

Linux Desktop Applications and Cross-Platform Solutions

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Abstract

Introduction to the modern Linux desktop of commercial and Open Source Software (OSS) Graphical User Interface (GUI) applications.
BITMAP-FREE VERSION (NO SCREENSHOTS – file size reduction)

\$Id: CTS_LinuxApps_LEAP_NOBITMAPS.lyx,v 1.1 2001/11/17 16:15:52 bjsmith Exp \$

Audience

This document covers some of the applications available for the modern Linux desktop. This includes commercial, free and Open Source Software (OSS) applications with a Graphical User Interface (GUI) that may also run on other platforms such as commercial UNIX implementations or even Windows. As such, elementary references to open systems approaches, concepts and arguments may also be introduced along with the applications themselves. These discussions go a long way to explaining how Linux, OSS and open system applications are developed, and how they can drastically improve corporate efficiency, reliability and throughput.

Given the aforementioned content, the primary audience is the contemporary IT professional and corporate desktop user. It is the author's argument that the modern Linux desktop, which is an "user friendly" and most "cost effective" (using the PC's economies of scale) version of the longstanding multiuser and network-enabled UNIX(R) operating system, is the most ideal platform for the majority of corporate computing resources. This argument includes the corporate desktop and this document introduces various applications.

Since this document also includes information on popular Linux desktop applications, the typical desktop user is a secondary audience. The secondary audience should skip appropriate sections he/she has trouble following.

Disclaimer

Throughout this presentation, concepts are categorized and itemized, labels are applied and referenced and definitions are made and used. This “terminology” is of original creation by the presenter (unless otherwise noted), and in no way shape or form should be considered the best for each.

Furthermore, only the most common or relevant of each are used, listed and/or defined. There are many, lesser used and/or recognized implementations of each in existence. Their omission, in part or in whole, in this document is not due to overall ignorance or naivety, but any such generalization is made for the sake of brevity and focus on the audience for whom the content is devised.

Throughout this presentation, **THE TERMS “GNU [SOFTWARE]”, “FREE SOFTWARE”, “OPEN SOURCE SOFTWARE” AND “LINUX [SOFTWARE]” ARE OFTEN USED AS SYNONYMS TO IDENTIFY FREE SOFTWARE (WITH SOURCE CODE) THAT MAY RUN ON JUST THE LINUX/UNIX PLATFORM, OR ON MANY PLATFORMS, INCLUDING WINDOWS.**

An additional, legal disclaimer and statement is provided at the end of this document.

About the Presenter

✓ Employment History

- ✓ Current: AbsoluteValue Systems, Inc., Linux-WLAN people
- ✓ Previous: USAF 45th Space Wing, Theseus Logic, Inc., Coleman Aerospace Corp., Hard Rock Cafe Int'l, Inc., PBS&J, Inc.

✓ IT Experience

- ✓ LM/OS/2 (1990), original NT 3.1 beta tester (1992)
- ✓ Solaris/AIX (1991), Linux (1993), BSD/others (1995)
- ✓ Largely file servers for heterogeneous environments
- ✓ Contributing Author, *Samba Unleashed* (2000)

✓ OSS/Linux Desktop Application Usage

- ✓ StarOffice 3.x adopter 1996, 1998+ on Linux
- ✓ Prefers NextStep/Gnome, typeset/DTP over WP
- ✓ Heavy Dia, Galeon, Gnumeric, LyX and regular AbiWord, GIMP, KWord usage

