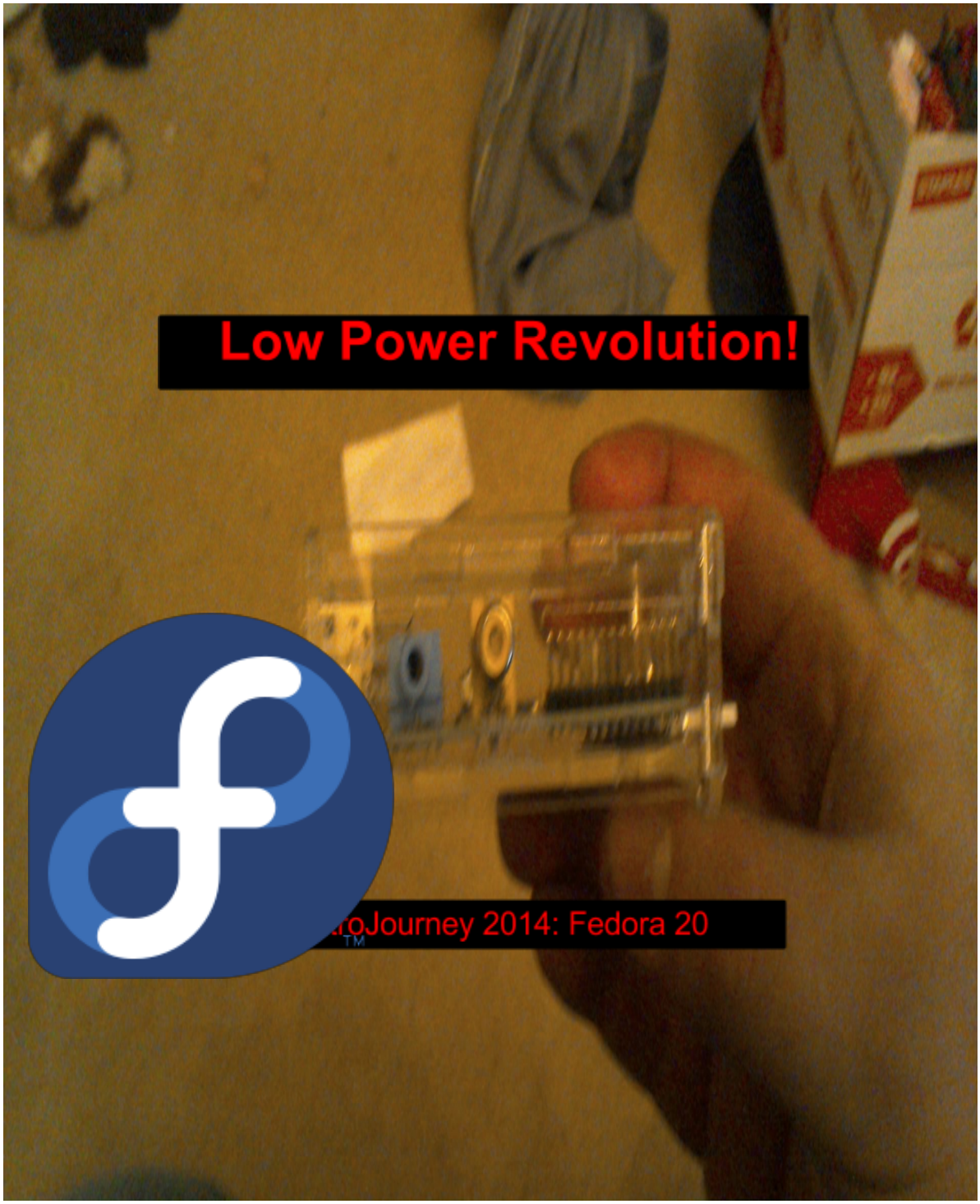
The *Nixed Report

Issue #8 Unix and Overlooked Pop Culture December 2014



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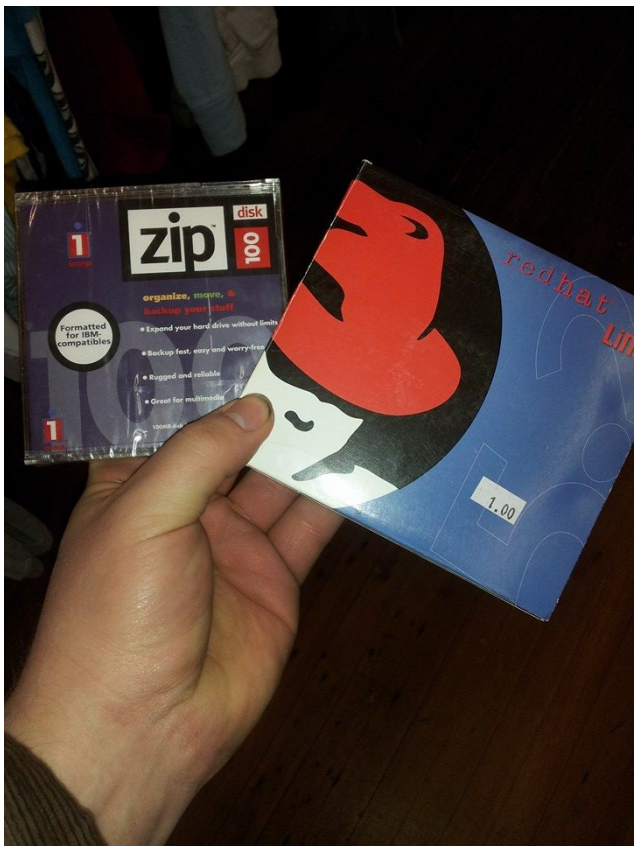
Thomas Holbrook II talks about his Arm-based Chromebook from Samsung while podcast co-host Steven Tompkins introduces us to his Raspberry Pi.

