Ubuntu Linux Server

Ubuntu Linux Server Edition
Quick & Comprehensive Overview

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Who am I?

- Joseph Guarino
- Working in IT for last 15 years systems, network, security admin, technical marketing, project management, IT management, etc.
- Full time IT consultant with my own firm Evolutionary IT
- CISSP, LPIC, MCSE, PMP
- www.evolutionaryit.com
? 

- How many of you are familiar with Ubuntu desktop in some way?
- Ubuntu server?
Overview

- FOSS – A brief Linux focused history
- Ubuntu server and overview
- Ubuntu support - support options are supernumerary.
- Landscape management suite.
- Ubuntu enterprise integration.
FOSS

Licenses and abbreviated history
What is FOSS/FLOSS?

- Free and Open Source Software
- FLOSS or Free/Libre/Open-Source Software.
- Libre is used to clarify the ambiguity of the word free in English.
- Alternative term to describe software spectrum from free to open.
Dental Hygiene?
What is FOSS?

- FOSS (Free and Open Source Software) is a software licensing model that allows anyone the liberty to **use**, **extend** and **distribute** the software as they see fit.

- Represents a spectrum of licenses.

- FOSS is unique as well in that it produces innovation quickly by the very concept of open, cooperative, collaborative sharing and development.

- Commercial software is much more restrictive.
FOSS vs. Commercial

• Licensed with very specific rights associated with its use, modification, distribution and use that are not commonly available to a user via commercial “closed” software.

• Software licenses of traditional commercial software define specific permission, rights and restrictions.

• Licensee determines the license terms.

• Much more restrictive that FOSS.

• Freedom, sharing, collaboration are not inherit parts of this traditional “closed” model which typifies the traditional software industry.
What FOSS is NOT

• ≠ Freeware
• ≠ Shareware
• ≠ Public Domain Software
• ≠ Malware, spyware, adware, badware etc. Community standards general prohibit this.
History

How it all started....
Was it any of these people?
Or perhaps?
Maybe...
Seriously

It's an amazing story...
RMS & the FSF

- FSF – Free Software Foundation
- Founded in 1983 by Richard Stallman with the goal of creating a free Unix like OS, GNU Project.
- Consummate computer scientist/hacker who created Emacs, GNU Compiler, GNU Debugger.
- Spearhead the efforts of Free Software movement.
- Created several copyright license such as the GNU/GPL which is the most popular FOSS licenses.
FSF

• Patent reforms are also critical to RMS and the FSF.
• Free as in Freedom. Price is not the issue. Uncompromising stance on free software and patents.
• Doesn't like the term Open Source.
• http://www.fsf.org/
Enter the Linus

- Linus Torvalds in 1991 creates first Linux kernel.
- Released in 1992 under GNU/GPL
- Kernel + GNU Project (systems libs/utils) = GNU/Linux
- Now kernel project coordinator and keeper of Linux trademark.
- Neutral on Free Software and more focused on quality.
- Differs with RMS.
Early Days

- Kernel licensed under GNU/GPL propelled interest, innovation and ingenuity of FOSS community.
- The Linux Kernel plus the systems utilities and libraries from the GNU project yielded Linux in many forms.
- Early distributions such as Debian & Slackware appeared in 93.
- Evolution of GNU/Linux
Linux Evolutionary Time line
Perception & Ambiguity of Free

• Free software inherently exists in the context of capitalism and free enterprise, not outside it.
• Problem was the term “free” was not helpful in selling software.
• If its “free” what would you be buying? Ugh!
• Who would champion such a cause?
And along came the OSI

- OSI – non-profit created in 1998 by Bruce Perens & Eric Raymond to promote “open source.”

- Open source was a repositioning of free software with a term that was to clear up the ambiguity seen in the term free.

- Attempt was to make free software provide a more business friendly effort with less of the deep ideological slant.

- Uphold and promotes Open Source Definition.

- http://www.opensource.org/
Many Licenses

• There are many FOSS licenses each which allow different rights and responsibilities

• Most popular are GNU General Public License, GNU Lesser General Public License, BSD License, Mozilla Public License, MIT License and the Apache License.

• OSI Licenses – OSI Software Definition http://opensource.org/licenses/

• FSF Licenses – Free Software Definition http://www.gnu.org/licenses/
A brief history of time..

Ubuntu style...
Ubuntu

History
Debian Linux

• Long history of quality FOSS software. One of the oldest GNU/Linux distros started back in 1993.