Contents

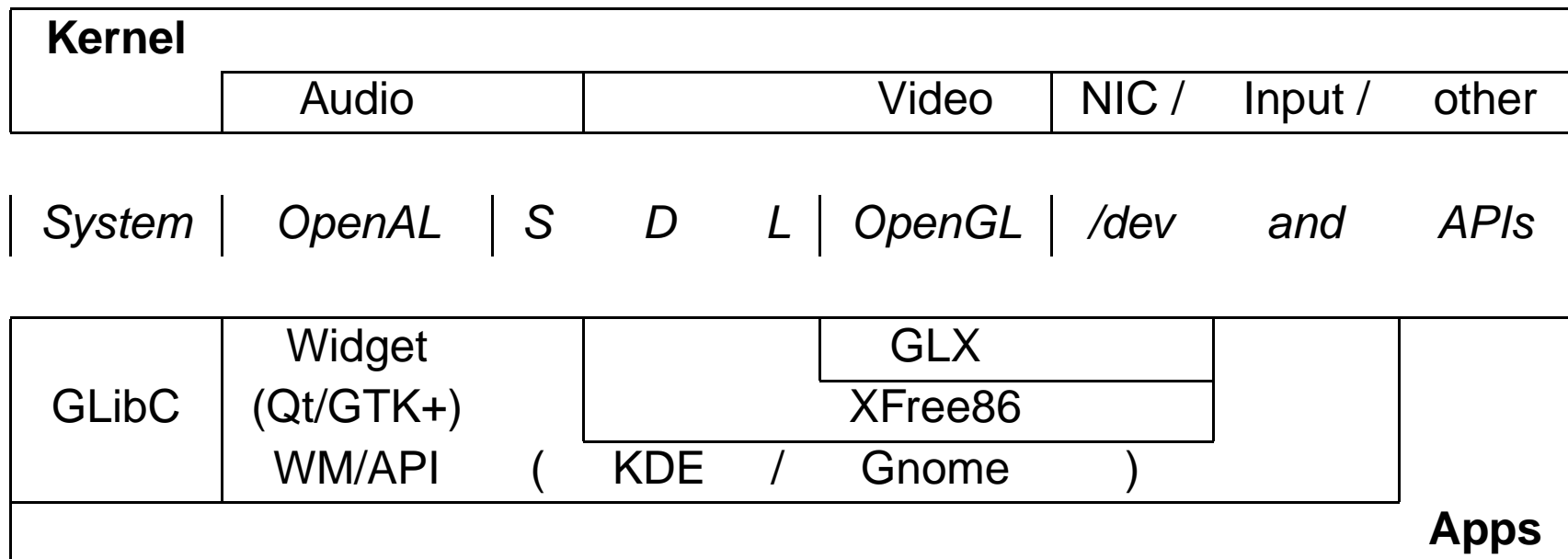
- ✓ Essential IT Information: What You Need To Know
 - ✓ Modern Linux Implementation and Open Systems “Standardization”
 - ✓ Gartner and the Case For Linux, Open Source and Commercial Support

- ✓ Linux Applications and Cross-Platform Solutions
 - ✓ Documentation and Approaches
 - ✓ Spreadsheet
 - ✓ Presentation Graphics
 - ✓ Browsing
 - ✓ Other Applications and Approaches

Modern Linux Implementation

1,000-Foot Technical View

- ✓ Strict separation of kernel and user memory = ultimate stability
- ✓ Single, standardized, protected memory API for
2D media (SDL), 3D video (OpenGL), 3D audio (OpenAL)



Modern Linux Implementation

Kernel, Library

- ✓ Linux Kernel and Linus' KISS Principle
 - ✓ Keep It Simple Stupid! Bare functionality for stability
 - ✓ Core functionality plus modular support modules (incl. drivers)
 - ✓ No programs in kernel -> keeps programs from crashing kernel
 - ✓ Can pre-empt and close any user-space program (basically anything)
 - ✓ User programs can only talk to kernel via system calls, devices interfaces
 - ✓ Ubiquitous /dev directory, single, kernel-controlled access to devices
 - ✓ Monolithic system calls for services (new in 2.4: one entry per CPU)

- ✓ GNU C Libraries (GLibC), GNU Developer "Toolchain" (GCC, etc...)
 - ✓ Provides core, commonly used functions (like core DLLs)
 - ✓ IEEE POSIX compliant (new in 2.2: 64-bit extensions on 32-bit)
 - ✓ Fully multithreaded (re-entrant), multiuser, cross-platform

Open Systems “Standardization”