./ Technology Throwback: ZIP Disks and Red Hat Linux

By Thomas Holbrook II



Steven Tompkins, one of our esteemed colleagues recently came across a couple of things that one doesn't see these days. He bought a unopened ZIP disk from Iomega and a copy of Red Hat Linux 5.2.

ZIP disks were going to be the successors to floppy disks until flash based storage stole Iomega's thunder.

As for Red Hat 5.2, it brings back memories. I remember job shadowing at the University of Central Missouri (then known as Central Missouri State University). In one room, there was no Microsoft products running on any of the machines.

I was shown GNOME and Window Maker. Intrigued, I would eventually invest in a copy of Mandrake, only to discover that my HP Pavilion N5310 notebook had no desire to cooperate with it (even modern distros a few years ago would cause the system to lock up).

Sometimes a piece of computing history shows up in unusual places. In Steven's case, it was at the local Salvation Army store. He plans on trying the old version of Red Hat on an older system just to see what it looks like.

So, wow! Old storage media and an old operating system.

Throwbacks like these don't come around very often, so I decided to feature them in this issue.

It looks like the delay was worth it.

Distro Journey Series: Fedora 20

By Thomas Holbrook II

The following systems were used to evaluate this distro (GNOME was used as the interface for all systems):

ZaReason Breeze 3110

- 1.6 GHz Intel Atom CPU
- 1 GB RAM
- 320 GB Hard Drive
- DVD-ROM Drive
- Intel GMA 950 Graphics

Toshiba Satellite L305-S5921

- Dual Core Pentium T3400 (Max Speed: 2.16 GHz)
- 2 GB RAM
- Intel GMA X4500 Graphics (mobile version)
- 120 GB Hard Drive
- DVD Burner
- 1280x800 LCD Screen
- Multimedia Buttons
- Atheros Wireless Adapter
- Ethernet Controller
- VGA Port
- 3 USB Ports

Acer Aspire One 722 (USB DVD-ROM used for installation)

- Dual-Core AMD C60 (Max Speed: 1.33 GHz)
- AMD Radeon 6250 Graphics
- 2 GB RAM
- 320 GB Hard Drive
- Ethernet
- Atheros Wireless Adapter
- LCD with 1366x768 resolution and integrated webcam

Nvidia Desktop (formerly Intel Desktop)

- Intel D946GZIS Motherboard
- Intel Core 2 6300 CPU at 1.83 GHz
- 2 GB DDR-2 PC-5300 RAM
- 80 GB Hard Drive
- DVD/CD-RW Combo Drive
- EVGA Nvidia GeForce 210 (1 GB RAM)
- Intel Audio
- Ethernet

HP Pavilion Elite 410y

- AMD Phenom II X6 1045T (Max Speed: 3.2 GHz)
- 8 GB RAM
- AMD Radeon HD 5570 Graphics (1 GB RAM)
- 1 TB Hard Drive
- Ethernet
- Wireless Adapter (not used)

Introduction

For 10 years, Fedora has been the distro sponsored by Red Hat. Bleeding edge versions of software have often been included, which has made the OS a mixed bag. As of late, however, I have noticed how Certain parts of it have become more mature, hence why I chose this as the first stop on the Distro Journey.

GNOME 3.10 was used as the interface for all systems. It is important to note that due to an issue regarding maintaining a package in RPM Fusion, the AMD Catalyst drivers were not available at the time of install, so the open drivers were used on all AMD based systems. Nvidia Desktop was the only system in which proprietary drivers were installed.

