finger movements. The prosthetic finger will help people with restricted finger movement or those without fingers to perform all tasks with its capability to make them feel.

Aquatip has been specifically designed for those who have a problem related to their fingers. It can be any kind of problem, like difficulty in movement or even for those who have lost their fingers because of some accident. This restricts them from grasping things with all the strength which can be solved by using a prosthetic finger.

People who don't have fingers face a lot of trouble while writing and eating. It becomes difficult for them to hold a pen, spoon, knife or fork. Besides this they also lose all the strength required to grasp things, hence probability of holding objects properly without their chances of falling down lessens. At times a state of missing fingers may also lead to some psychological trauma. But the presence of prosthetic fingers will help them lead a normal life, hence kicking aside the ordeal faced on an everyday basis.

The prosthetic finger with a liquid bladder will definitely help people having any kind of problem related to fingers. This tool comes with a security strap that can be effortlessly covered around the rest of the finger and further can be fastened on the top of the hand plus on the palm temporarily. The inside of a prosthetic finger comes filled with a liquid bladder that has exposed ends. Once the skin around the existing portion of the finger is moved, it in turn activates the movement of the prosthetic finger. The prosthetic finger moves as a movement sensor present on it gets signals when the original finger sets into motion. Hence, it helps people perform tasks without much difficulty.



MIT 3D Printer Prints Up to 10 Materials at Once

Whether you're building a footbridge or a sports car, 3D printing can be a cheap and easy way to obtain the materials you need. But it has its limits.

Most 3D printers use one material at a time, though some pricey machines have dabbled upto three materials. But a team of researchers at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) developed the MultiFab 3D printer, which prints up to 10 different materials at once.

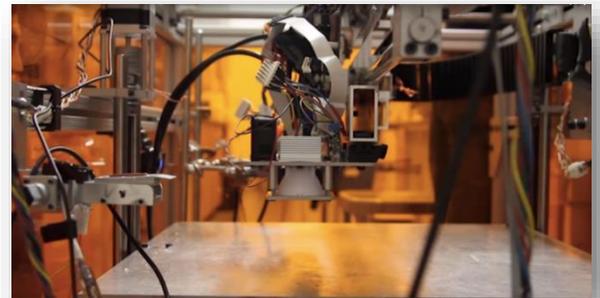
Developed by CSAIL from low-cost, off-the-shelf components for \$7,000, the machine is meant for various applications, from consumer electronics and micro-sensing to medical imaging and telecommunications. The team also plans to experiment with embedding motors and actuators, making it possible to print more advanced 3D electronics like robots.

"This platform opens up new possibilities for manufacturing and giving researchers as well as hobbyist's alike power to create objects that have previously been difficult or even impossible to print." CSAIL research engineer Javier Ramos said in a statement. Using 3D-scanning techniques, the MultiFab can self-calibrate and self-correct. It also allows users to embed complex components (i.e. circuits and sensors), directly onto the body of an object; the researchers, for instance, printed lenses on top of LEDs.

Unlike most current 3D printers, the MultiFab can produce and finish a product—moving parts and all—in one fell swoop: Place an iPhone into the printer, and it will spit out a perfectly sized case, the team said.

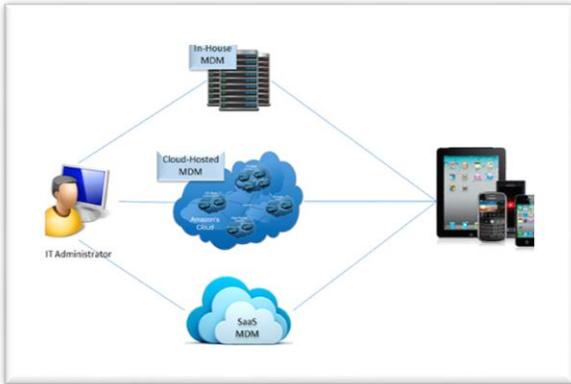
While the CSAIL team has no expectations of their MultiFab 3D printer being installed in customers' homes, they do hope it can be put to use by researchers, manufacturers, and other businesses.

