



| Linux and Open Source at IBM

# An Introduction to Linux and Open Source



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**IBM Systems**  
*Simplify your IT.*

## 9200 – An Introduction to Linux and Open Source

- **Linux and Open Source continue to see substantial growth around the world**
- **This session will provide an overview of Open Source and an introduction to Linux (including concepts and terminology)**
- **Jim will also provide an overview of Novell's SUSE Linux Enterprise (SLE) and Red Hat Enterprise Linux (RHEL)**

## Topics

- **Introduction to Open Source**
- **Introduction to Linux**
- **Novell SUSE Linux Enterprise**
- **Red Hat Enterprise Linux**
- **Linux and Open Source on the Web at IBM**



| Linux and Open Source at IBM

## Introduction to Open Source



<http://ibm.com/developerworks/opensource>

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## What is Open Source technology?

<http://www.opensource.org>



- **In a word, Open Source is collaboration – more specifically, it's public collaboration on a software project**
- **According to the Open Source Initiative (OSI), it can be defined this way:**
  - *“Open source promotes software reliability and quality by supporting independent peer review and rapid evolution of source code. To be OSI certified, the software must be distributed under a license that guarantees the right to read, redistribute, modify, and use the software freely.”*
- **Open source can also apply to the popular movement of individuals, organizations, and companies that seek to put such software into mainstream usage**

## What guides Open Source licensing?

<http://opensource.org/licenses>

- **According to the Open Source Initiative, Open Source consists of 10 points, which are reproduced below**
  1. Free redistribution
  2. Source code
  3. Derived works
  4. Integrity of the author's source code
  5. No discrimination against persons or groups
  6. No discrimination against fields of endeavor
  7. Distribution of license
  8. License must not be specific to a product
  9. License must not restrict other software
  10. License must be technology-neutral



## Why is Open Source technology important?

- **Can be a major source of innovation**
  - Innovation can happen anywhere – any time
  - Development through “open communities” leads to potentially broad ideas and creativity
- **Community Approach**
  - The Internet has changed how we address technical innovation
  - Shapes technical leaders thinking and approach to broad collaboration
- **Good approach to developing emerging standards**
  - Popular Open Source projects can become de facto / open standards
  - Wide distribution/deployment
- **Enterprise customers are asking for it**
  - Increase choice and flexibility – adoption/use of Open Source can reduce time to market

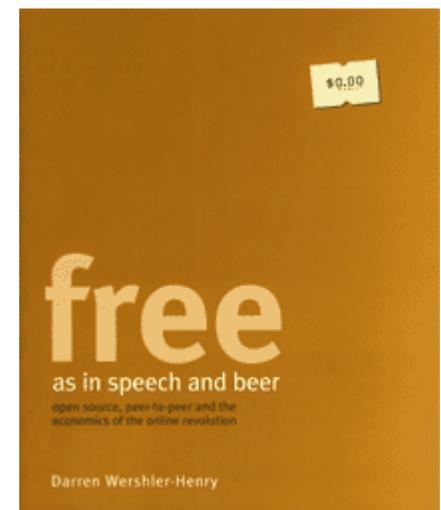
## What is FOSS?

- **FOSS stands for Free and Open Source Software**
  - Sometimes referred to as FLOSS (Free/Libre and Open Source Software)
- **This term is used for software that satisfies either the definition in free or the definition in Open Source, when there is no need to make a distinction**
- **For an excellent study of Open Source Software and Free Software see David Wheeler's paper**
  - [http://www.dwheeler.com/oss\\_fs\\_why.html](http://www.dwheeler.com/oss_fs_why.html)

## What does Open Source have to do with “free beer” and “free speech”?

- The English word “free” is tricky in that it can mean either freedom or gratis, as in no-cost to the taker
- When Open Source proponents speak, they often have to preface their remarks so the listener knows if the speaker is referring to “free” as in “free speech,” which is a matter of policy, or “free” as in “free beer”
- As any college student can report, someone needs to bear the cost of creating the beer (or software) while others consume the beer (or software) and enjoy it with no out-of-pocket costs

<http://freeasinspeechandbeer.com>



## How may I get started with Open Source?

- The decision to start developing Open Source software is a political and licensing decision and less so one of technology
- See the OSI list of approved Open Source licenses and make your selection according to your needs and plans for your project
- ***“Open source licensing, Part 1: The intent”***
  - <http://ibm.com/developerworks/opensource/library/os-license/>
- ***“Open source licensing, Part 2: Academic v. reciprocal”***
  - <http://ibm.com/developerworks/opensource/library/os-license2/>
- You may want to consult with an attorney specializing in intellectual property if you find the terms of the existing licenses confusing or if you have questions

## What is LAMP?

<http://ibm.com/developerworks/edu/wa-dw-wa-lamp-i.html>

- **LAMP stands for Linux, Apache, MySQL, and PHP**
  - However, depending on who you talk to, the P can stand for Perl or Python, but in general, P is assumed to be PHP
- **LAMP has a bigger meaning, too**
  - LAMP represents a nonproprietary, flexible way to create a server-based application
  - Each of the programs comprising the term can be replaced with an alternative that best suits the needs of the application
  - Each component can be upgraded independently, although this is usually done with care and planning
  - Best of all, each program in LAMP is free, or almost free in both meanings of the word

## What language is Open Source written in?

<http://gcc.gnu.org/>

- **All of them**
- **The technology behind Open Source is not the most important element of Open Source**
- **The important element is the decision of the author or authors to release the software as Open Source and use one of the many Open Source licenses**
- **Also, there are a great many Open Source compilers or languages**
  - The GNU Compiler Collection includes front ends for C, C++, Objective-C, Fortran, Java, and Ada
  - PHP, Perl, Python
  - Many, many more (just Google this subject!)

