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Linux Desktop an Alternative to Microsoft



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History

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- 1991
 - Linux is introduced and X.11 is ported on Linux
- 1998-1999
 - KDE 1.0 & GNOME 1.0 real GUI Environments for Linux
- 2001
 - Ximian 1.0 (Exchange Client)
- 2002
 - Star Office 6.0 / Open Office 1.0
 - Mozilla 1.0
 - KDE 3.0 & GNOME 2.0
- 2003
 - City of Munich switches to Linux

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What is Open Source

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- Open Source is not Linux but Linux is an Open Source software. Linux can be used with non OS Software
- Open Source is not Freeware. It is a software witch has sources available for every body
- Open Source is professional software. We can find (buy) support on OS
- Non Open Source and OpenSource software can be merged.

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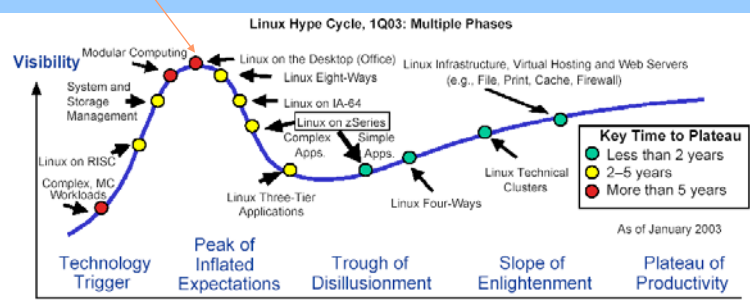
Open Source License Overview

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- Free redistribution
- Source code
- Derived work
 - Always allowed but different way of working depending on the license
- Integrity of the author's source code
- No Discrimination Against Persons or Groups
- No Discrimination Against Fields of Endeavor
 - No possibility to restrict the use to specific usages
- Distribution the license
- License Must Not Be Specific to a Product
- The License Must Not Restrict Other Software
 - Allows the mix of OS & Commercial softwares
- The License must be technology-neutral

Linux Hype Cycle

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MC = mission critical
RISC = reduced instruction set computer

Source: Gartner Research

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The Linux adoption cycle (Open Source Application Foundation)

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- **Phase 1: Highly technical users**
 - Engineers, System Administrators, Scientists, Content creators ...
 - **Now**
 - Broad-scale adoption of Linux
- **Phase 2: Transactional workers, web-centric consumers**
 - Call-Centre staff, Point of Sale workers, Car Dealers, Data Entry workers ...
 - **Starting in 2004**
 - Significant adoption of Linux
- **Phase 3: Knowledge workers, small businesses, mainstream consumers**
 - Managers, Marketing staff, Business owners, Reporters ...
 - **No major adoption in the US until 2007, if then**
 - Some adoption of Linux

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Desktop Linux

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IDC figures	
2003	9.5 Million Linux Desktops
2006	27.8 Million Linux Desktops (7% market share – 10% shipments) > To the Macintosh OS

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Munich city Government	14.000 seats
Schools in Extremadura, Spain	80.000 seats
People's PCs in Thailand	1.000.000 seats

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Technical aspects

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Linux look

```

perry@delta:~$ cd /usr/lib/qt2/
perry@delta:~$ cd /usr/lib/qt2/
perry@delta:~$ ls
LICENSE_QPL  configs      extensions  include     src
libelf.so   doc         gif         lib         tutorial
bin         examples   install     propagate   variables
  
```

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There exists different "flavours"

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There exists different packages

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Office alternatives look

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The screenshot shows the OpenOffice.org 1.0.2 desktop environment. It features several overlapping windows:

- A text document window titled 'Untitled1 - OpenOffice.org 1.0.2'.
- A spreadsheet window titled 'Test Works' containing a table with columns for 'Changement', 'Impact de l'usage', '2003', 'Croissance', and '2004'. The table lists various categories like 'Retail Stores', 'Direct', 'Other Operators', 'Total Revenue', 'Total Expenses', and 'Net Income'.
- A presentation window titled 'Gepko - Jan Knowledge' showing a 'Time Allocation' pie chart. The chart is divided into segments for 'Pride', 'Envy', 'Gluttony', 'Lust', 'Anger', 'Greed', and 'Sloth'.

 A blue box in the bottom right of the presentation window states: 'An example of Bonobo usage from various CVS modules'. The desktop background is blue with a penguin logo in the top left corner.