A/V, Multimedia API

- ✓ Open Graphics Library (OpenGL), cross-platform 3-D video API
 - ✓ Developed by SGI for Irix OS, IrixGL -> OpenGL in early '90s
 - ✓ Mesa 3.x supports 1.2, 4.0 supports new 1.3 spec
 - ✓ True API, fully implemented in software to backfill hardware incompatibility
 - ✓ Originally adopted by Microsoft for NT, still used for professional graphics
 - ✓ Windows 95 failures led to “Direct DOS Memory Map” (Direct2D, onward)

- ✓ Simple DirectMedia Layer (SDL) cross-platform A/V API
 - ✓ Developed by Loki Entertainment, others for multimedia, gaming
 - ✓ Supported by Linux and Windows games, DirectMedia porting kit

- ✓ Open Audio Library (OpenAL), cross-platform 3-D audio API
 - ✓ Developed by Loki Entertainment, others for multimedia, gaming
 - ✓ Supported by a number of games, DirectSound porting kit

Open Systems “Standardization”

X-Windows Standard, Desktop Choice

- ✓ XFree86, X-Windows 11 Release 6 (X11R6) implementation
 - ✓ True multiuser, network integration, remote display (incl. GL on X)
 - ✓ Single standard, all other display libraries based on X libraries

- ✓ Widgets and Desktops – ***YOU* CHOOSE THE STANDARD**
 - ✓ Widgets: Basic libraries and GUI components (Qt, GTK+)
 - ✓ Desktops: Window managers, libraries and app components (KDE, Gnome)

Glibc		Non-GUI Libraries		
Xlib, GLX		XFree86 and Support		
Xt, Athena	Motif	Qt	GTK+	
twm, fvwm	mwm	kwm	Sawfish, WM, E	
* ALL CAN *	CDE	KDE	Gnome	

CO-EXIST!

Gartner and the Case For Linux

- ✓ “Not Just System Infrastructure” – Gartner
 - ✓ Unlike Novell and UNIX, Linux features server **AND DESKTOP**
 - ✓ Standardized, open, documented interfaces, including applications

- ✓ “Users Must Remain Vigilant To Avoid ... Lock-In” – Gartner
 - ✓ Proprietary vendors never offer “way out”, “upgrade cycle” tie-in
 - ✓ Reverse engineering takes years, cannot keep up with “upgrade cycle”

“Linux works on a different model and that whatever gains they can achieve **will be dependent on the support relationships with vendors and the breadth of application software—not just system infrastructure**. Linux is being viewed as an opportunity to enable users to get out from under the yoke of proprietary platforms and high software license fees and into a much more flexible and evenhanded negotiating position. But vendors will always seek new opportunities to wedge users into proprietary solutions, **so users must remain vigilant to avoid past mistakes that led to lock-in.**”

– Gartner, 2001 October, “What is the Future of Linux” (1)

The Case For Open Source

✓ Native v. Foreign and Reverse Engineering

- ✓ Network services reverse engineered by packet inspection, easy to emulate
- ✓ Applications and file formats require memory inspection, difficult to emulate
- ✓ Counter-productive, heavy-time waste to accomodate foreign applications
- ✓ Native applications = open formats = no [possible] legal issues
- ✓ Reverse engineering limited to basic interfaces like file formats
 - ✓ Again, takes years, cannot keep up with “upgrade cycle”

✓ GNU/Linux/OSS = Innovative, No Wheel Re-Invention

- ✓ OSS applications are written by users (not paid programmers) to serve a purpose that other software does not
- ✓ Rarely an one-to-one direct commercial to OSS application
- ✓ Introduces concepts, ideas, capabilities not seen in commercial world
- ✓ Downside: Re-training since applications don't act like existing ones
- ✓ Upside: Windows ports mean OSS benefits can begin today

Commercial Support

- ✓ “Linux Community,” 1999 InfoWorld Technical Support Award
 - ✓ Always a consideration outside of paid support
 - ✓ Internet Relay Chat (IRC) support in real-time

- ✓ “No major differences in ... Linux support ... compared with ... other operating systems” – Gartner
 - ✓ Gartner found twelve (12) world-wide, 24x7 support firms who support Linux
 - ✓ Wide range of software-only and OEM offerings from major, world-wide firms