## Is Open Source software legal?

<http://www.llrx.com/features/opensource.htm>

- **Yes, and almost everyone who uses e-mail or surfs the Web is an Open Source software user**
  - Most e-mail passes through an Open Source server during its travels across the Internet
  - Most Web servers rely on Open Source software
  - Google is based on Open Source
  - As OSI points out, the running gears of the Internet, including the mail transports, Web and FTP servers, are virtually all Open Source-based
- **Open source software is not warez, which is software distributed without permission of the copyright holders or a proper license**
- **There have been many discussions about Open Source violating patents or copyrights, but this is almost certainly true (if unintentionally so) of most “private source” software**
  - Talk to an Intellectual Property Lawyer if you have concerns

## What are IBM's Open Source efforts?

<http://ibm.com/developerworks/views/opensource/projects.jsp>

- **In a nutshell, IBM is a significant force supporting Open Source innovation and collaboration**
  - The company participates in more than 175 collaborative projects contributed to the Open Source community, including Eclipse, Derby, Geronimo, and Globus
  - IBM contributed 500 patents into a “patent commons” for development and innovation
  - IBM has invested more than \$1 billion in Linux development
  - IBM has Open Source licenses – the Common Public License and the IBM Public License
    - IBM also releases under many other licenses, including GPL

## 9+ years of community innovation with IBM

1999 – 2001	2002 – 2003	2004 – 2005	2006 – 2008
<ul style="list-style-type: none"> <li>▪ IBM forms Linux Technology Center</li> <li>▪ Leads Apache projects Xerces (XML4J), Xalan, SOAP</li> <li>▪ Creates OSI-approved IBM Public License</li> <li>▪ Strategic participation in Mozilla</li> <li>▪ IBM becomes founding member of OSDL</li> <li>▪ Founder of Eclipse.org and Eclipse Consortium</li> <li>▪ Creates internal bazaar using OSS methodology</li> </ul>	<ul style="list-style-type: none"> <li>▪ Linux contributions to scalability (8-way+), reliability (stress testing, defect mgmt, doc)</li> <li>▪ Leads Apache projects: Web Services (WSIF and WSIL), Pluto (Portlet API) and WSRP4J (Remote Portal)</li> <li>▪ Leads Eclipse projects GEF (editing), EMF (modeling), XSD (XML Schema), Hyades (testing), Visual Editor, AspectJ, Equinox rich client</li> <li>▪ Globus Toolkit contributions for OGSA, OGSF</li> </ul>	<ul style="list-style-type: none"> <li>▪ IBM and Novell/SUSE achieve security milestone (EAL4+ and COE compliance)</li> <li>▪ Eclipse becomes independent as Eclipse Foundation, Inc. – IBM contributes UML2, Voice Tools, Aperi, COSMOS, Ajax Tools Platform</li> <li>▪ Globus Toolkit 4 is WS-I compliant</li> <li>▪ Pledged 500 patents to open source</li> <li>▪ Partner with Zend PHP</li> <li>▪ IBM enhances Apache partnership</li> </ul>	<ul style="list-style-type: none"> <li>▪ IBM contributes accessibility code to Firefox</li> <li>▪ IBM becomes founding member of Eclipse Aperi project</li> <li>▪ Leads Open AJAX initiative</li> <li>▪ Leads Apache Tuscany project and Perl PHP SOA</li> <li>▪ IBM donates code for user-centric security management to Eclipse Higgins</li> <li>▪ IBM donates code for medical record management to Eclipse Open Healthcare Framework (OHF)</li> <li>▪ IBM announces support for Eclipse.org version of Eclipse</li> <li>▪ IBM contributes to Apache Lucene project and announces OmniFind Yahoo! Edition</li> </ul>
<p><b>More than 1000 IBM developers involved in OSS projects</b></p>	<p><b>IBM leads 80+ OSS projects</b></p>		<p><b>IBM contributes to 175+ OSS projects</b></p>



| Linux and Open Source at IBM

## Introduction to Linux



<http://ibm.com/developerworks/linux>

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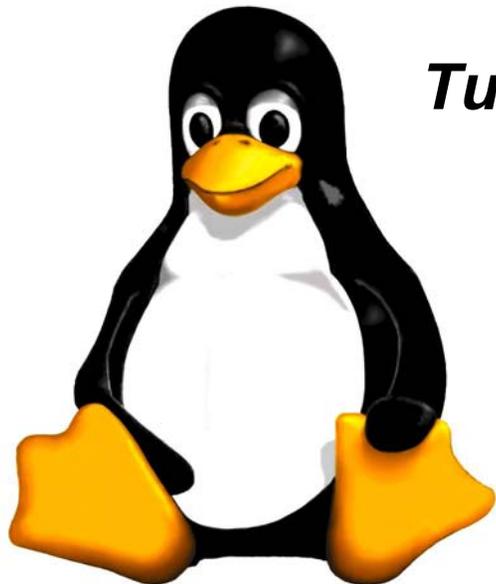
## So, what is Linux, anyway?

