

# **Utilización y Administración avanzada de sistemas GNU/Linux y aplicaciones Software Libre para estudiantes universitarios**

**Recursos de programación en GNU/Linux**

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# **Utilización y Administración avanzada de sistemas GNU/Linux y aplicaciones Software Libre para estudiantes universitarios Recursos de programación en GNU/Linux**

por Chema Peribáñez, Mario Arias, y Ramón Rey Vicente

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Revisión 1.3 18-04-2007 Revisado por: Chema Peribáñez Mario Arias Ramón Rey Vicente

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# Capítulo 1. Recursos de Programación en GNU/Linux

## 1.1. Licencias

- Copyleft: GPL
  - Origen del Proyecto GNU.
  - Concepto de "trabajo derivado".
  - Licencia dual.
  - Forma de financiación.
- no-Copyleft: BSD modificada, MIT X11
  - evitar las incompatibilidades
- otras licencias
  - LGPL
  - MPL

## 1.2. Dónde buscar programas

- Freshmeat (<http://www.freshmeat.net>)
- Sourceforge (<http://www.sourceforge.net>)
- Proyecto GNU (<http://www.gnu.org>)
- Savannah (<http://savannah.gnu.org>)
- Proyecto Debian (<http://www.debian.org>)
- GNOME (<http://www.gnome.org>)
- KDE (<http://www.kde.org>)

## 1.3. Consejos

- No reinventar la rueda.
- Colaborar.

- Humildad y no desanimarse.

## 1.4. Sourceforge

- ¿Qué ofrece?
  - Web con PHP
  - Base de datos.
  - Listas de correo
  - FTP
  - SSH
  - Máquinas donde compilar.
  - CVS
  - Bugzilla.
- ¿Quién lo ofrece?
  - Savannah (<http://savannah.gnu.org>)
  - Sourceforge (<http://www.sourceforge.net>)
  - En consideración, Hispalinux (<http://www.hispalinux.es>)
  - Sourceforge, en senda propietaria.
- Sourceforge (<http://www.sourceforge.net>) en cifras. (Abril - 2002)
  - Más de 38.000 proyectos alojados.
  - Más de 400.000 usuarios registrados.
  - Los servidores soportan 12 millones de visitas diarias de páginas PHP.
  - 1,3 Terabytes de capacidad
  - 47 GiB de RAM
  - 56 GHz procesadores
  - Todos los discos tienen RAID para proteger los datos.

## 1.5. Lenguajes de programación

- C/C++: gcc
- Interpretados: Perl, Python

- Empotrables Scheme
- Java, C#

## 1.6. Programación Web

- Apache: FastCGI, módulos
- PHP
- Perl
- Tomcat (<http://jakarta.apache.org>)

## 1.7. Bases de Datos

- MySQL (<http://www.mysql.org>)
- PostgreSQL (<http://www.postgresql.org>)
- InterBase
  - Firebird (<http://firebird.sourceforge.net>)
- SapDB (<http://www.sapdb.org>)

## 1.8. Programación de empresa

- J2EE
  - JBoss (<http://www.jboss.org>)
- GNUe (<http://www.gnenterprise.org>)
- OSDL (<http://www.osdl.org>)
- En progreso:
  - MONO::
  - dotGNU

## 1.9. Programación multiplataforma

- Linux/Unix es multiplataforma:

- ejecutables transportables i386 ELF
- automake, configure
- ojo con los warnings
- X-Window: Motif, GTK+, QT
  
- Compatibilidad hacia MS Windows
  - Cygwin (<http://www.cygwin.com>)
  - X-Window (<http://www.cygwin.com/xfree/>)
  
- Migrar desde MS Windows
  - Wine/Winelib (<http://www.winehq.org>)
  
- Librerías multiplataforma
  - Hilos, red, E/S:
    - ACE (<http://www.cs.wustl.edu/~schmidt/ACE.html>)
    - NSPR (<http://www.mozilla.org/projects/nspr/>)
  
  - Gráficos y más cosas, C++: wxWindows (<http://www.wxwindows.org>)
  - Gráfico, C++: Fox Toolkit (<http://www.fox-toolkit.org>), FLTK (<http://www.fltk.org>)
  - Multimedia: SDL (<http://www.libsdl.org>)
  
  - Más librerías multiplataforma
    - SSL
      - OpenSSL (<http://www.openssl.org>)
      - GnuTLS (<http://www.gnu.org/software/gnutls/>)
  