• Debian GNU/Linux is often called the universal OS because it supports 11 architectures (i386, powerpc, arm, alpha, mips, amd64, etc).

• 19000 precompiled packages.

• Irregular release cycle.

• Knoppix, MEPIS, Xandros use Debian as a base.

• http://www.us.debian.org/
Ubuntu

• Mark Shuttleworth - Early 90's was a Debian developer

• Founder of Thawte (digital certificates and internet security) which he sold to VeriSign.

• Founded Canonical Ltd which funds and supports Ubuntu project.

• 2000 founder of HBD Venture Capital.

• 2001 Shuttleworth Foundation to fund educational and open source projects in South Africa,
Ubuntu

• Ubuntu first released in October 2004

• In 2005 he created the community driven organization Ubuntu Foundation with initial $10 million.

• Always will be FOSS software in perpetuity.

• Dedicated to solving Bug #1
Ubuntu

• Based upon the long heritage of Debian GNU/Linux
• Characterized by six month release cycle
• Suitable for nearly any enterprise need from desktop to core infrastructure.
• Web, Email, DNS, File Server, Database, Routing, Firewall, etc.
• Anything.
Ubuntu

Family – including official and recognized derivatives...
Ubuntu Family

• **Ubuntu** – Core desktop effort.
• **Kubuntu** – Ubuntu but with KDE desktop environment.
• **Edubuntu** – Ubuntu with focus on educational space.
• **Xubuntu** – Ubuntu “light” with snappy Xfce with minimal hardware requirements.
• **Ubuntu Server** – Ubuntu core with server focus minus desktop, etc.
Ubuntu Family (cont.)

- **Gobuntu** – Completely free software.
- **Ubuntu JeOS** – Ubuntu optimized for deployment of virtual machines.
- **Ubuntu Studio** – designed with multimedia creation in mind.
- **Mythbuntu** – Ubuntu for MythTV.
Ubuntu Server Features

- Xen Virtualization, VMWare Virtualization, KVM (Kernel based virtual machines), JeOS (“Juice”), LTSP (Linux Terminal Server Project)
- Thousands of packages for every enterprise need.
- Red Hat Cluster Suite, Red Hat GFS, Oracle's OCFS2 File system, ISCSI, DRBN.
- AppArmor security framework, UFW, SpamAssassin, Amavisd, ClamAV, nearly anything from the FOSS world.
- Pre-configured install options for Mail Server, File Server, Print Server, Database Server, DNS, LAMP
- Support for x86, AMD64, and UltraSPARC T1 architectures.
- Uses APT/Synaptic for package management
Ubuntu Server Examples

- Webserver – Apache, Aol server
- Mailserver – Postfix, Exim, Dovecot, Zimbra
- Anti-spam/Anti-malware – SpamAssassin, Amavisd, ClamAV
- Proxy Server/Content Control – Squid, DansGuardian, SquidGuard, HAVP
- Database Server – MySQL, PostgreSQL, DB2
- DNS/DHCP – ISC Bind
- File Server – NFS, Samba
- Print Server - Cups
- Directory Server – OpenLdap, Fedora Directory Server
- Router - Quagga
- Firewall – Shorewall, Fwbuilder, Firestarter
- VPN – OpenVPN, SSL-Explorer, OpenSwan
Apt

• Advanced Packaging Tool is an easy to use package management tool.
• Handles the retrieval, configuration and installation of software packages.
• Automatic dependency checking and resolution.
• Relies on repositories which are central “stores” of available packages.
• Has a myriad of front-ends such as aptitude, Synaptic, Adept.
Repositories

• 4 Components
• Whether or not it supports Free Software Philosophy
• **Main** – Free software that gets security updates and its fully supported.
• **Restricted** – Not completely free & partially supported.
• **Universe** – Snapshot of FOSS world with most any application you can find in the open source world. Variety of licenses.
• **Multiverse** – Not free and not supported.
Apt examples

• **Note**: root is disabled by default so sudo allows you to run commands with superuser privileges

• **`apt-get install packagename`** – installs software package

• **`apt-get remove packagename`** – removes package

• **`apt-get update`** – updates list of software packages.

• **`apt-get upgrade`** – installs upgrades of all packages currently installed.

• **`apt-get dist-upgrade`** – upgrades to latest release.
Apt for AMP

- apt-get install apache2 php5-mysql libapache2-mod-php5 mysql-server
- Apache, Php and MySQL are now installed.
- Configuring and locking them down are another issue and beyond the scope of this presentation.
IHV Options

• Dell, Sun, Systems 76 officially support. Many others in the works.