- In the simplest terms, Linux is an operating system
- It was created in October 1991 by a University of Helsinki student named Linus Torvalds (Linux stands for Linus's UNIX)
- Linux itself is actually just the kernel; it implements multitasking and multiuser functionality, manages hardware, allocates memory, and enables applications to run



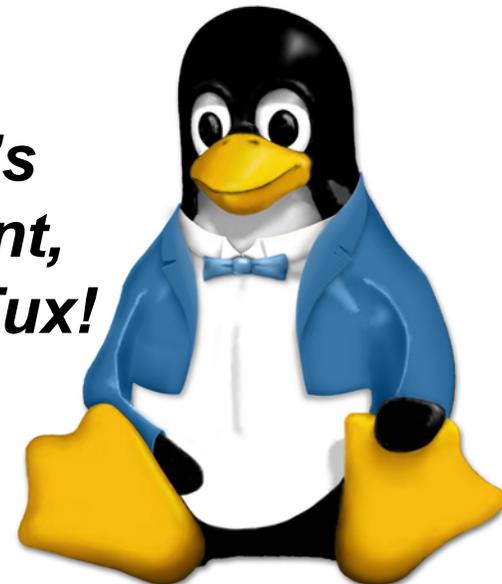
## Tux?

- When asked what he envisioned for a mascot, Linus Torvalds replied, “You should be imagining a slightly overweight penguin, sitting down after having gorged itself, and having just burped. It’s sitting there with a beatific smile – the world is a good place to be when you have just eaten a few gallons of raw fish and you can feel another burp coming.”



*Tux*

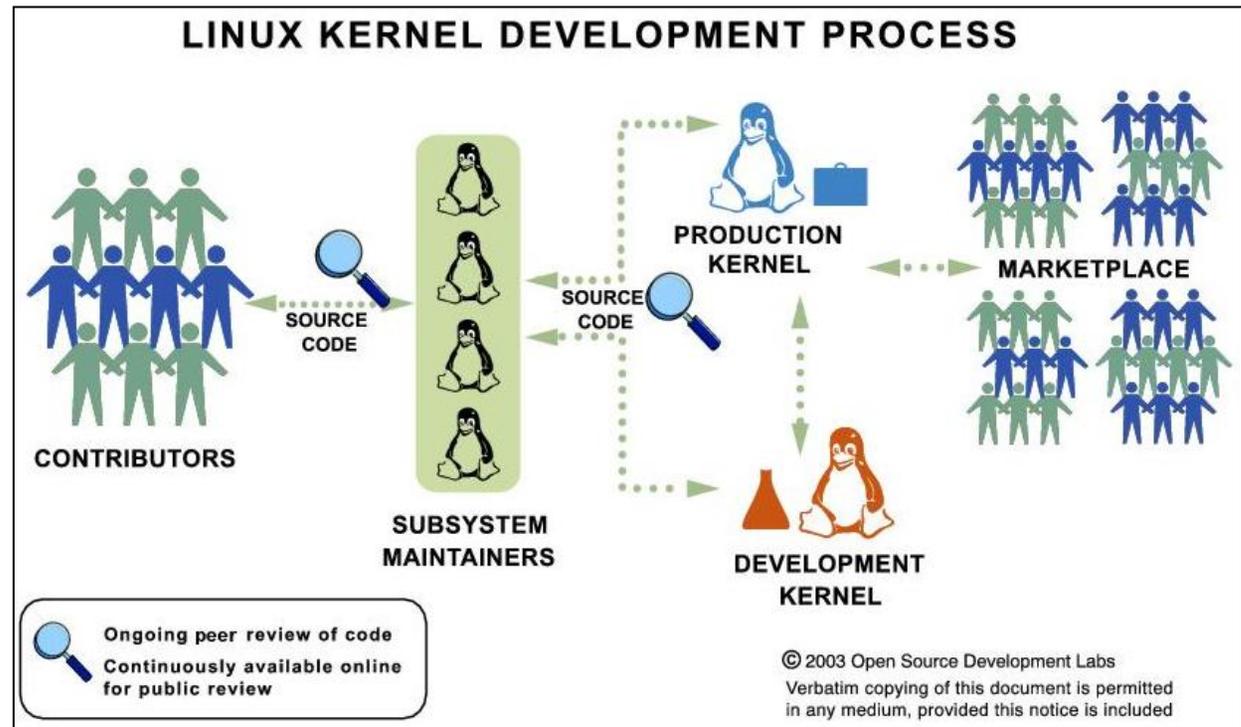
*IBM's  
variant,  
Blue Tux!*



## Do I care about the Linux kernel?

<http://ibm.com/developerworks/linux/library/l-linux-kernel/>

- The average user will never be interested enough in any operating system to want to know about things like kernel internals
- Only the truly dedicated – those who have no personal lives, or those who are being paid to do this kind of work – are going to want to explore these intricacies