“There are **no major differences in the attributes of Linux support offerings compared with support offerings for other operating systems from the companies that offer support for multiple operating systems**. IBM appears to be the only company that prices Linux support above their support for the Microsoft server operating systems.” – Gartner, 2001 August, “Linux support services: Like any other operating system?” (2)

Documentation Approaches

- ✓ Typeset – From the 16th century to the World-Wide Web
 - ✓ Two independent, but required components: *content* and *style* (format)
 - ✓ Modern-day: T_EX (c+s), HTML (c-only), SGML+DSSSL / XML+XSL (c+s)
 - ✓ Typeset languages developed over decades, SGML, 1965+; T_EX, 1979+
 - ✓ Strict standards for interop: costly repro systems, accessibility issues, etc...

- ✓ Word Processing (WP) – pre-GUI text editing to modern computing
 - ✓ Originally enhanced text editing, now application-specific formatting
 - ✓ Layout a post-thought consideration (if at all)
 - ✓ Usually no standardization for formatting, file format, nor hardcopy output

- ✓ Desktop Publishing (DTP) – post-GUI computing
 - ✓ Introduced with the advent of the GUI, graphical computing
 - ✓ Layout primary concern, aka frame-based documentation
 - ✓ File format usually non-standard, but outputs to standard publication format

Documentation Comparison

Application	Type	File	Import/Export/Pub ¹	Lic	Win?
AbiWord	WP	XML	W2K, [X]HTML	GPL	Yes
KWord	DTP	XML	W97, HTML	GPL	No
LyX	Typeset	T _E X	DB ² , RTF, PDF ¹	GPL	Yes
StarWriter	WP	XML	SO, W2K, PDF ¹	GPL ³	Yes
WordPerfect	WP	prop ⁴	W2K, PDF ¹	\$\$\$	Yes
602Text	WP	W2K	[X]HTML, PDF ¹	free	Only
FrameMaker	DTP	prop ⁴	SGML, PDF ¹	,\$\$\$\$	Yes ⁵
[MS] Word	WP	W2k	[X[HT]]ML ⁶	\$\$\$	Only

1 LyX and FrameMaker natively support PDF attributes, natively create extra PDF tags, all others graphically render PS and convert to PDF (non-markup)

2 LyX supports some DocBook/SGML creation, T_EX \leftrightarrow DocBook commonplace

3 Sun StarWriter is free vendor-release based on the GPL OpenWriter

4 WordPerfect and FrameMaker support all older file format versions

5 FrameMaker is available for some UNIX, but not Linux (expired beta exists)

6 Microsoft does not publish XMLNS/XSL, uses MS-only [X]HTML tags by default

Documentation: GnomeOffice AbiWord

- ✓ WYSIWYG Word Processor, GPL
 - ✓ Latest release 0.9.4 for Linux/UNIX, BeOS, Windows
 - ✓ Heavy focus on MSWord import/export
 - ✓ Styles, other details still being polished

Documentation: KOffice KWord

- ✓ WYSIWYG Desktop Publishing, GPL*
- ✓ Latest release 1.1 for Linux/UNIX (Windows planned*)
- ✓ Heavy focus on DTP features, capabilities (rather than MSWord import/export)
- ✓ Better than MS Publisher (has excellent document layout view), aspires to be Adobe PageMaker
- ✓ Most advanced/mature KOffice application

Documentation: LyX

- ✓ WYSIWYM* Typeset Layout/Publication, GPL
 - ✓ Latest release is 1.1.6fix3 (1.2 beta) for Linux/UNIX and Windows (w/Cygwin)
 - ✓ Based on 20 year-old T_EX, only implements about 5%, some DocBook
 - ✓ Includes styles, templates for major technical publications (AMS, IEEE, etc...)
 - ✓ T_EX processing allows native, detailed creation of DocBook [X]HTML, MathML, PDF
 - ✓ Non-traditional capabilities like presentation graphics, interactive on-line docs, etc...