"Picture someone who sells electric wine openers, but doesn't have \$7,000 to buy a printer like this," Ramos said. "In the future they could walk into a FedEx with a design and print out batches of their finished product at a reasonable price. For me, a practical use like that would be the ultimate dream."



Technology Focus

How to Safely Implement Mobile Device Management (MDM) for Your Business



The enormous popularity of mobile devices and the rich app ecosystems to which they give access has opened up tremendous opportunities for businesses. Merchants can now use their mobile phones to collect credit card payments. Customer service support can be streamlined using iPads, and owners can respond to email queries after hours. Field agents can be more efficient and responsive, using their mobile devices to connect back to the rest of the office and keep up to date. However, these great abilities come with a corresponding great challenge: How can a business manage the security of all the devices on which their data can live?

Consider the Challenge: The business has to figure out how to address the myriad security concerns accompanying these mobile devices with an overworked IT staff and a constrained budget. Greater mobility means correspondingly higher risks for data theft and leakage, especially if the device is lost or stolen. A compromised device can also act as a backdoor to the corporate network. Considering the amount of information being accessed and saved on personal devices, it's clear that some level of management is

absolutely critical. Even if a business doesn't support personal devices, employees are likely accessing their corporate webmail on their own personal phones. That can't be ignored. And if the business owns all mobile devices intended for employee use, the IT staff still has to be able to keep track of who has the device, what is installed on it, and how it is being used—a daunting task. Businesses have to define bring-your-own-device policies, as well as selecting and deploying a mobile device management (MDM) platform. A bit of judicious planning can simplify mobile management and give IT control over what devices and apps are being used—without breaking the budget.

Understand the Scope: An all-encompassing mobile strategy includes not just smartphones and tablets, but also laptops, USB devices, and consumer-based cloud storage services such as Dropbox and practically every organization, no matter what size, is at risk of having sensitive data stored on unsecured USB devices. USB drives are among the most commonly permitted mobile devices within an organization, and also among the easiest to lose. If an employee loses a phone, tablet, or laptop, it is reported to IT—so that devices can be remotely wiped or tracked, and passwords changed. If a USB drive is lost, it is quietly replaced without IT even knowing about the potential data leak. If there is any chance that data might be saved on USB drives, employees need to be issued with encrypted USB drives—such as the ones from Kingston and others—and taught how to use them appropriately. It's important to think through what makes sense for the business. Don't just open up the network and applications to everyone

Select an MDM Platform: There are plenty of mobile device management platforms in the marketplace, at a variety of prices. It's tempting to try free software, such as Spice works, or to just use Android's built-in Device Policy, but consider the support perils. Would such a platform be flexible enough, and easy enough to troubleshoot if something goes wrong? Self-service can wind up forcing users to spend far too much time figuring things out for themselves. Should you decide to take the paid-service plunge, here is a quick checklist of questions to ask. What am I supporting? MDM systems should have a centralized management console that can handle at least the major operating systems, including Apple iOS, Google Android, Symbian, and Microsoft Windows Phone and Windows Phone 8. This is where knowing your users and environment helps. Knowing what OSes you have to support makes the selection criteria easier.

To cloud or not to cloud? That is the question. Many large MDM vendors such as Air Watch (recently acquired by VMware) and Citrix now offer cloud versions of their products as a way to break into the SMB market. The cloud versions may be limited in the number of devices supported, which actually helps the smallest businesses get access to management capabilities at an affordable price.

Can I remotely manage my devices? With location-tracking available on many mobile devices, it doesn't make sense to not use it for remote tracking. If the smartphone is lost or stolen, remote tracking can help track it down. "Find My Phone" is popular—it's a built-in feature for iPhones and even mobile security apps like the one from Lookout Security offer the capability.