## Linux distributions and GNU

- A typical Linux distribution includes the Linux kernel, but it also contains many application programs and tools
- Many system- and user-level tools found in a Linux distribution come from the Free Software Foundation's GNU project (GNU standing for "GNU's Not UNIX")
  - <http://www.gnu.org/>
- Both the Linux kernel and the GNU tools suite are released under the GNU General Public License, or GNU GPL
  - The GNU GPL is a way of setting computer code free so that the people who use that code may meddle and experiment with it to their hearts' content



## What is the difference between UNIX and Linux?

- **Invented at AT&T Bell Labs in 1969, UNIX (the name is a play on the earlier “Multics” operating system) is a robust, flexible, and developer-friendly computing environment**
- **Written originally for the Digital Equipment Corporation (DEC) family of PDP microcomputers, UNIX has taken over roles in all areas of computing**
- **Some twenty-odd years into its history, UNIX began to be eclipsed – in some of its roles, anyway – by Linux**
  - Linux is not UNIX; it is merely very UNIX-like
  - For some jobs, you want Linux – for others, you still want UNIX
- **UNIX and Linux play very well together, and well-written programs are extremely easy to port between the two systems**

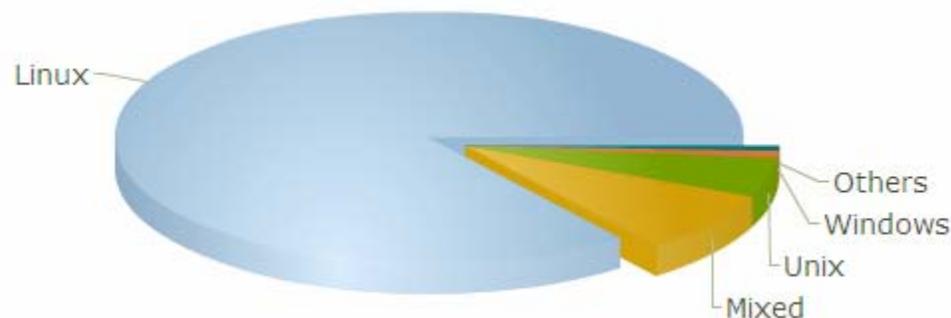
## Why is Linux important?

- **Because it is free software, licensed under the GNU General Public License, Linux obviates the need for programmers to keep reinventing the operations layer with each new project**
- **The GNU family of tools provide royalty-free bricks and mortar with which to begin building independent projects**
- **Critics of free software often voice fears that the freedoms and low cost of free software will lead to economic disaster for the computing sector**
- **However, it is just as likely – if not more likely – that free software will do for the world of computing what Gutenberg’s printing press did for the world of Letters**

## Linux dominates in super computing

### *Top500.org as of June 2008*

Operating system Family	Count	Share %	Rmax Sum (GF)	Rpeak Sum (GF)	Processor Sum
Linux	427	85.40%	8465100	1.3E+07	1408054
Windows	5	1.00%	159264	211320	25472
Unix	25	5.00%	619912	874185	73174
BSD Based	1	0.20%	35860	40960	5120
Mixed	40	8.00%	2391451	2941095	897127
Mac OS	2	0.40%	28430	44816	5272
<b>Totals</b>	<b>500</b>	<b>100%</b>	<b>11700017</b>	<b>17445380</b>	<b>2414219</b>





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## What can I do with Linux?

- **What you want out of your Linux system will determine which Linux system you want and how many layers of complexity you need to understand before you begin to work with it**
- **Linux is an excellent learning platform to do kernel hacking, to learn UNIX, or to learn programming; many tools and applications are available to play games, to do desktop publishing, or just to hang out doing e-mail and Web browsing**
- **Linux is a popular platform for everything from middleware to embedded computing and clusters, to mainframes, supercomputers and gadgets**

## How do I get started with Linux? ...

<http://ibm.com/developerworks/linux/newto/>

- **If you are completely new to Linux, or if you are using Linux as a desktop operating system, you need to learn at least some basics about system administration and security**
- **Linux does not promise to hold your hand or to clean up after you: you have to take care of the system yourself**
  - Luckily, basic maintenance and basic security are pretty easy
- **In many ways, Linux and UNIX administration is today much easier than administration for popular commercial personal operating systems because it is much more transparent**

## ... How do I get started with Linux?

<http://ibm.com/developerworks/linux/newto/>

- **While Linux does have several windowing environments that allow you to perform administration, the most straightforward way to control the system is at the command line**
  - Built in to the structure of the command-line environment are dozens of commands and several text-based help systems.
- **There are a great many resources on the Web and in the real world to help you get started with Linux**
  - There are Web sites, articles, and books devoted to the subject, and Linux User Groups (also known as LUGs) meet in cities and countries around the world – and are well-known for being very friendly even to very new users

## How can I use Linux in application development?

- **Linux includes the GNU Project's suite of programming and debugging tools – absolutely free**
- **The Eclipse foundation's very large set of development tools are available for Linux**
  - *<http://www.eclipse.org/>*
- **Many commercial programming packages are also available**
- **If you are using Linux as a development platform, do not skip first learning administration and security**
- **Linux is by nature standards compliant**
  - Linux developers as a rule place very high importance on keeping the operations layer, as well as those built atop it, open, interoperable, and standards friendly

