

Arquitectura de sistema operativo

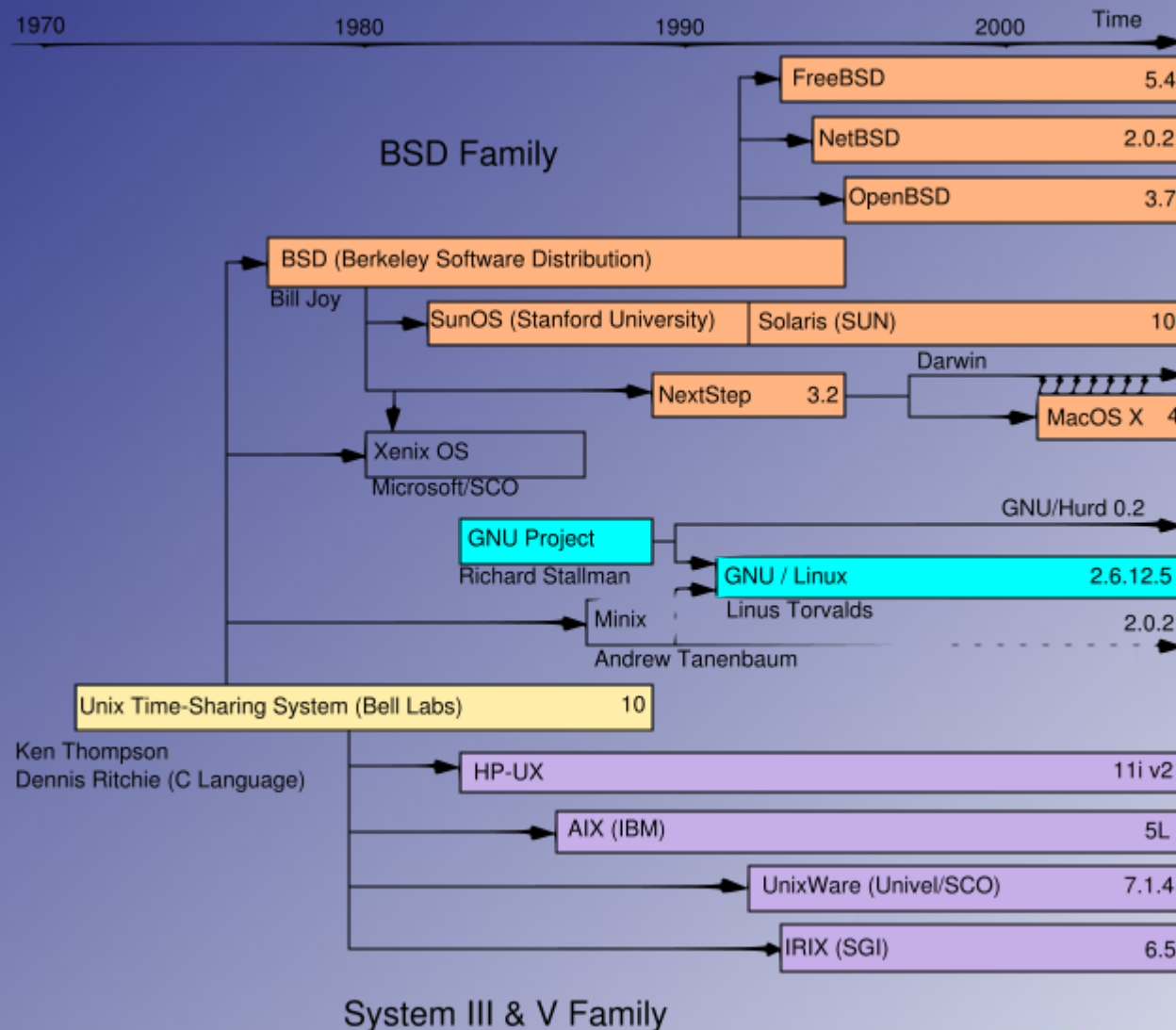


Rudy Godoy <rudy@apesol.org>

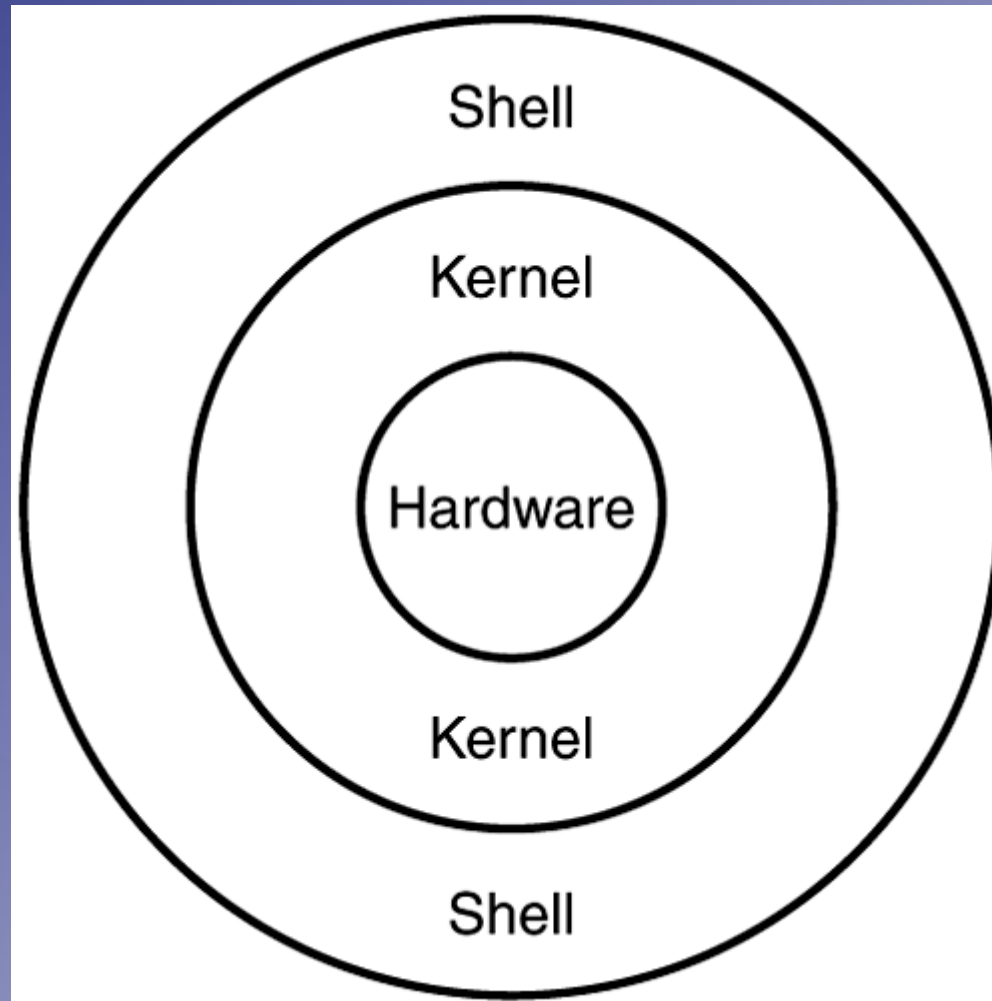
SOLTECH – Trujillo, Perú 2006

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Historia



Arquitectura sistema Unix



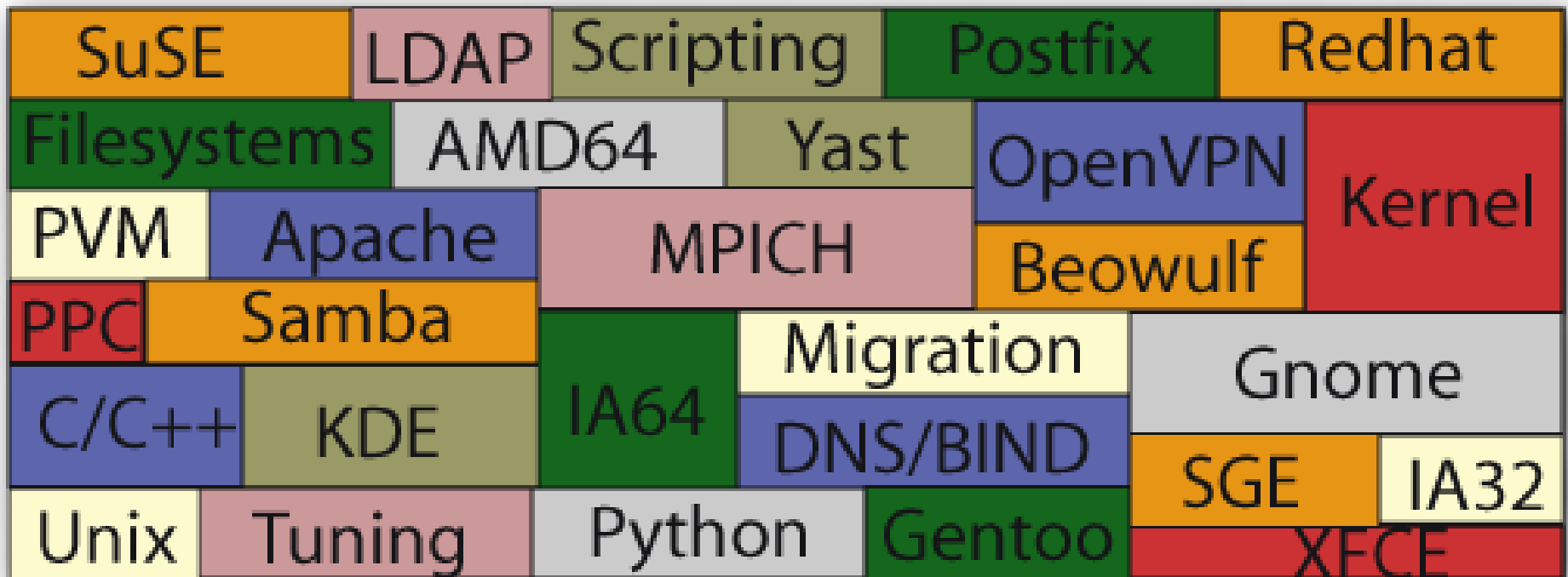
Comparativa sistemas operativos

	Arquitecturas soportadas	Sistema de ficheros soportados	Tipo de núcleo	Líneas de código	GUI predeterminada	Gestión de paquetes	Gestión de actualizaciones	API principal
