mEDUXa

Educational linux distribution of the Canarian Government

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PROJECT MEDUSA

PACTO POR LA EDUCACIÓN
La calidad, compromiso de todos.

PACTO CANARI@S DIGITAL

FSE
FEDER
Presentation

- Canary Island
- CECD
- 1,100 schools
- 23,000 teachers
- 300,000 students
What is MEDUSA?

A Macroproject in Educational Innovation
Incorporating ICT to the Teaching/Learning Process.

Planned Changes

Implementation
Teacher (methodology)
Students (Learning)
Organization of Spaces
Equipment

Definition & Organization

• Objectives
• People involved
• Strategic lines
• Actions to implement
• Levels
• Intervention strategies
• Evaluation
What objectives do the project aim for?

General

To integrate ICT in education to improve teaching and learning quality.

Strategic

To get a critical mass of users. (teachers, students and parents)

Others

- To create innovative environments and situations
- To use ICT as a communication tool and to access and spread information.
- To renovate school administration and management
Which Processes are involved?

- Equipment
- Curriculum integration
- Training / On-line training
- Classroom tasks / Homework
- School and Edu. Adm. management
- School Planning
Which are the Project strategic lines?

School Equipment and net layout resources

School Management

Educational Implementation

Educational Innovation and Research

Teacher Training

Communications
Comunications

**Educational Intranet**

**At Administration Level**
Connection to the Consejería Central Services. Data, Official Documentation ..... Educational Services (Resources, on-line training, ....

**At School Level**
Education School Net

**At School Level**
Web with Educational Information
CONSEJERÍA DE EDUCACIÓN, CULTURA Y DEPORTES

WAN

PACTO POR LA EDUCACIÓN

La calidad, compromiso de todos.
Global Directory

gobiernodecanarias.net

Medusa.gobiernodecanarias.net

OUs correspondientes a cada consejería

OU para la Consejería de Educación, Cultura y Deportes

Dominio que comprende los usuarios y equipos del entorno Medusa
Segmentación
CASE

- Guide users to the educational systems of information.
- Preventive and corrective operation.
- Security (confidentiality, integrity and authenticity).
- To centralize the administration of the technical resources, in addition with politics that make easier the management of the “descentralization” by schools in their educational projects.
- Manage all the resources.
- Automatic monitoring of the service.
**Planned Actions in the Project Development**

**ACTION 1** *(2001-2003)*
- Actions in all Primary Schools to activate and use of resources to access Internet. Students and teachers smart cards.

**ACTION 2** *(2001-2003)*
- Teachers Centres, Adult Education Centres, Secondary Schools

**ACTION 3** *(2004-2006)*
- Primary Schools
ECONOMIC ESTIMATION

85,000,000 €
WHAT'S mEDUXa

- An open software distribution, developed with educational aims as part of the MEDUSA project.
- It's financed by the Canary Islands' Department of Education, Culture and Sports.
- MEDUSA structure on Windows. Dual boot in clients.
- Identical functions on both platforms.
- Developed by 5 Canary Open Software companies (ESLIC):
  i Fotón Sistemas Inteligentes
  ii Conysis Inv. y Des.
  iii Ejercicios Resueltos
  iv Neuroomante
  v Bufete Fajardo López
- mEDUXa is made-up of five different parts:
  a. the model
  b. the installer
  c. the updater
  d. monitoring
  e. contents
GENERAL CONDITIONS

❖ Developed, wherever possible, with free software license as defined in the Debian guidelines.
❖ Includes applications which are free for educational use only.
❖ No license barriers to future development, by the Education Dept., related to mEDUXa.
❖ The estable version will be released with a report on licenses.
THE DISTRIBUTION

- Debian GNU/Linux (Sarge)
- KDE 3.4.1
- Wide selection of educational software
- Pre-installed and pre-configured
- Validates against Active Directory
- Kerberos + LDAP
- Self-mounting of remote volumes ($HOME)
- WiFi Validation
- WPA
- Authenticated against RADIUS / Active Directory
- Medusa corporate image
THE INSTALLER

- On new PCs, the mEDUXa model will be pre-installed on the hard drive.
- On PCs in use, an installer will be developed.
- Allows partitioning, formatting and mEDUXa system dumping onto the hard drive.
- Must co-exist with MS Windows installation for dual boot.
- Based on the Debian GNU/Linux Sarge installer.
UPDATING SYSTEM

- Needed to maintain functionality and security.
- Flexible, allowing programming and reconfiguration of the distribution.
- Based on debian (sarge) packages and on debian apt system.
- Own package repository (on our central repository server).
- Virtual packages to add new packages or group them according to needs.
- Unattended installation.
UPDATING PROCESS

- Automatic previous testing of the new packages and installers.
- Automatic distribution to the schools' servers.
- On these are kept all the updating packages since the release of the distro.
- When the computers are turned on, they update and locally load the pending packages.
- When the computers are turned off, the pending packages are installed (unattended).
- Any issues are reported to the monitoring system.
THE CENTRAL SERVER

Server with Debian OS + XEN and the following services:

- Monitoring system.
- Central repository of model packages for the updating system.
- Project back-up
- Eduwiki (contents tool).
- Debian mirror
CHOICE OF DESKTOP

Two choices had to be made:

1: light weight or robust desktop? After trials on the oldest computers we chose to use a robust one

2: KDE or GNOME?
WHY KDE?