## What programming languages can I use on Linux?

- **In addition to steadfast stalwarts like Fortran and C/C++, many scripting and other computer languages are at home on (or were even designed to work best with) Linux**
  - The most popular include Perl, Python, and PHP
- **Technologies such as Java and XML run great on Linux, as do any number of more esoteric programming languages, from Logo and Rebol to Smalltalk and many more**

## How can I continue to improve my Linux skills?

*<http://ibm.com/developerworks/linux/> then click on Training*

- **If you want to use Linux as a platform for a very advanced application or application set, you will be interested in aspects of the system such as kernel hacking, the differences between various filesystems, and other nitty-gritty details**
- **Another skill set that is often needed for high-end applications (or games) is fine-tuning a Linux machine, cluster, or network for optimum performance – this includes expertise in things such as multiprocessing, threading, clusters, and other arcane but sophisticated points of system administration**
- **Understanding these aspects of Linux aren't quite as gritty as actual kernel hacking, but can nonetheless get pretty hairy**

## What IBM tools are available for Linux?

- **Linux is a superior operating system on which to run standard applications – from office applications such as word processors and spreadsheets; to database systems; to Web publishing and serving environments**
- **IBM software products such as DB2, Lotus, Tivoli, Rational and WebSphere all run on Linux, and IBM is not the only industry leader to recognize that Linux is an excellent platform for middleware**
- **Though misunderstood and very often maligned – at least, among the self-proclaimed digerati – middleware is an essential (and for many computer users, the essential) reason for having computers around in the first place**
- **The open nature of Linux allows middleware vendors to fine-tune solutions to meet users' needs in ways that no closed system allows**

# What do the analysts say about Linux?

## ■ Reports from :

- Gartner
- Deutsche Bank
- Forrester
- IDC
- DH Brown
- Goldman Sachs
- Bloor Research
- Wall Street
- IBM

## ■ Articles in :

- Business Week
- Financial Times

**Figure 1. Linux Carries Every Datacenter Workload**

**1-1 "Are you planning to increase your Linux usage in the next two years?"**

No. usage decreases	2%
Don't know	6%
No. usage stays flat	20%
Yes	72%

Base: 50 51 billion-plus companies

**1-2 "Where are you running Linux today?"**

Web/email tier	44%
App tier	40%
Infra-structure tier	26%
Client tier	24%
Data tier	6%
Nowhere	6%

Base: 50 51 billion-plus companies (multiple responses accepted)

Source: Forrester Research, Inc.

**Technology: Infrastructure Software United States**

**Linux handbook**

**WholeView™ TechStrategy™ RESEARCH**

**Linux: Questions And Answers For Execs**

Linux will go mainstream in the datacenter in 2003. Why? Because the open source OS delivers Unix reliability at Intel prices and has strong support from vendors like HP, IBM, Oracle, and SAP. But execs still wonder about the right Linux strategy.

**Deutsche Bank**

**Emerging Themes**

**Linux**

Enter the penguin

**waters**

**Research Brief**

**Linux Is Ready: IBM's Strategy**

**March 2003**

**The Linux Tipping Point**

**wating the Linux Charge**

## Analyst reports abound – pick wisely!



## What lies ahead for Linux?

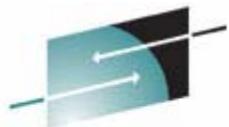
[http://apcmag.com/7012/linus\\_torvalds\\_talks\\_about](http://apcmag.com/7012/linus_torvalds_talks_about)

- **Linux's openness and flexibility lend its use to work in laboratories and other research facilities on the bleeding edge of revolutionary technological change**
- **Linux can easily be clustered or customized for highly original experiments or prototypes, simulations, or tests; and the vast array of free software tools that Linux was created to work with can be used in the same creative way**
- **Even with all of the exciting new technologies that are being developed today – from Grid computing and wireless voice applications to artificial intelligence and Quantum computing – the potential and promise of the computing age in which we live is still largely untapped**
- **Linux's robust and open flexibility means that it will remain at the forefront of the development frontier for years to come**



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## **SUSE Linux Enterprise Server 10 SP2**

### *New features: General*

- **Security patches/bug fixes**
- **Updated version of virt-manager**
- **libvirt library updated to version 4.0, contains NUMA**
- **virt-viewer is added**
- **AppArmor updated to latest version**
- **Subscription Management Tool (SMT)**

## **SUSE Linux Enterprise Server 10 SP2**

### *New features: General*

- **Heartbeat adds failover functionality**
- **HPI STONITH module of Heartbeat enabled**
- **IPv6 enhancements**
- **Support for network and storage drivers, new audio/graphics devices**
- **Download SP2 10 Features:**
  - [www.novell.com/linux/sp2highlights.html](http://www.novell.com/linux/sp2highlights.html)

## ISV Applications Update

- **Novell® ISV certifications program team**
- **Targeted ISV application list — most important at all times**
- **Novell ISV catalog online**
- **Certified ISV applications growing at double digit rates**