Documentation: Open/StarOffice Open/StarWriter

- ✓ WYSIWYG Word Processing, GPL*
- ✓ Latest release is Build 638C/6.0beta (Open/Star*) for Linux/UNIX, Windows
- ✓ New XML+XSL File Format, Extensive MSWord, [X]HTML, MathML import/export
- ✓ Good [X]HTML publishing capabilities, Office integration

Spreadsheets: GnomeOffice Gnumeric

- ✓ WYSIWYG Spreadsheet, GPL
 - ✓ Latest release is 0.74 for Linux/UNIX
 - ✓ Near-absolute Excel 95 compatibility, 97/2000 improving
 - ✓ Better than Excel legacy text import, complete formula set
 - ✓ Most advanced/mature GnomeOffice app, Bonobo (CORBA) enabled

Spreadsheets: KOffice KSpread

- ✓ WYSIWYG Spreadsheet, GPL
 - ✓ Latest release is 1.1 for Linux/UNIX
 - ✓ Aiming for broad 1-2-3, Excel, QuattroPro support, improving
 - ✓ Increasing formula set, nice “preview” feature in file/open

Spreadsheets: Open/StarOffice Open/StarCalc

- ✓ WYSIWYG Spreadsheet, GPL*
- ✓ Latest release is 638C/6.0Beta (Open/Star*) for Linux/UNIX, Windows
- ✓ Good Excel import through 2000/XP, good formula set
- ✓ StarOffice has always lead in 3-D/OpenGL presentation features

Presentation Graphics: KOffice KPresent

- ✓ WYSIWYG Presentation Graphics, GPL
 - ✓ Latest release is 1.1 for Linux/UNIX
 - ✓ Fair PowerPoint import, WMF support, most graphics formats
 - ✓ Extensive features and options, good HTML export

Presentation Graphics: Open/StarImpress

- ✓ WYSIWYG Presentation Graphics, GPL
 - ✓ Latest release is 638C/6.0Beta (Open/Star*) for Linux/UNIX, Windows
 - ✓ Fair PowerPoint import, WMF support, most graphics formats
 - ✓ Always lead 3-D/OpenGL features, first to offer HTML export option

Browsing: W3C Amaya

- ✓ WYSIWYG Browser/Editor, GPL
 - ✓ Bleeding-edge, technology demo application from WWW standards body
 - ✓ Latest version 5.2 for Linux/UNIX, Windows
 - ✓ Creates HTML 4.01, XHTML 1.1, MathML 2.0, CSS 2, SVG

Browsing: KDE Konqueror

- ✓ WYSIWYG Browser, File Manager/Viewer and General App, GPL
 - ✓ At the core of KDE 2+, legacy-free code-base
 - ✓ MS IE-like flexible views with additional features
 - ✓ Newer versions offer IE/Netscape plug-in support, Mozilla/Gecko support*

Browsing: Gecko Engine and Mozilla

- ✓ Gecko Standards-Compliant Rendering Engine, GPL/MPL
 - ✓ Latest Mozilla version 0.9.5 for Linux/UNIX, Windows, performance enhancements
 - ✓ Off-shoots: Netscape 6 (Lin/Win), Galeon (Lin), KMeleon (Win), Embedded
 - ✓ Gnome Browser/Integration: Nautilus, auto-preview/thumbnailing of files
 - ✓ KMeleon for Windows: Gecko w/MS IE-look, MS IE bookmark/folder import

Browsing: Opera

- ✓ Standards-Compliant Browser, closed-source free/commercial*
- ✓ Latest version 5.12 for Linux/UNIX, Windows, OS/2, BeOS, various embedded
- ✓ Sleek 3-pane, tabbed layout – leading-edge standards, extensive plug-in support
- ✓ Quickly taking over embedded market

Cross-Platform Commercial: Corel PerfectOffice

✓ Commercial Cross-Platform Office Suite

- ✓ Latest release is 2002 (10) for Windows, 2000 (9) for Linux

- ✓ Linux product releases will continue despite Corel exiting Linux OS distribution

- ✓ 2000 and, especially, 2002 releases have won praise for “better than MSWord MSWord compatibility with older files”