Can I protect my data when the device is lost or stolen? The ability to remotely lock the stolen device so that someone else can't get in to the contact lists, email, or other saved documents is critical. But it's also essential that IT can selectively wipe the device so that personal data remains unaffected when corporate data is removed. Users may be willing to have IT install security software or have some control over their personal devices, but they would be irate if the company has to brick their entire device when removing company-related data.

How do I create my own policies? There should be some kind of a policy engine to define company-wide access settings, monitor usage patterns, and enforce baseline security features. Granular policies are nice, such as being able to specify that user cannot, for example, use their iPhones to check mail or to open files when they are roaming.

Invest in IT: Finally, it's important to keep in mind that businesses can't solve the mobile problem, or have a clear understanding of their mobile usage, without investing in IT. If your IT staff doesn't have the capability to support the influx of devices, then it's important to outsource support so that users have someone to turn to when the inevitable happens and something goes wrong. Having an MDM with well-defined policies in place is a critical first step to reining in your company's mobile devices, but it's not the entire story.

At Galaxy, we have the skills required to implement the Air Watch MDM which is not only one of the most popular and stable solutions but is also a leader in the Gartner Magic Quadrant for MDM Solutions for the past 5 years. Please contact us for your MDM requirements and we will be happy to do a Proof-Of-Concept in your environment.

Tech News

Amazon to Sell Refurbished Smartphones in India



Amazon is stepping into the refurbished smartphones sales. For this, the retail giant has partnered with Surpluss, a B2C e-commerce firm selling refurbished and unboxed products. The worldwide market for refurbished smartphones that are sold to end users will grow to 120 million units by 2017, with an equivalent wholesale revenue of around \$14 billion says Gartner. This is up from 56 million units in 2014, with an equivalent wholesale revenue of \$7 billion.

Meike Escherich, principal research analyst, Gartner said, "While only seven percent of smartphones end up in official recycling programs, 64 percent get a second lease of life with 23 percent being handed down to other users and 41 percent being traded in or sold privately.

"This rise in smartphone reuse will impact not only the sales of new units, but also the revenue streams of all those involved in the smartphone supply chain," commented Escherich.

At present, Surpluss sells refurbished devices from brands like Samsung, LG, Xiaomi, OnePlus One, HTC, Alcatel, and Xolo at affordable prices. The partnership according to experts will gain the companies as these phones are in demand owing to their rising affordability. The orders for refurbished devices have already started rolling in.

"This partnership with Amazon will enable us to leverage their strengths and innovations in technology to reach out to wider set of consumers across India. The company has received more than 150 orders within a week of its Amazon debut," says executive director of Surpluss.in, Tarun Bhardwaj.

There's a strong momentum in the refurbished smart phone market. That demand is being fed by the 20-25 million electronic devices that are returned to sellers every year, he added.

With 3.6Mn Shipment in Q2, Apple Watch Is Doing Fine



Apple, which launched the Apple Watch in June, is within striking distance of leader Fitbit Inc in the wearable devices market, market research firm IDC said. The Apple Watch, which sports many health-related features and apps, is seen as the biggest rival to Fitbit's trackers.

IDC states that Apple shipped 3.6 million Apple Watches in the second quarter of 2015, just behind Fitbit's 4.4 million wearable fitness and health trackers.

Shipments of wearable devices more than tripled to 18.1 million units in the second quarter, even beyond IDC's expectations. IDC said in its June release that Apple will ship to retailers about 21 million Apple Watches in 2015. A GfK report earlier estimated that Apple Watch will sell anywhere between 10 million and 45 million before 2015 end.

Analysts expected Apple Watch to grab nearly two-thirds of the smartwatch market this year. "It's worth noting that Fitbit only sells basic wearables - a category that is expected to lose share over the next few years, leaving Apple poised to become the next market leader for all wearables," the IDC report said. Financial analyst Brian White of Cantor Fitzgerald recently mentioned that the Apple Watch will prove to be the best selling product in Apple's history.