## Linux and Open Source at IBM



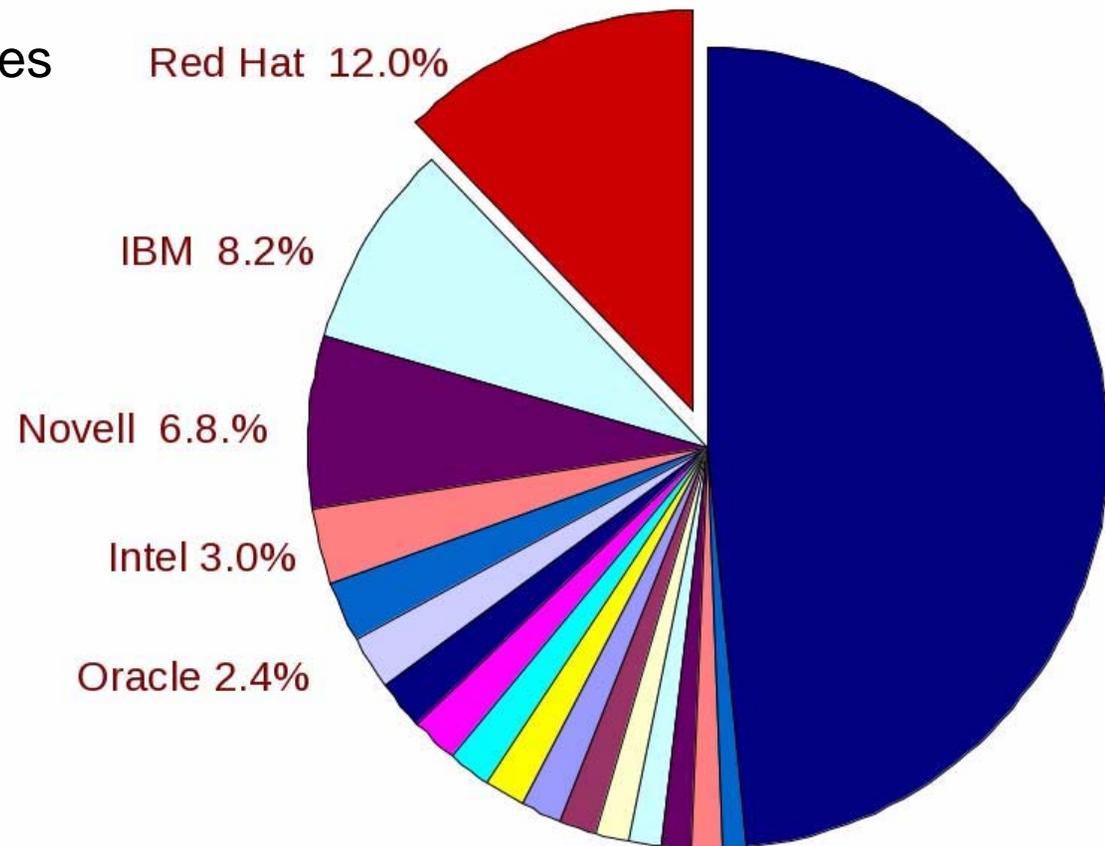
<http://www.redhat.com/rhel/server/>

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## Red Hat development model