Installation

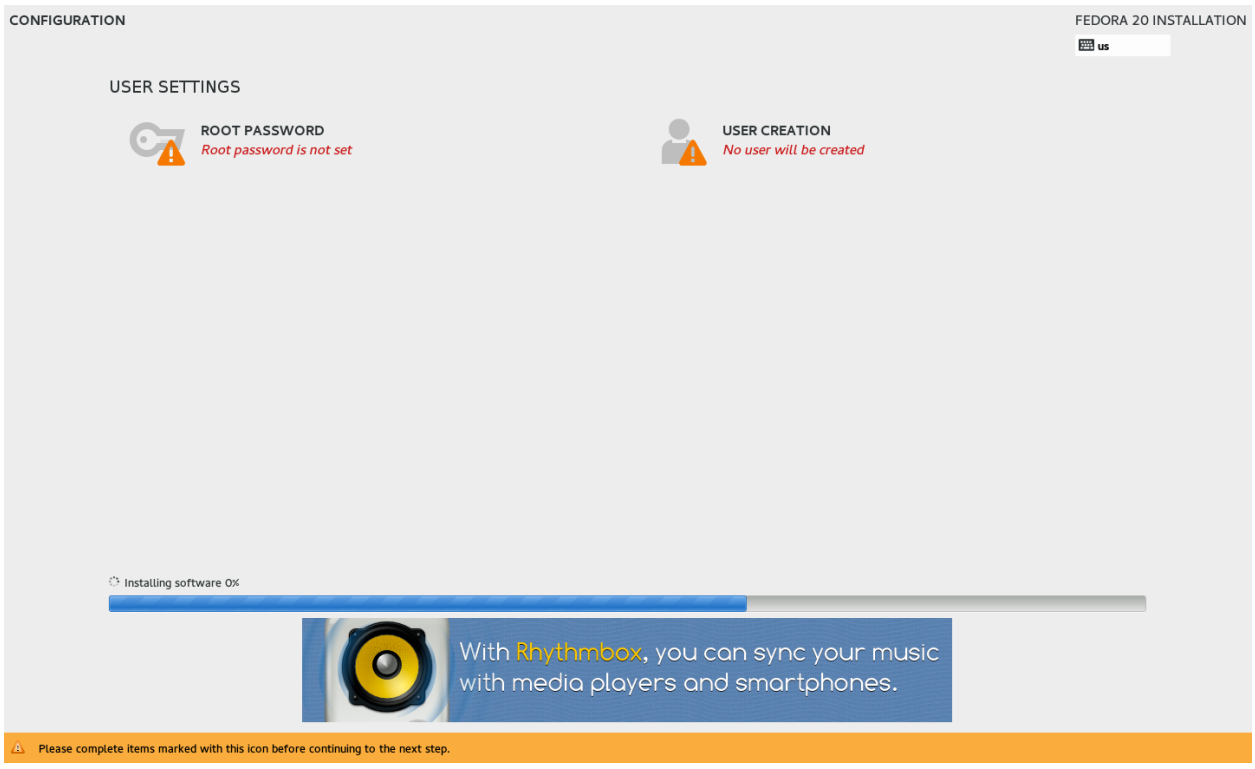
The LiveCD environment was used for installation. The live installer was quite functional with some interesting feature, as seen in the screenshots starting on the next page.

The user is presented with the option to install Fedora or simply try it. The beauty of a live environment is that the hard drive isn't touched unless the user asks it to.

The installer takes advantage of GNOME Shell and uses the majority of the screen. The usual options for formatting a hard disk, setting up partitions, time zone, and more are included in the setup.

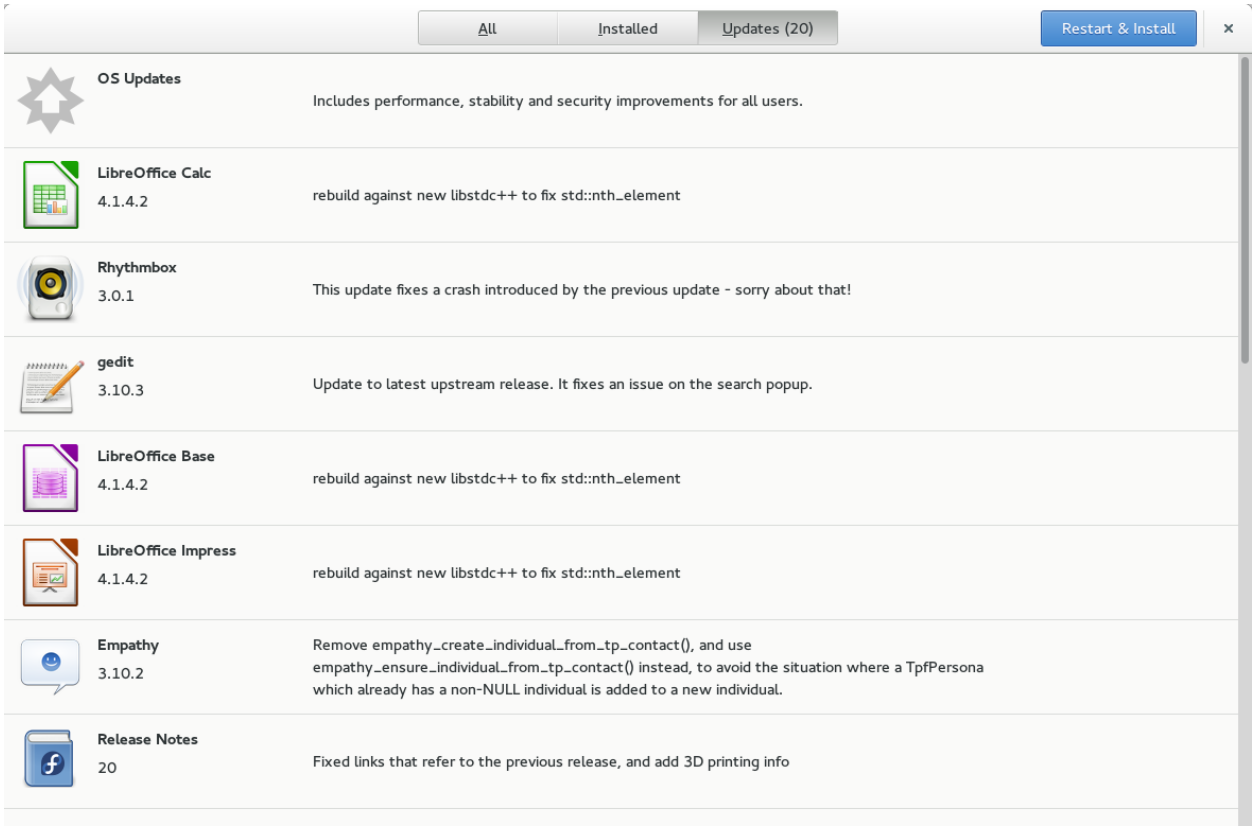
The placement of some of the controls are also interesting as seen on the next page.