• Most any Linux vendor that supports Linux generally will follow the HCL and offer you support for the hardware.

• Hardware can be purchased and supported by any organization that supports Linux. I.e. IBM, HP, Dell, etc.

• Ubuntu server validated hardware
ISV Options

- Thousands of software packages from Apache to Zope.

- Officially supported software from Sun (Java Enterprise Edition, GlassFish Application Server, Java SE Dev Kit, Java DB, Netbeans), IBM (DB2), Dell (desktop) VMWare (VMI and Para-Ops), SugarCRM, IBM (Lotus Notes/Symphony), Likewise.

- IHV (Independent Hardware Vendors) and ISV (Independent Software Vendors) list is growing daily.
Support

• LTS (Long Term Support) is supported for 3 years on desktop and 5 years for server.
• Current LTS is 8.04
• Canonical Support.
• Ubuntu Marketplace with providers globally.
• Community Support with Documentation, Forums, Mailing Lists, IRC, and Wiki's
Canonical Landscape

Landscape suite
Landscape

• Easy management from desktop to server with suite of web based administration tools.

• Bundled with existing support contract without additional charge.

• Can purchase without support at $150/node/yr.
Landscape Features

- General Systems Management
- Software (Package) Management
- Patch Management
- Systems Inventory
- Centralized Logging/Audit
- Performance Monitoring & Reporting
- User Management
Landscape General Systems Management

Details

ubuntu_desktop_704_b

Last seen: Today at 21:59

Distribution: Ubuntu 7.04 (feisty)

Hardware: Intel(R) Pentium(R) 4 CPU 3.20GHz 250MB RAM

Tags:

Add | Remove

Comment:

Save

Remove this computer...
## Landscape General Systems Management

### Last updated at Today 21:59.

<table>
<thead>
<tr>
<th>Command</th>
<th>State</th>
<th>VM size (bytes)</th>
<th>Sleep avg (%)</th>
<th>PID</th>
<th>Started at</th>
<th>User</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>bash</td>
<td>Sleeping</td>
<td>4052</td>
<td>97</td>
<td>11200</td>
<td>Today 20:52</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>1</td>
<td>Sleeping</td>
<td>7888</td>
<td>98</td>
<td>11192</td>
<td>Today 20:52</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>NetworkManager</td>
<td>Sleeping</td>
<td>4124</td>
<td>98</td>
<td>4174</td>
<td>Today 20:08</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>NetworkManagerDispatcher</td>
<td>Sleeping</td>
<td>3024</td>
<td>0</td>
<td>4206</td>
<td>Today 20:09</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>x</td>
<td>Sleeping</td>
<td>16364</td>
<td>98</td>
<td>4250</td>
<td>Today 20:09</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>acpid</td>
<td>Sleeping</td>
<td>2260</td>
<td>78</td>
<td>3910</td>
<td>Today 20:08</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>acpid.socket</td>
<td>Sleeping</td>
<td>2100</td>
<td>63</td>
<td>4116</td>
<td>Today 20:08</td>
<td>haldaemon</td>
<td>haldaemon</td>
</tr>
<tr>
<td>aio/0</td>
<td>Sleeping</td>
<td>88</td>
<td>88</td>
<td>115</td>
<td>Today 20:05</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>ata/0</td>
<td>Sleeping</td>
<td>0</td>
<td>0</td>
<td>1949</td>
<td>Today 20:05</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>ata/aux</td>
<td>Sleeping</td>
<td>0</td>
<td>0</td>
<td>1950</td>
<td>Today 20:05</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>atd</td>
<td>Sleeping</td>
<td>1912</td>
<td>0</td>
<td>4606</td>
<td>Today 20:09</td>
<td>root</td>
<td>root</td>
</tr>
<tr>
<td>avahi-daemon: chroot helper</td>
<td>Sleeping</td>
<td>2664</td>
<td>2</td>
<td>4193</td>
<td>Today 20:08</td>
<td>avahi</td>
<td>avahi</td>
</tr>
<tr>
<td>avahi-daemon: running [Ubuntu.local]</td>
<td>Sleeping</td>
<td>2768</td>
<td>98</td>
<td>4192</td>
<td>Today 20:08</td>
<td>avahi</td>
<td>avahi</td>
</tr>
</tbody>
</table>

1 process

### No processes selected

- End process
- Kill process
Landscape Software/Patch Management

Search for packages

Package name: [ ] Go
- All packages
- Upgrades only
- Security upgrades only

Upgrades

Click the button below to request the calculation of an upgrade of all packages on selected computers. Once the request is responded to, the upgrades must be approved or canceled in the pending requests page.