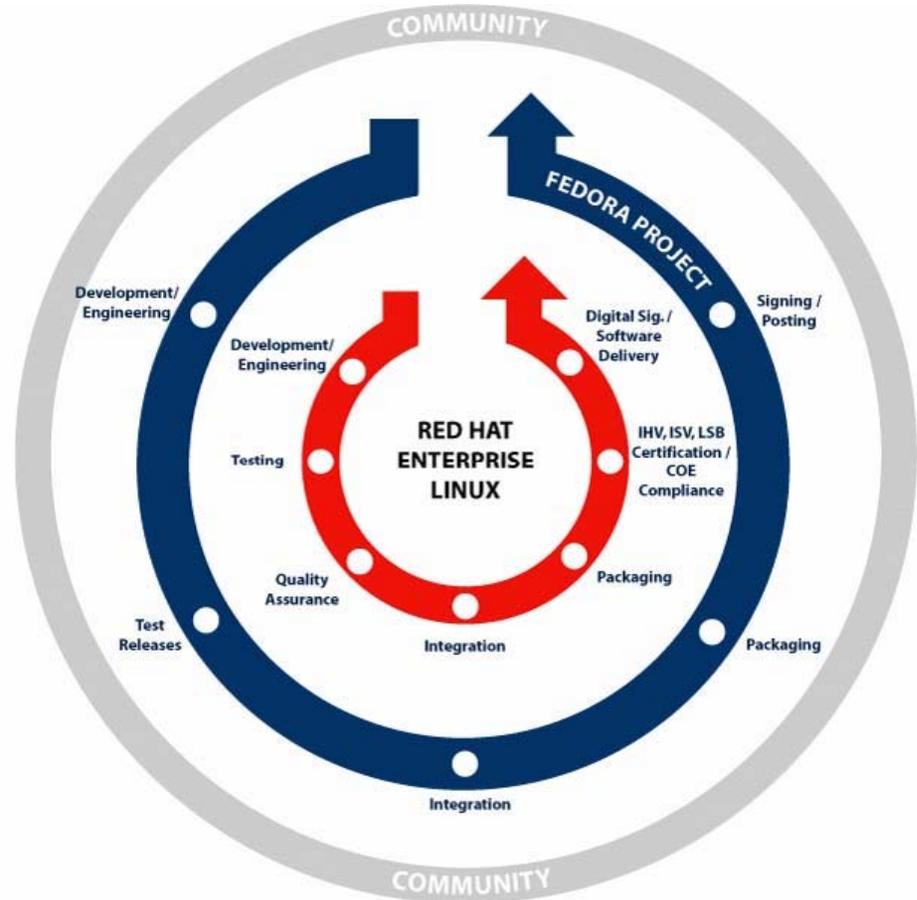
### ■ Community

- Development with “upstream” communities
- Kernel, glibc, etc
- Collaboration with partners, IBM, open source contributors



## Red Hat development model

- **Fedora**
  - Rapid innovation
  - Latest technologies
  - Community supported
  - Released ~6mo cycles
- **Red Hat Enterprise Linux**
  - Stable, mature, commercial product
  - Extensive Q&A, performance testing
  - Hardware & Software Certifications
  - 7yr maintenance
  - Core ABI compatibility guarantee
  - Major releases 2-3yr cycle



## Extended product lifecycle

	Years 1-4	Year 5	Years 6-7
<b>Security patches</b>	X	X	X
<b>Bug fixes</b>	X	X	X
<b>Hardware enablement</b>	Full	Partial	None
<b>Software enhancements</b>	X		

## Red Hat Enterprise Linux 4.7

*Announced Thursday, July 24 2008*

- **2.6.9-78 Kernel Stream**
- **Added AIDE**
- **Ability to generate SHA-256 and SHA-512 password hashes**
- **Updated zFCP driver to include bugfixes**
- **Updated qdio driver to fix zFCP/SCSI write to IO stagnates on LPAR**
- **/proc/sys/vm/nfs-writeback-lowmem-only param to fix NFS read performance**
- **/proc/sys/vm/write-mapped to help select faster NFS read performance**
- **autofs5**
- **N\_PIV is waiting development acceptance for 4.8 (Already in RHEL5)**
- **[https://rhn.redhat.com/network/software/download\\_isos\\_full.pxt](https://rhn.redhat.com/network/software/download_isos_full.pxt)**

## Systems management – Red Hat Network

- **A systems management platform designed to provide complete life cycle management of the operating system and applications**
  - Provision/re-provision machines without touching them
  - Manage 1,000 systems as easily as 1
  - Ensure security fixes / config |changes applied consistently across enterprise
- **9290 Managing Your Red Hat Enterprise Linux Guests with RHN Satellite**
  - Thu, 3:00pm, Convention Center, Concourse Level, Room D





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## Linux and Open Source on the Web at IBM



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<http://ibm.com/linux>

United States [ change ]

IBM

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Welcome Mr. Jim Elliott [Not you?] [ IBM Sign in ]

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Linux distribution partners

IBM & the Linux Community

Migrating to Linux

IBM Linux Technology Center

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Business partner programs

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## Linux & IBM

Unleash the power and flexibility of community innovation in your business

**Why IBM**

IBM is one of the top commercial contributors to Linux, bringing over 15,000 Linux customer engagements and over 3,000 Sun Solaris migrations to Linux, an unparalleled wealth of technical expertise, flexibility, and business performance.

Why Linux?	Why IBM:
Flexibility, choice, and TCO with a world class enterprise operating system.	IBM supports Linux on all IBM servers, storage and middleware, offering the broadest flexibility to match your business needs.
Community innovation integrates leading edge technologies and best practices into Linux.	IBM is a leader in the Linux community with over 600 developers in the IBM Linux Technology Center working on over 100 open source projects in the community.
Linux offers a future-proof, long-term strategic platform. All major server and middleware vendors support the Linux platform.	IBM offers the broadest range of server and middleware products for Linux in the industry.

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Ask the experts

Get answers to your questions and expert advice about Linux solutions from IBM.

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# IBM Software on Linux

<http://ibm.com/software/linux>



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← Software

Software > IBM software for Linux

## IBM software for Linux

**Why Linux?**  
**FLEXIBILITY. PERFORMANCE. INNOVATION.**

→ Learn how Linux solutions can transform your desktops, servers and data centers.

**Why IBM Middleware**  
Linux and IBM Middleware provide flexibility, reliability, security and cost efficiencies to an on demand business.  
→ More

**IBM open collaboration client solution**  
IBM offers best of breed collaboration software, and associated services that provide you flexibility and choice.

→ IBM Point of View on desktops of the future and How to Get Started Today (1.09 MB)

→ IBM open collaboration client solution web page

→ IBM open collaboration client solution powered by SUSE Linux

**IBM Middleware portfolio**

- Information Management
- Lotus
- Rational

**Related links**

- IBM Linux Portal
- IBM Business Partners
- Developers
- ISVs
- Warranties and licenses

**Linux solutions**

- IBM Middleware Portfolio
- Small & Medium Business
- Linux resource center

**Download**

Test drive Lotus Notes 8 running on Novell with this bootable DVD.  
→ Learn more

**IBM TV**  
→ Tune in

→ IBM TV: Why IBM and Linux? Watch the videos on IBM TV.