Centre unveils list of 98 Smart Cities that emerged winners of nationwide competition

Kolkata, Mumbai, Jaipur, Bhubaneswar and Rae Bareilly will be developed as Smart Cities as the Urban Development Ministry formally announced the names of cities being selected for the NDA government's flagship project.

"The prime motive is to enhance urban life, mission is very practical and realistic. We need public's participation," Union Minister of Urban Development Venkaiah Naidu told reporters. Naidu held a press conference to announce the list of cities selected.

Mumbai, Kolkata, Lucknow, Jaipur, Ranchi and Bhubaneswar are among the cities that have found place in the coveted Smart Cities project list. Centre has earmarked Rs 48,000 crore for development of 100 smart cities. All Union Territories, including Delhi, have found place in the list.

13 cities from UP, 12 from Tamil Nadu, 10 from Maharashtra, 7 from MP, 3 each from Bihar & Andhra Pradesh included in smart cities-Venkaiah Naidu "Smart Cities need smart people, we need people's co-operation to move forward in our mission," Naidu added.

Prime Minister Narendra Modi had launched the criteria and guidelines for 100 Smart Cities to be selected through city challenge competition on June 25. In the first phase, Centre has picked 20 cities and in the next two years 40 cities each will be selected for receiving central funding of Rs 500 crore spread over the next five years. Each smart city will get a Central assistance of Rs. 100 crore per year for five years.

"Barring Jammu and Kashmir, all states have finalized the names of proposed Smart Cities through competition. So there are total 99 cities selected across the country," sources in Urban Development Ministry had said on Wednesday. While the Jammu and Kashmir government has proposed two cities - Jammu and Srinagar - instead of one city. Rather some of the lesser known cities and municipal areas such as Bihar Sharif in Bihar, Moradabad and Saharanpur in Uttar Pradesh, Dharamsala in Himachal, Shivamogga in Karnataka were nominated by the states.

Special Focus

Bigger EMC XtremIO Boxes, Low-End VNXe Expand All-flash Portfolio

EMC beefed up its all-flash products at EMC World 2015 by doubling the maximum capacity on its XtremIO platform and adding a low-end all-flash version of its VNXe storage array.



By bumping up its all-flash options, EMC is capitalizing on what the vendor sees as a strong move toward solid-state storage in the enterprise. EMC executives call XtremIO the most successfully selling system in company history, and project \$1.2 billion in revenue in 2015.

EMC XtremIO 4.0 software enables 40 TB X-Brick arrays, doubling the maximum capacity of previous X-Bricks. Earlier X-Bricks came in 10 TB or 20 TB configurations, and EMC offers a 5 TB Starter X-Brick. EMC calls the 80 TB X-Brick, "The Beast." Customers can cluster eight X-Bricks (up from six) and 16 N-way active controllers (up from 12) for high availability.

An eight X-Brick cluster scales to 320 TB raw, and a 6:1 data reduction ratio would bring that to 1.9 PB per cluster. EMC claims an eight-node cluster can handle 200,000 read IOPS and less than one millisecond latency.

EMC also added an all-flash version of its VNXe SMB unified storage platform. The all-flash VNXe3200 will be available in 2 TB, 3 TB and 7 TB configurations. EMC estimates a 3 TB VNXe3200 will sell for approximately \$25,000. The 2U VNXe3200 has been available as a hybrid array with SSDs and hard disk drives since 2014.

According to Gartner's recent solid-state array market analysis, EMC led the all-flash market with 31.1% market share in 2014. Most of that came from XtremIO, although EMC does sell all-flash versions of other arrays. Pure Storage was second at 19%, and IBM third at 16%. No other vendor had more than 7% share.

That was a big jump for EMC from 11.1% in 2013, behind IBM (24.6%) and Pure Storage (17.1%). EMC began shipping XtremIO in November of 2013.

"We were probably a year late, but we designed a flash array for the future," said David Goulden, CEO of EMC's Information Infrastructure group, pointing out that XtremIO's data services such as deduplication and compression are always on-line.