FEDORA 20 INSTALLATION
us
WELCOME TO FEDORA 20.
What language would you like to use during the installation process?
English English
Afrikaans Afrikaans
አማርኛ Amharic
العربية Arabic
অসমীয়া Assamese
Asturianu Asturian
Беларуская Belarusian
Български Bulgarian
বাংলা Bengali
Bosanski Bosnian
Català Catalan
Čeština Czech
Cymraeg Welsh
Dansk Danish
Deutsch German
Ελληνικά Greek
Español Spanish
Eesti Estonian
Type here to search.
English (United States)
English (United Kingdom)
English (India)
English (Australia)
English (Canada)
English (Denmark)
English (Ireland)
English (New Zealand)
English (Nigeria)
English (Hong Kong SAR China)
English (Philippines)
English (Singapore)
English (South Africa)
English (Zambia)
English (Zimbabwe)
English (Botswana)
English (Antigua and Barbuda)
Quit
Continue


CONFIGURATION
FEDORA 20 INSTALLATION
us
USER SETTINGS
ROOT PASSWORD
Root password is not set
USER CREATION
No user will be created
Installing software 0%
With Rhythmbox, you can sync your music with media players and smartphones.
Please complete items marked with this icon before continuing to the next step.

Available Apps and Proprietary Drivers

LibreOffice and Firefox are among the mainstays of applications that are available by default. The software center (pictured below) does allow the user to add more, but some of the features are a bit lacking. Yum is more flexible, especially when accessed via Yumex.



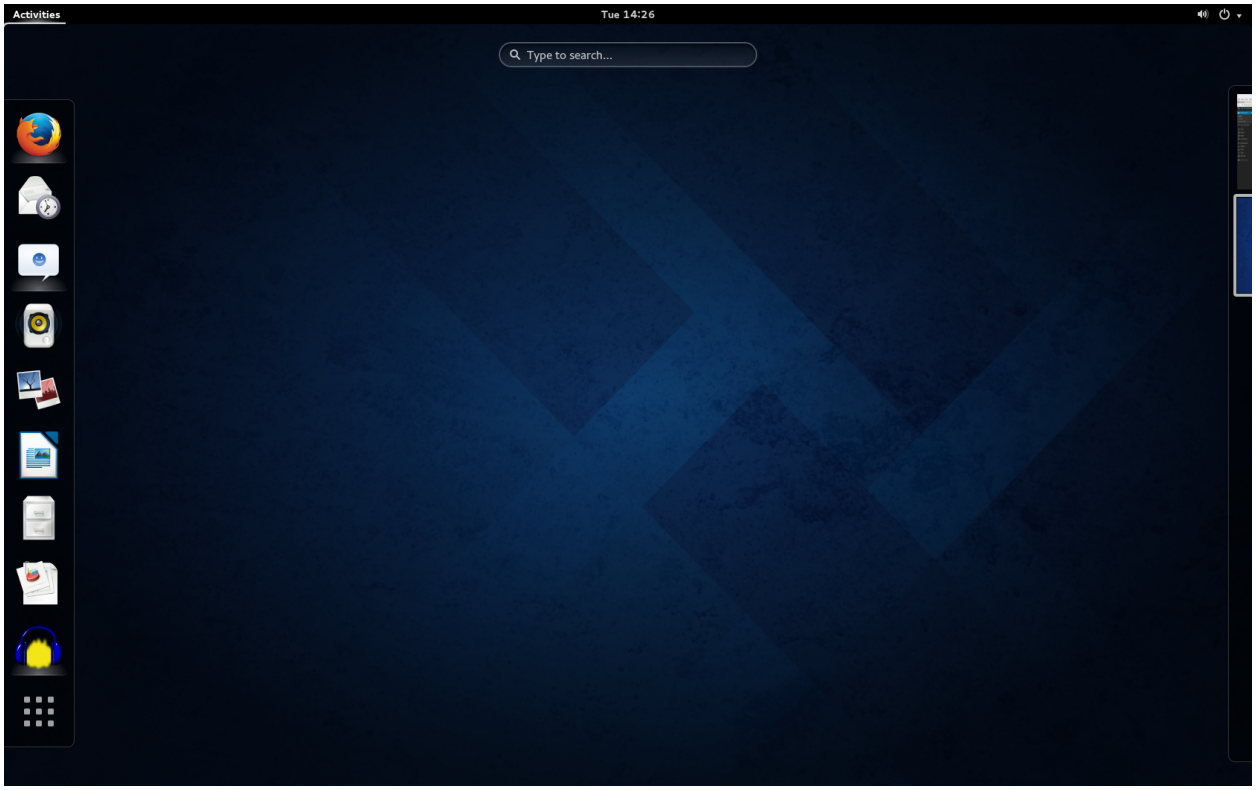
Third party repositories such as RPMFusion can be added for additional multimedia codecs and drivers. For libdvdcss, the library that allows for DVD playback, to be installed, the Livna repository has to be added.