- ✓ Excellent backward/forward Corel/WordPerfect file compatibility

- ✓ Recent Purchase Micrografx will add extensive Micrografx file compatibility

✓ WordPerfect Word Processor

QuattroPro Spreadsheet

Presentations Presentation Graphics

Paradox Database

CorelDRAW! Bitmap and Vector Graphics

Other Applications: Databases on UNIX

- ✓ UNIX Mentality: Multi-user/Network
 - ✓ Multi-user, network, high-load reliability and data integrity focus
- ✓ Microsoft / Windows vertical market uses single user Access DB
 - ✓ For multiuser, unreliable peer-to-peer methods are used (e.g., Jet)
 - ✓ Upgrade: SQL Server, still doesn't remove some peer access (e.g., mdb)
- ✓ StarOffice for Linux/UNIX, Windows
 - ✓ Includes single-user database system, Adabas
- ✓ Linux distributions come with full ACID SQL server “back-end”
 - ✓ Other GPL/low-cost SQL databases included, available (e.g., MySQL, InterBase)
 - ✓ Installed, “ready-to-use,” more and more “front-end” apps install very easily
 - ✓ Offer cost/capabilities/features advantage for vertical markets (with Rekal/Kylix)

Other Applications: Recall For Database RAD

- ✓ TheKompany Recall, Database Rapid App Dev (RAD), GPL/commercial
 - ✓ WYSIWYG form, table and other “code-free, front-end” creation on KDE
 - ✓ Ties into KDE-db/xBase support layer, transparently uses SQL “back-end”
 - ✓ Access-like WYSIWYG creation, true client/server SQL implementation

Other Applications: Collaboration and GroupWare

- ✓ UNIX Mentality: Multi-user/Network
 - ✓ Services for document control, distribution and other information passing
 - ✓ Never an application-centric/specific implementation, application-enabled

- ✓ Document Control: Traditional Revision Control
 - ✓ RCS/CVS-enabled applications, GUI tools
 - ✓ Single standard for document control, toolset

- ✓ Document Distribution: Centralized, Standardized Client/Server
 - ✓ Never peer-to-peer for control, reliability and security reasons
 - ✓ Automation is a security risk – e.g., Outlook
 - ✓ Standards-based protocols – e.g., IMAP, iCalendar, vCard
 - ✓ Bynari sells Outlook/Exchange-interoperable server

Other Applications: Evolution E-mail/PIM

- ✓ Ximian Evolution: E-mail/Personal Information Manager, GPL
 - ✓ LDAP directory, POP/IMAP E-mail, iCalendar/vCard standards-based
 - ✓ Although Outlook doesn't use iCalendar/vCard, can import/export

Other Applications: Business and Finance

- ✓ Personal Accounting
 - ✓ Personal checkbook/expense/budget programs with import/export
 - ✓ Gnome GNUCash, GPL
 - ✓ OSS limitation/issue: On-line banking requires formal support
 - ✓ TheKompany Kapital, GPL/commercial – on-line support for banking/stocks
 - ✓ Ripe profit model for OSS vendors, such features require direct support

- ✓ Business Accounting to Enterprise Resource Planning (ERP)
 - ✓ Growing pool of accounting and project management projects and works
 - ✓ SQL-Ledger, GPL
 - ✓ Multi-user, GL/AP/AR, inventorying system using PostgreSQL back-end
 - ✓ Easy-to-install, web-based front-end, remote/simultaneous access capabilities

- ✓ Point-of-sale (POS), on-line sale transaction systems, integration
 - ✓ RedHat Interchange, GPL/commercial

Links To More Information (1/6)

✓ Gartner-DataQuest Articles and Papers

- ✓ 2001 October, "What Is The Future Of Linux?"

<http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2819787,00.html>

- ✓ 2001 August, "Linux support services: Like any other operating system?"