EMC often competes against itself in flash deals because XtremIO customers might be looking at the vendor's other products. EMC estimates that one-third of XtremIO customers are moving workloads off of other EMC arrays.

"More than any other IT company of size, we're not afraid of disrupting ourselves," Goulden said. "If we don't disrupt ourselves in flash, somebody else will."

Customers weigh all-flash vs. hybrid arrays

EMC customers at the show said they carefully consider whether they need all flash or if hybrid arrays better fit their needs.

Eric Tomasello, director of infrastructure for New York-based healthcare insurance company Emblem Health, said he started using XtremIO for VDI when the array was still in limited availability in late 2012. Tomasello said besides giving him a performance bump, XtremIO saves floor space compared to larger disk arrays. Tomasello said Emblem Health also uses other EMC storage but he is weighing whether he should go all-flash.

"We're looking at if it makes sense to use XtremIO for general purpose storage," he said. "Flash is actually a way for us to lower cost. We have a large data warehouse with about 40 TB of data. I had to throw a significant amount of disk to get consistent performance. Now we have local flash cards dedicated to it. I'm wondering if I can eliminate four or five tiers in my data center with two X-Blocks, is that something we want to do?"

Dave McCandless, VP of IT for Oakland, Calif.-based cargo shipping firm Navis, said his company weighed all-flash when he purchased two VNX arrays and an Isilon array last year but determined the price was too high for his needs. Navis does have approximately 40% SSDs on its hybrid VNX 5400 and VNX 5600 systems. McCandless said the flash helps his company's developers build out applications.

"Our biggest challenge as far as speed is our software build process," he said. "We build a solution for customers that is meaty and requires a cumbersome build process. The real need for us was to speed up that process, so we want to make sure the build process was using flash."

XtremIO upgrades are non-disruptive this time

Unlike with XtremIO 3.0, the 4.0 release can be upgraded non-disruptively with automatic rebalancing and no application downtime. Tomasello called the 3.0 upgrade the "biggest roadblock" for his XtremIO deployment, although he found EMC's suggested workaround of migrating virtual workloads with VMware Storage vMotion helped a lot.

"For us it was not that significant," he said. "I guess it was significant or people using bare metal. With Storage vMotion I didn't need to do anything overly complicated. We vMotioned from one LUN to another and were done. But that was the biggest roadblock."

Josh Goldstein, vice president of product marketing for EMC XtremIO, would not discuss roadmap issues, but hinted that the vendor would continue to pump up XtremIO capacity points. "We've taken something that was scarce [flash in storage], and made it abundant," he said. "People figure out how to use it. Nobody ever goes to Intel saying, 'can you take some cores out?'"

About Galaxy

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MD Speaks

"Last month has seen a lot of action in the Financial Markets across the world. This was mainly due to the financial crisis in China. China, the world's second-largest economy after the United States, had been growing so rapidly for so long that this growth was taken for granted by the world at large. During this phase, China was a very big importer of raw materials and exporter of finished goods. Suddenly, the world seems to have realized that this is no longer true. Moreover, the Chinese government seems to have realized that and has been trying measures like allowing pension funds to invest in the stock markets hoping for some stability and devaluing their currency to make their exports more attractive. Unfortunately, the problems were much more severe and continued to persist. What are the repercussions on the world in general and India in particular? Depending on whom you listen to, it could sink the US economy sending the world into a great depression at one end and at the other end is an excellent opportunity for India to attract investments that would be withdrawn from China. All in all, uncertain times ahead!

What would be the impact on our industry? In the very short term, the currency devaluation should reduce the prices of items manufactured in China - mainly electronic hardware components. However, once other countries join the devaluation war to stay competitive, this will soon stabilize. The worry though is because of the downturn, many of the giant factories with seemingly infinite capacity are likely to shut down. Surely, this will cause disruption in supplies and increased prices. Many global companies having their manufacturing facilities in China would be looking for alternate manufacturing locations to mitigate this. If India can present a strong case by providing world class facilities at close to Chinese rates, this just may be the fillip the 'Make in India' campaign needs."