You may also browse upgrades available for selected computers.

Summary

<table>
<thead>
<tr>
<th>Computer</th>
<th>Available</th>
<th>Installed</th>
<th>Upgrades</th>
</tr>
</thead>
<tbody>
<tr>
<td>ubuntu_desktop_704_b</td>
<td>22349</td>
<td>1069</td>
<td>124</td>
</tr>
</tbody>
</table>

Security issues

Security upgrades available for selected computers offer security fixes for the following issues.

<table>
<thead>
<tr>
<th>USN</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>436.2</td>
<td>file vulnerability</td>
</tr>
<tr>
<td>466.1</td>
<td>freetype vulnerability</td>
</tr>
<tr>
<td>472.1</td>
<td>libpng vulnerability</td>
</tr>
<tr>
<td>475.1</td>
<td>evolution-data-server vulnerability</td>
</tr>
</tbody>
</table>
Landscape Patch Management

<table>
<thead>
<tr>
<th>Package</th>
<th>Version</th>
<th>USN</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>gnupg</td>
<td>1.4.2.2-1ubuntu2.5</td>
<td>432-1</td>
<td>GNU privacy guard - a free PGP replacement</td>
</tr>
<tr>
<td>gzip</td>
<td>1.3.5.12ubuntu0.1</td>
<td>349-1</td>
<td>The GNU compression utility</td>
</tr>
<tr>
<td>libdns21</td>
<td>1.9.3.2-2ubuntu1.3</td>
<td>491-1</td>
<td>DNS Shared Library used by BIND</td>
</tr>
<tr>
<td>libgnutls12</td>
<td>1.2.9-2ubuntu1.1</td>
<td>348-1</td>
<td>the GNU TLS library - runtime library</td>
</tr>
<tr>
<td>libmagic1</td>
<td>4.16-1ubuntu3.2</td>
<td>439-2</td>
<td>File type determination library using &quot;magic&quot; numbers</td>
</tr>
<tr>
<td>libssl0.9.8</td>
<td>0.9.8a-7ubuntu0.4</td>
<td>522-1</td>
<td>SSL shared libraries</td>
</tr>
<tr>
<td>linux-image-2.6.15-26-server</td>
<td>2.6.15-26.47</td>
<td>346-1</td>
<td>Linux kernel image for version 2.6.15 on Server Equipment</td>
</tr>
<tr>
<td>openssh-server</td>
<td>1.4.2p1-7ubuntu3.1</td>
<td>355-1</td>
<td>Secure shell server, an rshd replacement</td>
</tr>
<tr>
<td>rsync</td>
<td>2.6.6-1ubuntu2.1</td>
<td>500-1</td>
<td>fast remote file copy program [like rcp]</td>
</tr>
<tr>
<td>tar</td>
<td>1.15.1-2ubuntu2.2</td>
<td>506-1</td>
<td>GNU tar</td>
</tr>
<tr>
<td>tcpdump</td>
<td>3.9.4-2ubuntu0.2</td>
<td>492-1</td>
<td>A powerful tool for network monitoring and data acquisition</td>
</tr>
<tr>
<td>vim</td>
<td>1.6.4-006+2ubuntu6.1</td>
<td>505-1</td>
<td>Vi improved - enhanced vi editor</td>
</tr>
<tr>
<td>w3m</td>
<td>0.5.1-4ubuntu2.6.06</td>
<td>399-1</td>
<td>WWW browsable pager with excellent tables/frames support</td>
</tr>
</tbody>
</table>

Apply Changes
Landscape General Systems Inventory

Device
- Computer
  - 16550A-compatible COM port
  - 16550A-compatible COM port
  - 16650A-compatible COM port
  - 16650A-compatible COM port
  - 440BX/ZX/DX - 82443BX/ZX/DX AGP bridge
  - 440BX/ZX/DX - 82443BX/ZX/DX Host bridge
  - 53c1030 PCI-X Fusion-MPT Dual Ultra320 SCSI
- SCSI Device
  - SCSI Generic Interface
    - VMware Virtual S
      - Volume
      - Volume (ext3)
      - Volume (swap)
  - SCSI Host Adapter
    - 79c970 [PCI@133000000000 LANCE]
- Networking Interface