Desktop Interface

GNOME Shell is the main interface, and the emphasis is on workspaces and searching for applications whenever necessary. It's a different paradigm, so those who are used to traditional desktops may have some adjusting to do.

Moving the cursor to the upper left hand corner will bring up the side launcher where favorite applications can be pinned. On the same

screen, applications can be searched for and launched.



Multiple workspaces allow for multitasking of applications by moving said app to the next available space, which are listed on the right side of the screen.

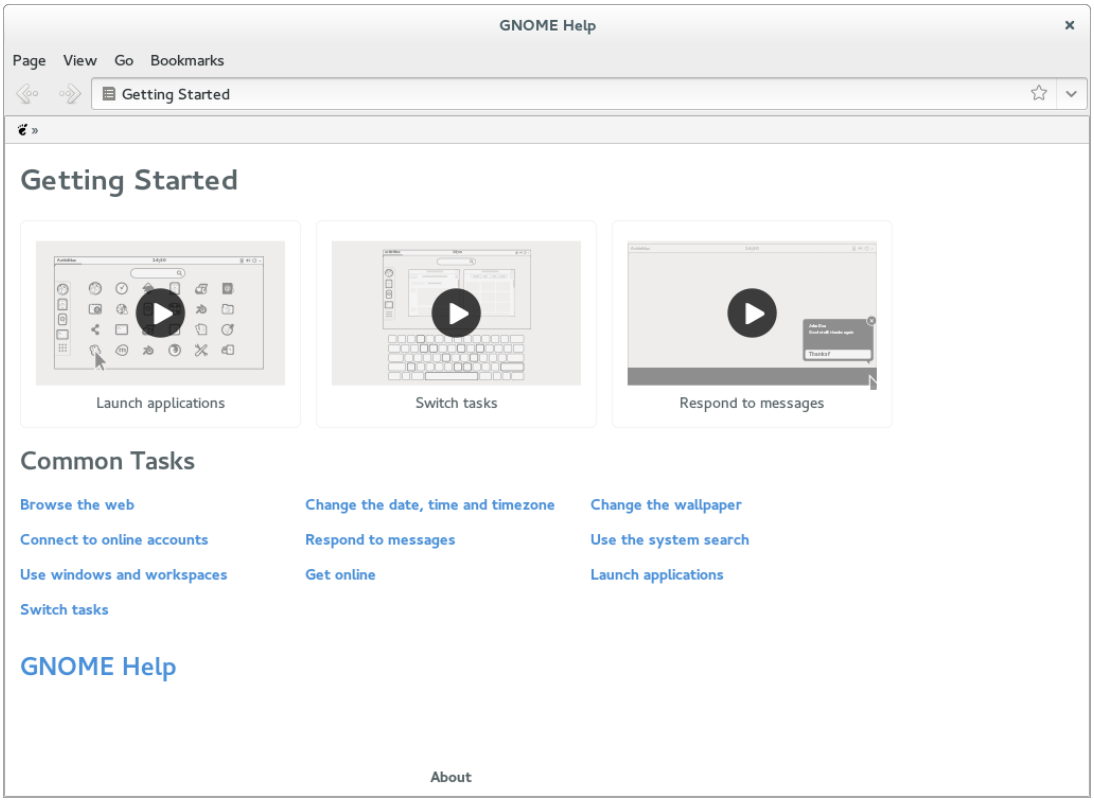
The upper right hand of the screen is used to change the volume, join a network, edit configuration settings for the system, logout, or shutdown/restart the system.