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Other programs

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The screenshot displays the KOffice 1.0.2 desktop environment. The main window is a calendar for March 2003, showing dates from Monday the 17th to Sunday the 23rd. Below the calendar is a task manager window with columns for 'Résumé', 'Priorité', 'Terminé', and 'Date'. Two tasks are visible: 'RDV avec Joe' and 'Docs nouveau syst'. The desktop background is blue with a penguin logo in the top left corner.

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State of the product

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- Desktop 😊
 - Gnome and KDE
- Office applications 😊
 - No MS Office – No Internet Explorer – No Outlook
 - Open Office compatible with MS-Office for text not for macros – others available
 - Mozilla, Evolution, Ximian but compatibility problems
- Thick clients 😊
 - Some are available some not (Powerbuilder)
- Hardware support 😊

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Kind of users

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- Technical users
 - Adopted by developers, administrators, scientists, 3D animators
 - No availability problems
 - Ex: Sindbad (Dreamworks) developed on 1000 Linux WS
- Transactional workers
 - If no thick client problem => a good solution
 - Differentiation with the home PC
- Knowledge workers
 - Lack of application support
 - Office usage to heavy
 - Training necessary

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Sector approach

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- SMB 😊
 - Ability to change & Sensibility to costs
 - Support and training problem
- Education 😊
 - Ability to change & Sensibility to costs
 - Interest in the concept
- Public sector 😊
 - Sensibility to costs
 - Interest in the concept
 - Problem with training and ability to change

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Different possibilities

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Windows XP W2K

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- **Low Risk**
 - Software will run or will generate the lowest modifications
- **User satisfaction**
 - Users ask what they know
 - Low training necessary
- **Cost**
 - Hardware cost quite low (standard material)
 - Licence costs still low (120 € OS OEM +/-)

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Linux

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- **Cost**
 - Licence for free
 - Support may be paid if requested
- **Risks**
 - Hidden costs : Training, user efficiency, compatibility problems
- **Applications**
 - Cannot be for general purpose
 - Well adapted to specific environment

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Winterm Kinds

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- Pure browser-based
- Winterm (also known as Citrix)
- X.11 or X-Window servers (in this world the client and the server are inverted: the terminal is the server!).
- More sophisticated machines with XP embedded, Linux or Windows CE as internal OS. Combining the pure browser, with Winterm or X.11 and the capability to run local applications.

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Don't forget hybrid solutions

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- Open Source software can be used on Proprietary OS and vice versa.
 - Open Office on Windows
 - Oracle on Linux
- Linux Server with Microsoft workstations is possible and vice versa (Samba)
- Browser based applications and some thick clients can work on Linux and Windows

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ROI & TCO calculations

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Microsoft "oriented" TCO

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Table 1: Windows 2000 and Linux Server Environment Five-Year Total Cost of Ownership by Workload (\$)

	Windows	Linux
Networking	11,787	13,263
File	99,048	114,381
Print	86,849	106,989
Web	32,305	30,600
Security	70,495	90,975

Source: IDC, 2002

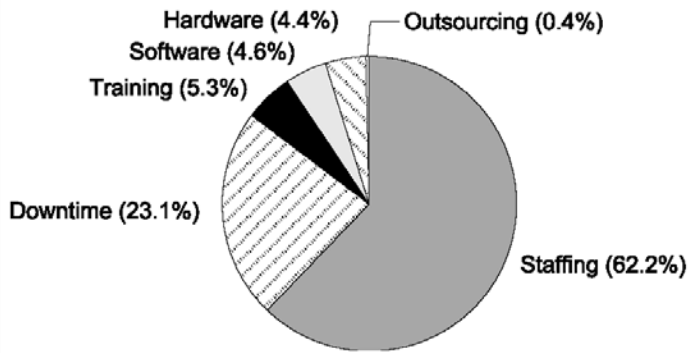
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Calculation base

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Figure 1: Server Environment Average Five-Year Total Cost of Ownership by Cost Category



Source: IDC, 2002




Linux Oriented TCO (10/2001)

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Hardware	Software	Unit Cost	Total Cost (504 users)
At work: 17-inch Display; 128 MB of RAM, 20 GB hard disk, 900-MHz Celeron	Windows 2000 Office 2000	\$1,219 \$479	\$855,792
At home: 15-inch Display with 256 MB of RAM & network card	XP/Office	\$1,436	\$574,400
Rack; 2 x 1-GHz PIII, 2 GB of RAM, 36 GB disk, dual controllers 1 TB shared storage	Windows 2000 Advanced Server Back Office 2000 499 CALs	\$84,421 \$3,999 \$232	\$204,188
School Total			\$1,059,980
Parent Total			\$574,400
Start-up total			\$1,634,380