52 devices found
Landscape Logging/Audit

<table>
<thead>
<tr>
<th>Status</th>
<th>Summary</th>
<th>Computer</th>
<th>Changed at</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Change package(s) (Joseph Guarino)</td>
<td>ubuntu-srv-610-a</td>
<td>Today at 22:19</td>
</tr>
<tr>
<td>✓</td>
<td>ubuntu-srv-610-a</td>
<td>ubuntu-srv-610-a</td>
<td>Today at 22:15</td>
</tr>
<tr>
<td>✓</td>
<td>ubuntu-srv-704-b</td>
<td>ubuntu-srv-704-b</td>
<td>Today at 22:06</td>
</tr>
<tr>
<td>✓</td>
<td>ubuntu-srv-6061-a</td>
<td>ubuntu-srv-6061-a</td>
<td>Today at 21:54</td>
</tr>
<tr>
<td>✓</td>
<td>ubuntu_desktop_704_b</td>
<td>ubuntu_desktop_704_b</td>
<td>Today at 20:59</td>
</tr>
<tr>
<td>✓</td>
<td>Verify package upgrades (Joseph Guarino)</td>
<td>ubuntu_desktop_610_a</td>
<td>Today at 20:42</td>
</tr>
<tr>
<td>✓</td>
<td>ubuntu_desktop_610_a</td>
<td>ubuntu_desktop_610_a</td>
<td>Today at 20:42</td>
</tr>
</tbody>
</table>
Landscape Performance Monitoring
Landscape User Management

<table>
<thead>
<tr>
<th>Login Name</th>
<th>UID</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>avahi</td>
<td>105</td>
<td>Avahi mDNS daemon</td>
</tr>
<tr>
<td>avahi-autoipd</td>
<td>104</td>
<td>Avahi autolp daemon</td>
</tr>
<tr>
<td>backup</td>
<td>34</td>
<td>backup</td>
</tr>
<tr>
<td>bin</td>
<td>2</td>
<td>bin</td>
</tr>
<tr>
<td>cupsys</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>daemon</td>
<td>1</td>
<td>daemon</td>
</tr>
<tr>
<td>dhcp</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>games</td>
<td>5</td>
<td>games</td>
</tr>
<tr>
<td>gdm</td>
<td>109</td>
<td>Gnome Display Manager</td>
</tr>
<tr>
<td>gnats</td>
<td>41</td>
<td>Gnats Bug-Reporting System (admin)</td>
</tr>
<tr>
<td>haldaemon</td>
<td>107</td>
<td>Hardware abstraction layer</td>
</tr>
<tr>
<td>hpilp</td>
<td>108</td>
<td>HPUP system user</td>
</tr>
<tr>
<td>irc</td>
<td>39</td>
<td>ircd</td>
</tr>
<tr>
<td>klog</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>list</td>
<td>38</td>
<td>Mailing List Manager</td>
</tr>
<tr>
<td>ls</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>
Landscape

• Even a monkey can run it.
• Give Canonical feedback and suggest improvements.
• Seriously, check it out!
Other OSS Administrative Consoles

• **eBox** – Web GUI for systems/network administration.

• **Webmin** – Web GUI for systems/network administration.

• Optimally run with SSL and lock down with UFW (iptables/netfilter)
Ubuntu

Enterprise Integration
Likewise Enterprise

• Likewise Enterprise - integrates Linux, Unix and Mac with AD
• Active Directory based Authentication/Authorization
• Group policy management - Full integration with Group Policy Management Console/Group Policy Object Editor
• Directory Migration
Likewise Enterprise

• Import from passwd/group files. Map UID's and GUI's to users in AD
• Centralized reporting and audit
• SSO
• Support with Kerberos and LDAP. Ex. Apache, Samba, NFS, SSH, JBoss, Tomcat, etc.
Try it out..

• It's FOSS so download, alter, contribute and hack to your hearts content.

• Remember there are no CAL's or limits on CPU's, users, or anything.....
Great Books

• The Official Ubuntu Book
• Ubuntu Server in Action
  • http://www.manning.com/galvin/
• Beginning Ubuntu Server Administration
  • http://apress.com/book/view/1590599233
• Pro Ubuntu Server Administration
  • http://apress.com/book/view/9781430216223
Conclusion

• Ubuntu server is an amazing mature, stable, secure and enterprise ready server operating system.

• Go check it out!
Thanks to..

- Ubuntu community.
- Canonical team – specifically SABDFL, Nick Barcet and Steve George.
- The FOSS community (developers, documenters, advocates, users, etc.) everywhere.
- DLSLUG!
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