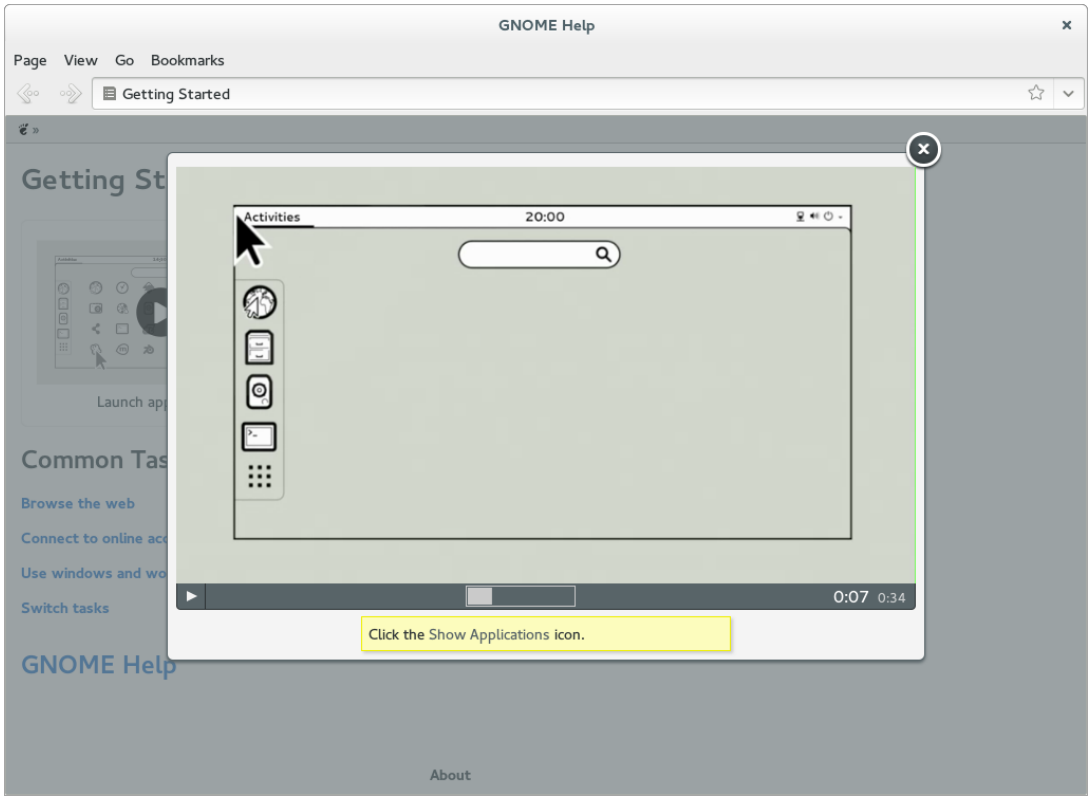
What I Liked

The ability to add online accounts for purposes of instant messaging, e-mail, and editing online documents is a convenience feature that's very helpful.

There seems to be an emphasis on integration of such accounts into the desktop environment. With enough refinement, it could really enhance the user experience.

Having a Getting Started tutorial appear on first run (pictured on the next page) is also a nice touch.


GNOME Help
Page View Go Bookmarks
Getting Started
Getting Started
Launch applications
Switch tasks
Respond to messages
Common Tasks
Browse the web
Connect to online accounts
Use windows and workspaces
Switch tasks
Change the date, time and timezone
Respond to messages
Get online
Change the wallpaper
Use the system search
Launch applications
GNOME Help
About


GNOME Help
Page View Go Bookmarks
Getting Started
Activities
20:00
0:07 0:34
Click the Show Applications icon.
About

Since the rise of HTML 5, doors have been opened. One of them involves video presentations demonstrating how the interface works. New users will be able to identify with them and learn the system in a more comfortable way. Such first time presentations can go a long way in learning a different interface.

The third party repositories allowed for extended functionality with additional applications and drivers. The Nvidia drivers worked perfectly on the Intel-Nvidia desktop.

What Could Be Better

Though not the fault of the main project, third party repositories didn't have AMD's Catalyst drivers available. Furthermore, upon the choosing time zone section of installation, the list would not always scroll, thus making things a bit challenging.

Other than those minor hiccups, the systems performed quite well. It's important to note that the ZaReason Breeze 3110 is still able to run GNOME Shell, but it's a bit sluggish, so using it on slightly more powerful systems would probably be prudent at this point.

Other than that, the system is quite stable and functional.

Conclusion

It's important to note that Fedora tends to be more cutting edge than others. Nevertheless, it's stable and quite functional. The project participants stick to the principles of Free and Open Source Software, hence why third party repositories are needed for proprietary drivers and multimedia support.

Start up tutorials and wizards that help users add their online accounts for additional and enhanced functionality are also wonderful touches to the OS.

Hopefully the issue with the lack of AMD Catalyst drivers in the RPMFusion repository will be resolved at some point. The open drivers still work well, but it would have been interesting to compare.

Low Power Devices and the Future of Computing

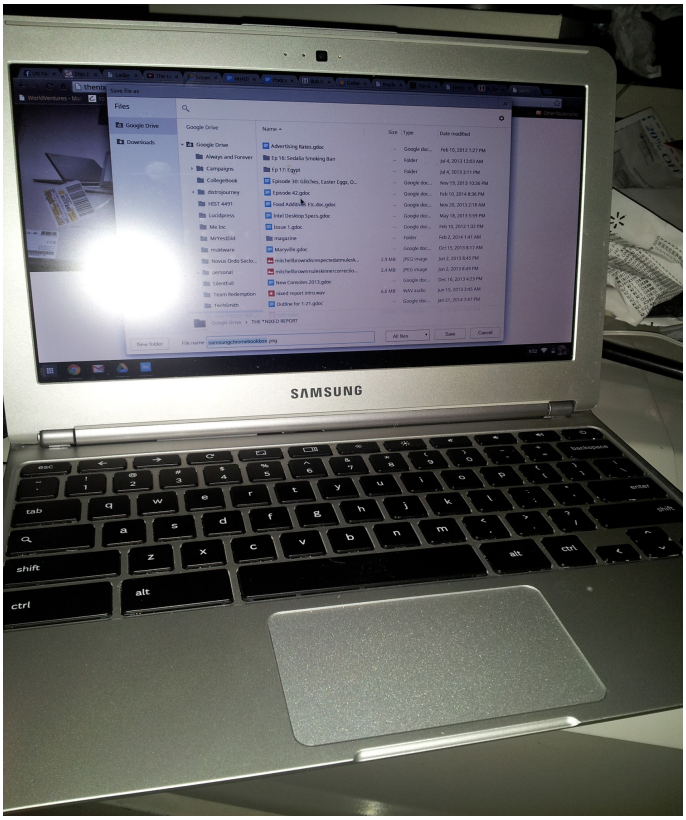
By Thomas Holbrook II and Steven Tompkins

I remember seeing the trend in "green computing" taking off in late 2008. I saw what had happened with the great financial panic, and noticed how low powered devices were getting more popular.