<http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2808791-1,00.html>

✓ Office Suites

- ✓ Software602 PCSuite for Windows (15MB lightweight suite)

<http://www.software602.com>

- ✓ Corel WordPerfect Office for Linux

http://linux.corel.com/products/wpo2000_linux/

- ✓ KDE KOffice

<http://www.koffice.org>

- ✓ GnomeOffice

<http://www.gnome.org/gnome-office/>

- ✓ OpenOffice, Sun StarOffice for Linux/Windows

<http://www.openoffice.org>

<http://www.sun.com/staroffice>

Links To More Information (2/6)

- ✓ Documentation – DTP, WP, Typeset
 - ✓ GnomeOffice AbiWord Word Processor
<http://www.abiword.com>
 - ✓ KOffice KWord Desktop Publishing
<http://www.koffice.org/kword/>
 - ✓ LyX, L^AT_EX/DocBook Document Processor
<http://www.lyx.org/>

- ✓ Spreadsheet
 - ✓ GnomeOffice Gnumeric
<http://www.gnome.org/projects/gnumeric/>
 - ✓ KOffice KSpread
<http://www.koffice.org/kspread/>

Links To More Information (3/6)

- ✓ Graphics
 - ✓ GnomeOffice Dia, Sketch, Sodipodi Vector Graphics
 - <http://www.lysator.liu.se/~alla/dia/>
 - <http://sketch.sourceforge.net/>
 - <http://sodipodi.sourceforge.net/>
 - ✓ GnomeOffice The GIMP Raster Graphics
 - <http://www.gimp.org/>
 - ✓ KOffice Kivio, Kontour Vector Graphics
 - <http://www.thekompany.com/projects/kivio/>
 - <http://www.koffice.org/kontour/>
 - ✓ KOffice Krayon Raster Graphics
 - <http://www.koffice.org/krayon/>
 - ✓ KOffice KPresent Presentation Graphics
 - <http://www.koffice.org/kpresent/>

Links To More Information (4/6)

✓ Browsing

✓ W3C Amaya

<http://www.w3.org/Amaya/>

✓ KDE Konqueror

<http://www.kde.org/konqueror/>

✓ Gecko-based Galeon, KMeleon, Mozilla, Nautilus, Netscape

<http://galeon.sourceforge.net>

<http://www.kmeleon.org>

<http://www.mozilla.org>

<http://nautilus.eazel.com/>

<http://www.netscape.com>

✓ Opera

<http://www.opera.com>

Links To More Information (5/6)

- ✓ Other Applications: Database
 - ✓ Borland InterBase SQL Server, Kylix RAD Tool
 - <http://www.borland.com/interbase/>
 - <http://www.borland.com/kylix/>
 - ✓ MySQL AB
 - <http://www.mysql.com/>
 - ✓ PostgreSQL, RedHat Database
 - <http://www.postgresql.org>
 - <http://www.redhat.com/software/database/>
 - ✓ TheKompany ReCall Database RAD Tool
 - <http://www.thekompany.com/products/reCall/>

Links To More Information (6/6)

- ✓ Other Applications: Collaboration and Groupware
 - ✓ Bynari Insight Client/Server Groupware
<http://www.bynari.com>
 - ✓ CollabNet Concurrent Versions System (CVS)
<http://www.cvshome.org/>
 - ✓ g/Mac/WinCVS Front-end Client
<http://www.wincvs.org>
 - ✓ Internet Engineering Task Force (IETF) standards group
<http://www.ietf.org>

- ✓ Other Applications: Business and Finance
 - ✓ Gnome GNUCash Personal Finance Manager
<http://www.w3.org/Amaya/>
 - ✓ TheKompany Kapital Personal Finance Manager
<http://www.thekompany.com/products/kapital/>
 - ✓ SQL-Ledger GL/AP/AR Multi-user Accounting System
<http://www.sql-ledger.org>

About and License

About SmithConcepts

SmithConcepts(TM) was founded in 1992 by engineer Bryan J. Smith and specializes in system consulting, integration and public software redistribution. SmithConcepts has released various, modified RedHat distributions and repackaged numerous public domain, publicly licensed software in the popular, cross-platform RPM format.

About SmithConcepts, Inc.

SmithConcepts, Inc. (TM) is a privately held Florida corporation, incorporated in 2001 with a focus on engineering and IT consultation and services. As traditional engineers, SmithConcepts, Inc. provides direct engineering and engineering support services to aerospace, civil, software and general systems engineering firms. As IT professionals, SmithConcepts provides heterogeneous and broad, cross-platform solutions for networked, automated and other, mission-critical production environments. These services and goods are provided at a nominal fee.

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