    - XML: libxml2 (<http://xmlsoft.org/>)
    - OpenH323 (<http://www.openh323.org>)
  
- Java
  - Java NO es libre
  - gcj (<http://gcc.gnu.org/java/>)
  - Eclipse (<http://eclipse.org/>)
  - SWT: forma parte de Eclipse

- jikes (<http://www-124.ibm.com/developerworks/oss/jikes/>)
- XWT (<http://www.xwt.org/>): requiere applets o activex
  
- .NET
  - Dot GNU (<http://www.gnu.org/projects/dotgnu/>)
    - Portable.Net
  
  - MONO:: (<http://www.go-mono.org>)
  
- Pascal
  - Kylix: propietario
  - Lazarus (<http://www.lazarus.freepascal.org>)
  
- Sash (<http://www.sashxb.org>): basado en Mozilla. Versión para Windows propietaria.

## 1.10. Herramientas

- Entornos de desarrollo
  - KDE: Kdevelop (<http://www.kdevelop.org>)
  - GNOME: Anjuta (<http://www.anjuta.org>) + Glade (<http://glade.gnome.org>) (enlace de recursos en la web de Anjuta)
  - VDK Builder (<http://vdkbuilder.sourceforge.net/>)
  - Java: Eclipse
  - wxWindow: wxGlade (<http://wxglade.sourceforge.net/>)
  
- Depuradores de memoria C/C++
  - mpatrol (<http://www.cbmamiga.demon.co.uk/mpatrol>)
  - dmalloc (<http://dmalloc.com>)
  - ElectricFence
  
- Gestión de proyectos: Mr Project (<http://mrproject.codefactory.se>)

- Ingeniería del software
  - argouml (<http://argouml.tigris.org/>)
    - derivado propietario: Poseidon (<http://www.gentleware.com/>)
  
- Umbrello UML Modeler (<http://uml.sourceforge.net/>)
- DIA (<http://www.lysator.liu.se/~alla/dia/>)
  - AutoDIA (<http://droogs.org/autodia/>)
  - dia2code (<http://dia2code.sourceforge.net/>)
  
- Otros: (buscar UML en Freshmeat (<http://www.freshmeat.net>)
  - <http://gaphor.sourceforge.net/>
  - <http://javare.sourceforge.net>
  - <http://freshmeat.net/redirect/klassmodeler/>
  
- Proyecto gestión libre: en <http://www.hispalinux.es>

## 1.11. Documentación

- Páginas info (info libc)
- man, secciones 2 y 3
- Advanced Linux programming (<http://www.advancedlinuxprogramming.com/>)
- OpenBooks (<http://openbooks.sourceforge.net/books/>) (KDE, Gnome...)
- Programación segura (<http://www.dwheeler.com/secure-programs/>)
- DevHelp (<http://devhelp.codefactory.se/>)
- <http://libros.es.gnome.org/>
- <http://es.gnome.org>

## 1.12. Generar documentación

- DocBook (<http://www.docbook.org>)
- doxygen (<http://www.doxygen.org>) (tipo javadoc)

## 1.13. Otros sitios interesantes

- <http://www-124.ibm.com/developerworks/oss/>
- <http://www.programacion.net>
- <http://www.apache.org> XML, Jakarta
- <http://www.linuxbase.org> (estándares)
- <http://www.freedesktop.org> (estándares)
- <http://www.salix.org/>
- <http://www.javahispano.org>
- [http://rpmfind.net/linux/RPM/Development\\_Tools.html](http://rpmfind.net/linux/RPM/Development_Tools.html)
- <http://www.hispalinux.net>: casos de éxito, empresas españolas de software libre.

## 1.14. Algunos detalles en las prácticas

- getopt
- setlocale
- seteuid
- aprender: ltrace

## 1.15. El lado oscuro

- Instaladores
  - Inno Setup (<http://www.wintax.nl/isx/>)
  - NSIS (<http://nsis.sourceforge.net>)
- Entornos, compiladores
  - Cross compiling: <http://www.fox-toolkit.org/faq.html#CROSSCOMPILING>

## 1.16. Curiosos

- <http://www.ignavus.net/software.html>
- Tarjetas inteligentes (<http://www.linuxnet.com/>)
- Sistemas empotrados (<http://www.linuxdevices.com>)
- Turbo Vision (<http://tvision.sourceforge.net/>) (consola)

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