Same calculation based on Unix server with Thin client at work and Linux Desktop at home.	\$1,134,415
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Linux Oriented TCO (10/2001) - 2


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- First advantage of Linux/Thin clients :
 - Computer is resistant to attacks and can be considered like phones
 - Windows may require much more maintenance and supervision
- Staffing Number
 - ½ person for Unix system
 - 4 persons for the Windows systems
- Amortisement of Unix on 5 years, Windows on 3

Cost Source	Windows Cost Estimate	Unix Cost Estimate	Percent Savings
Initial Capital Cost	\$1,634,380	\$1,134,415	31%
Support Staff	4 x \$45,000 x 5 years \$900,000	1 x \$65,000 x 5 \$325,000	64%
software refresh	\$1,864,008		100%
Parent total	\$1,341,209	\$507,600	62%
School total	\$3,057,179	\$951,815	69%
Total Estimate	\$4,398,388	\$1,459,415	67%

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Linux Oriented TCO (10/2001) - 3

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Cost Source	Windows Cost Estimate	Unix Cost Estimate	Percent Savings with Unix
Initial capital cost	\$11,219,808	\$9,965,000	12%
Support Staff	\$37,125,000 \$2,100,000	\$14,625,000	63%
24 month software refresh	\$7,170,000		100%
36-month hardware refresh	\$7,263,972		100%
Total Estimate	\$64,878,780	\$24,590,000	62%

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Element to put in a TCO


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- Direct costs (relatively low)
 - Hardware (live cycle?)
 - Software licences (live cycle?)
 - Maintenance (you can have maintenance for Linux)
- Central Infrastructure costs
 - Servers (storage, ...)
 - Network
- Human costs – **Everybody agrees that's the most important, nobody agrees on the values!**
 - Depends on the context
 - A lot of hidden costs

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ROI

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- All the investments must be justified by a ROI
- Never calculate a ROI compared to an other solutions : Different solutions and different costs and different returns
- ROI Elements
 - Start from the TCO (maintenance costs are in it)
 - Be careful with the hidden costs
 - See the returns in term of gain of productivity
 - Don't forget the "lost if not done"


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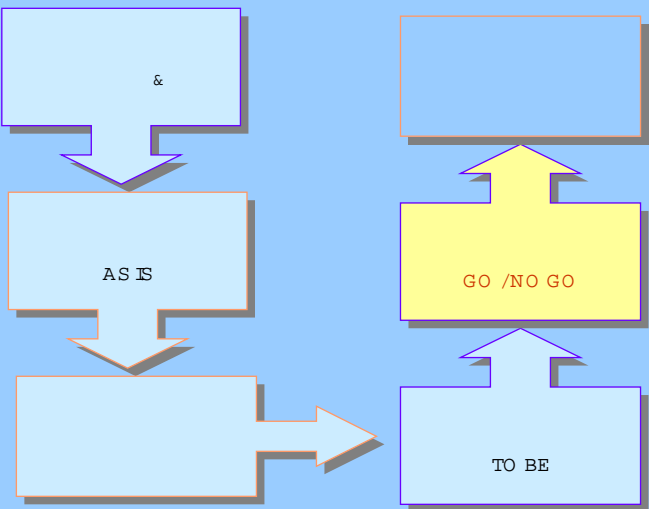
Project approach

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Approach for a feasibility study

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Workstation positioning

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Buy and adapt an existing solution. This means: to take over a solution developed for another customer or a general-purpose solution, and to install it "as is". The buy may be "buy" but may also be "acquire from a partner".

Develop a new workstation "from scratch". The development must be done taking into account mandatory elements such as applications and a security model

Update the existing workstation to the new OS. This axis comes from the situation where we totally ignore what exists currently to full transposition and testing of the current platform

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What must be on a workstation

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Application Presentation Layer