**Matrix**

IBM MIDDLEWARE AVAILABLE ON LINUX PRODUCT MATRIX

# IBM developerWorks for Open Source

<http://ibm.com/developerworks/opensource>

The screenshot shows the IBM developerWorks website for Open Source. The main navigation bar includes links for Home, Solutions, Services, Products, Support & downloads, and My IBM. A search bar and a country/region selector are also present. The left sidebar contains a list of categories, with 'Open source' highlighted and a red arrow pointing to it. The main content area features a 'Top story' article titled 'Configuring and adding menu items in Eclipse V3.3', updated on 19 Feb 2008. Below this are several articles related to PHP frameworks, Grails, and Eclipse. The right sidebar contains sections for 'My developerWorks' (Welcome guest, Sign in, Register), 'Top project resources' (Apache Derby, Apache Geronimo, Eclipse, PHP), 'Spotlight' (alphaWorks Services, Apache Tuscany V1.1), and 'Editor's picks' (Readers' choice, Create iPhone apps).

# IBM developerWorks for Linux

<http://ibm.com/developerworks/linux>

The screenshot shows the IBM developerWorks website for Linux. At the top, there's a navigation bar with the IBM logo, a search bar, and a 'Country/region' selector. Below the navigation bar, there's a main header with 'Linux' and 'Updated 17 Feb 2008'. The main content area features a 'Top story' section with an image of penguins and a smartphone, titled 'Explore Ubuntu Mobile and Embedded (UME)'. Below this, there are several articles with titles like 'Role-based access control in SELinux', 'SNMP-based monitoring for GPFS clusters', 'Multiprocessing with the Completely Fair Scheduler', 'Networking scalability on high-performance servers', 'Application development for the OLPC laptop', and 'LPI exam 301 prep: Installation and development'. A red arrow points to the 'Linux' link in the left navigation menu. The sidebar on the right contains sections for 'My developerWorks', 'developerWorks spaces', 'Spotlight', 'Editor's picks', and 'Special offers'.

# IBM Redbooks

<http://ibm.com/redbooks/linux>

The screenshot shows the IBM Redbooks website interface. At the top, there is a navigation bar with the IBM logo, a search bar, and a dropdown menu for 'Country/region'. Below this is a secondary navigation bar with links for Home, Solutions, Services, Products, Support & downloads, and My IBM. A welcome message for 'Mr. Jim Elliott' is visible in the top right.

The main content area features a sidebar on the left with a tree view of categories: IBM Redbooks®, Drafts, Redbooks, Redpapers, Technotes, Redbooks Domains (Application Development, BladeCenter, Information Mgmt software, IBM System i, IBM System p, IBM System x, IBM System z, IBM System Storage), Linux (Lotus, Rational, Infrastructure Solutions, Tivoli, WebSphere), Residencies, Workshops, Additional Materials, How to order, About Redbooks, Contact us, Mailing list, and RSS feeds. A red arrow points to the 'Linux' category.

The main content area is titled 'Linux at IBM' and features a large green graphic with the text 'Linux and IBM Redbooks'. Below this, there are several sections:
 

- Linux Redbooks Domain**: A sub-header for the current domain.
- Latest Drafts ... show all**: A list of draft articles including 'Programming the Cell Broadband Engine Examples and Best Practices', 'Results of Quantifying the Benefit of EWLM on Load Balancing', and 'Experiences with Oracle 10g Database on Linux for zSeries'.
- New Technotes ... show all**: A list of technote articles including 'Installing Oracle 10gR2 on SLES10 Linux on System z - July 10, 2007', 'VIOS Network Install from Linux Server', and 'Using the z/VM INDICATE Command'.
- Skills Development**: A list of articles including 'Residencies' and 'Workshops'.
- New Redbooks/Redpapers ... show all**: A list of new publications including 'Linux on IBM System z: Performance Measurement and Tuning', 'Getting started with PowerVM Lx86', and 'Virtualizing an Infrastructure with System p and Linux'.
- Most popular ... show Top 15**: A list of popular articles including 'NIM from A to Z in AIX 5L', 'Linux Performance and Tuning Guidelines', and 'Up and Running with DB2 for Linux'.
- More info ...**: A link to an RSS feed with the text 'RSS feed with newest Linux related publications... More about RSS'.

At the bottom of the main content area, there is a 'What's New' section with a banner for a 'NEW GUIDE FOR SYSTEMS ADMINISTRATORS'. Below the banner, there is a paragraph of text and a bullet point: 'For more hot news, visit the Linux at IBM site.' Below this, there is a small graphic of a penguin and a person, followed by the text 'Get trained for the hot jobs. Linux training from IBM.'

## What next?

- **Familiarize yourself with the facts**
- **Establish an Open Policy**
- **Align to Open Standards**
- **View Open Source and Linux as valid alternatives for IT systems**
- **Make decisions based on business value; not hype and hope!**
- **Be prepared for change!**



## Thank you

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<http://ibm.com/linux>

<http://ibm.com/systems/z>

<http://ibm.com/vm/devpages/jelliott>

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