Most of these machines had some an OS that used the Linux kernel, a move that would cause Microsoft to dust off Windows XP so they could enter the netbook market. They managed to stave off the Linux-based invasion, but that opened the door to other possibilities.

What if one could get by without spending over $300 USD on a system? From a major corporation to a non-profit foundation, there seems to be an up trend in low powered devices that are relatively inexpensive. We'll take a look at two devices that revolve around the Linux kernel, and see how it influenced the Redmond giant in terms of entering the mobile market.

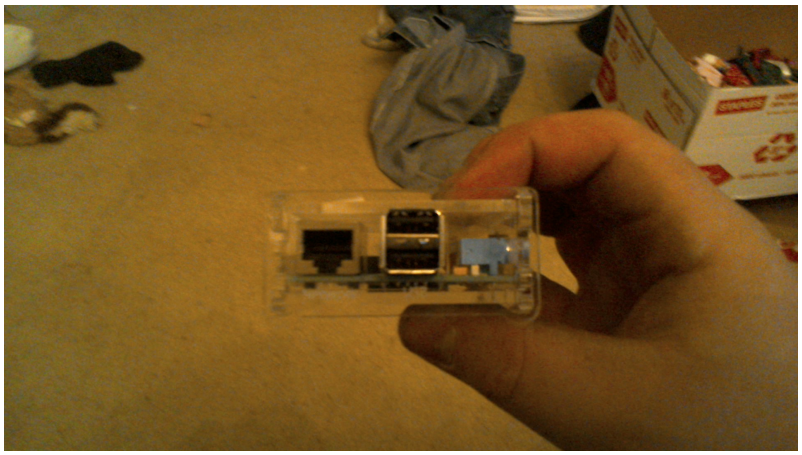
Samsung Chromebook



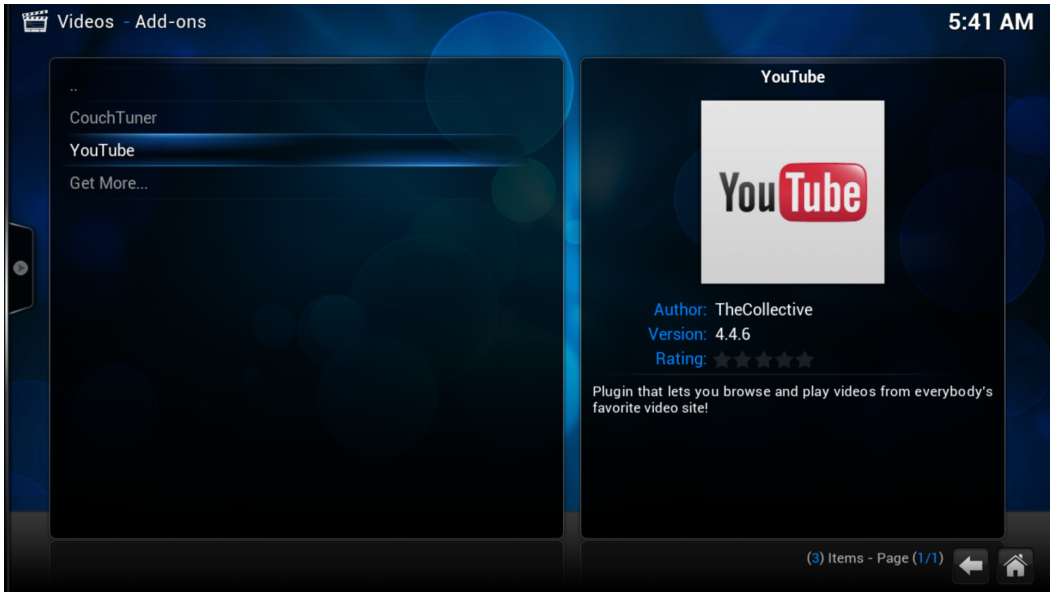
I'm Thomas, and I'll take you through my experiences with this ARM-based device. I acquired it at the end of 2013 as a holiday gift to myself. For the longest time, I wanted a system that wasn't x86-based.

The South Korea based company is among the few that have chosen not to use Intel processors for one of their Chrome OS devices. Tablets are nice things to have, but I prefer a full keyboard as opposed to the touch-based variety.