Local Application Layer

On Demand Application Layer

Platform Profile Specific Application Layer

Default Application Layer

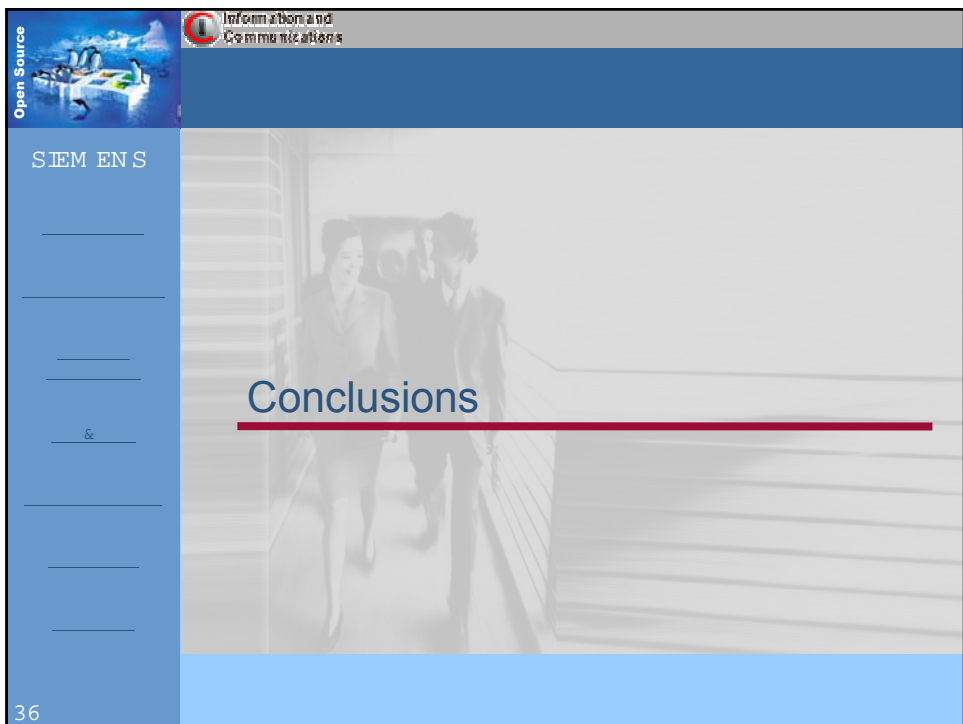
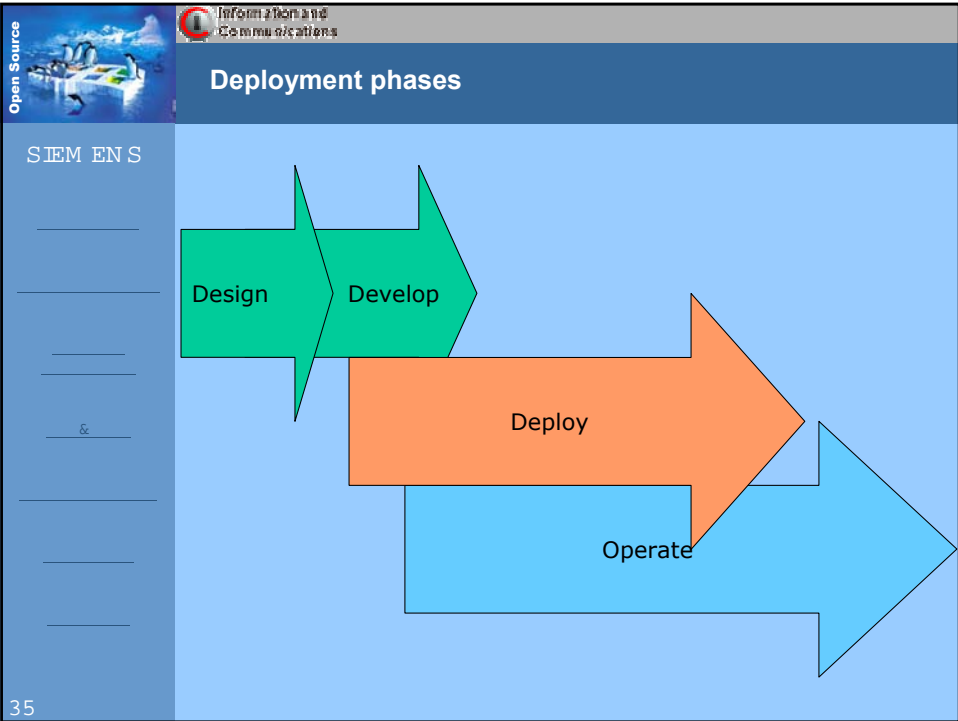
Connectivity Layer

Management Layer


Operating System Layer

Hardware Layer

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Linux Workstations

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- Can be used but not for every things
- A feasibility study must be done
 - Technical feasibility
 - Human aspects
 - TCO & ROI
- Project approach
- Don't forget hybrid solutions


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Questions?

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