- Solid technical guarantee
- Large community
- Integration between various user applications
- Kiosk mode.
- KDE-Edu project - large number of quality educational applications
- Our own learning experience
- Changing the desktop language is simple
DISADVANTAGES OF KDE

i. Very robust, slows down the machines used in the first phase of the project (PIII 1GHz 128 MB RAM).

ii. Other Spanish educational projects have chosen gnome, so technical interaction will be harder.

iii. Some applications and utilities are not desirable, but it's not technically adequate to remove them.
OVERCOMING THOSE DISADVANTAGES

Interaction with other education projects not technically necessary, however desirable. We'll cooperate in content matters and other experiences.

Solving the slowing-down of the PC's due to the robust desktop:

a) make lighter the desktop load
b) use applications that take-up less resources
c) get advice from the kde development team, to cooperate on this and other matters
d) develop specific solutions which will then be made available to the community
KIOSK MODE

- Aim: To limit system configuration capabilities, in order to avoid problems due to incorrect or wrong choosing of options.
- Solution: KDE's kiosk mode
- We use it (for example) in the configuration of:
  - K menu.
  - Screensaver.
  - Wallpaper.
  - Font types and sizes.
  - Colors and windows styles.
We have made certain customizations to simplify user experience.

We have tried to make the environment be similar on both platforms, especially the links to information storing spaces.

We have made customizations on the KDE panel.
K menu customization

- K menu has been rearranged, especially the educational applications part.
- We are considering removing the debian menu.
CRITERIA FOR SELECTING APPLICATIONS

1. Legal
2. Technical
3. Compatibility and integration
4. Only one application is included for each task
5. Live project: an active group of developers guarantees the continuity of the application, and its possible interactions with other applications
USER APPLICATIONS

Office
- **OpenOffice.** Office computing package.
- **Kile.** LaTeX text editor, for later conversion into *.pdf format.
- **KAddressbook.** Address book.
- **KOrganizer.** Personal assistant for appointments and calendar.
- **Kontact.** Personal information management. Actually an interface for other applications.

Editors
- **Kate.** Text editor that can be used with Konqueror to navigate through text and configuration files.
- **KWrite.** Text editor.
- **Dia o Kivio.** Drawing of diagrams.
- **Kruler.** Ruler. useful for measuring the pixel size of windows and screens.

Multimedia
- **K3b.** Burning and ripping of CDs.
- **AmaroK.** Audio player.
- **KMix.** Controller for I/O devices and general audio management.
- **KAudioCreator.** Ripping of audio CD’s.
- **Kaffeine.** Viewing and listening to multimedia files.
- **Digikam.** Capture of photographies from USB cameras. The best in its class.
- **Kino.** Video editor.

Accessories and utilities
- **KGhostview.** Viewer for PS/PDF files.
- **Ark.** Compressors and decompressors.
- **KCalc.** Calculator.
- **KSnapshot.** Screen captures.
- **Kpdf.** Viewer for pdf files.
- **Xpdf.** Viewer for pdf files.
- **KFloppy.** Floppy disk formatting.
- **KColorChooser.** Colour chooser.
- **Knotes.** For simple notes and reminders.
- **Klipper.** Clipboard tool
- **KDEPrintfax.** Sending of faxes.

Internet
- **Konqueror.** Navegador-gestor de archivos-cliente FTP.
- **Firefox.** Navegador.
- **GnuPG y KPG.** Gestión de claves OpenPGP.
- **Kget.** Gestor de descargas de KDE.
- **Kopete.** Cliente de mensajería instantánea.
- **Knode.** Cliente de servicios de noticias.
- **Korn.** Programa de aviso de nuevos correos.
- **KBear.** Cliente FTP.
SYSTEM AND ADMINISTRATION APPLICATIONS

- Same general criteria
- Applications must be familiar to the companies providing support
- These applications will be used by authorized staff of the centre, and Medusa systems and maintenance technicians.
- Must replicate the user profiles structure inherited from Active Directory.
- Both platforms view groups and user permissions differently, affecting admin tasks and services (printing, external storage devices, common peripherals, etc.). Applications must be chosen for their ability to overcome this hurdle.

- The applications have NOT been chosen at this stage.
EDUCATIONAL APPLICATIONS

- The included applications are those available on Windows or equivalent:
  - JClíc
  - Mr Potato
  - Tux Paint
  - Kaffeine
  - Audacity
  - Gimp

- At the beginning of September, it'll be considered whether to include additional educational applications in this first phase. Some of these belong to the KDE-EDU project.
i. No other type of applications will be considered in this first phase.

ii. In the second phase the following applications will be considered:

- Classroom control applications
- Applications for the development of learning units
- Student-management applications
- Collaborative content creation tools for the students
MANUALS AND OTHER CONTENTS

- The manual will be a .pdf file, with open license.
- The approach taken is that of a Quick Guide or Mini How To
- This is being written by a group of professionals using Mediwiki.