Raspberry Pi



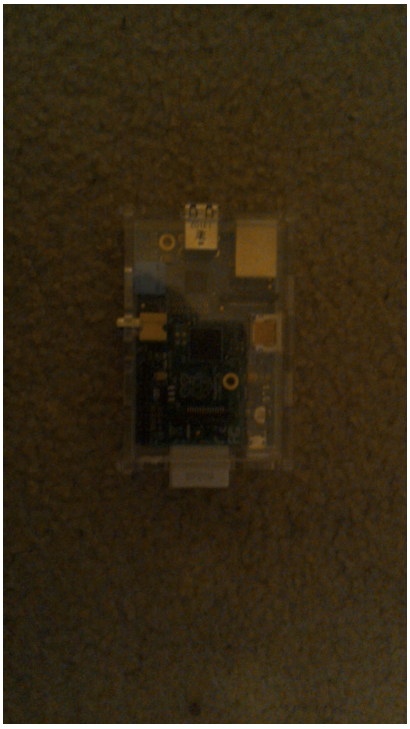
I am Steven Tompkins and I am going to share with you one of my prized devices which I use, the Raspberry pi. I had first learned about the device early in 2012, after its debut in 2011. I decided in the beginning of 2013 that I would like to have one, and its mostly due to the major selling point that the pi has, price. Being a very cheap price, at 35 dollars, it is designed to be a low power, cheaper computer that will allow developing countries to help students learn about computer programming.
I primarily use my pi as a media center, being able to hook up to a TV through HDMI makes this extremely simple. For those of you who don't have a modern TV, there's no need to worry, the model A, and B versions both come with a composite hookup, allowing you to connect to an older device. In my experience the raspberry pi makes an excellent media center, with the raspberry pi foundation supporting two linux distributions which support are based on XBMC, it all comes down to preference of the platform. One of which being OpenELEC, which stands for Open Embedded Linux Entertainment Center, which boots straight to XBMC, streamlining the living room PC experience, and the other being RaspBMC.

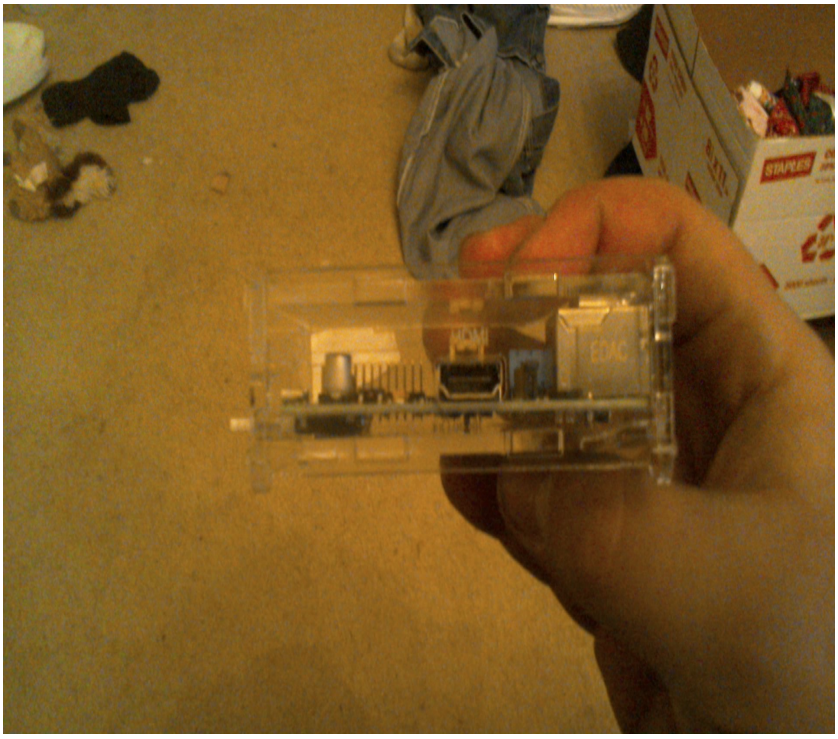


I was originally running OpenELEC, however I decided to switch back to RaspBMC, due to complications with a plugin version. One of the nice features of either OpenELEC or RaspBMC are that XBMC has a function that allows you to add a collection of videos to a library, and the same with music, so you can either connect a USB hard drive

through one of the ports on the pi, or you can do what I did and connect through the network.

It is a very versatile piece of hardware capable of many, many things, and it is something that should be used, it is as the Raspberrry Pi foundation intended for it to be, a tool.





The Future of Computing

The interesting trend taking place in terms of small devices is the fact that both Intel and AMD are throwing their hats into the ARM ring. ARM-based processors have a decent amount of computing ability while being energy efficient.

With the many projects focused around the Raspberry Pi, especially the creation of new devices, one has to wonder what will happen next in the personal computer field. Are desktops with multi-core 64-bit CPU's, powerful graphics cards, and copious amounts of memory and storage going to fade away?

Not necessarily.

What may wind up happening is that more low cost devices find their way into the market. I can see more OEM's for the Pi in terms of sub $100 USD notebooks, thus giving Chromebooks a run for their money.

Speaking of which, Google has done well in terms of bringing a new operating system to the masses. Chrome OS is the very system that Kevin Mitnick deemed very secure, because "there's just nothing to exploit." (ZDNet)

By hardening the Chrome browser itself and then embedding it into a system that is also hardened, Google has been able to market Chromebooks as secure devices. Now we have LG and Asus coming out with Chromeboxes, thus shaking things up further.

It's going to be a combination of low powered devices and cloud resources that's going to bring rapid change to the computing industry. Local apps are still necessary and will always be there, but the cloud is going to be the complement to those devices in the same way that the mouse complimented the keyboard.

In short, expect more low powered devices to come to market in the near future and more software developers to come out of the woodwork to master their craft.