AIX	POWER, PPC	JFS, JFS2, ISO 9660, UDF, NFS, SMBFS, GPFS	Monolithic		No	installp, RPM	Service Update Management Assistant (SUMA)	SysV, POSIX
FreeBSD	x86, x86-64, PC98, SPARC, others	UFS2, ext2, ext3, FAT, ISO 9660, UDF, NFS, ReiserFS (read only), XFS (experimental) and others	Monolithic with modules		No	ports tree, packages	by source (CVSup, portsnap), network binary update (freebsdupdate)	BSD, POSIX
HP-UX	PA-RISC, IA-64	VxFS, HFS, ISO 9660, UDF, NFS, SMBFS	Monolithic with modules		No	swinstall	?	SysV, POSIX
GNU/Linux	x86, x86-64, PPC, SPARC, Alpha, others	ext2, ext3, ext4, ReiserFS, FAT, ISO 9660, UDF, NFS, and others	Monolithic with modules	See: Comparison of Linux distributions				POSIX
Mac OS X	PPC, x86	HFS+ (default), HFS, UFS, AFP, ISO 9660, FAT, UDF, NFS, SMBFS, NTFS (read only), FTP, WebDAV	Hybrid	~86 million	Yes	Mac OS X Installer	Software Update	Carbon, Cocoa, BSD/POSIX, X11 (since 10.3)
NetBSD	x86, x86-64, PPC, SPARC, 68k, Alpha, others	UFS, UFS2, ext2, FAT, ISO 9660, NFS, LFS, and others	Monolithic with modules		No	pkgsrc	by source (CVS, CVSup, rsync) or binary (using sysinst)	BSD, POSIX
NetWare	x86	NSS, NWFS, FAT, NFS, AFP, UDF, CIFS, ISO 9660	Hybrid		No	NWCONFIG.NLM, RPM, X-Windows-based GUI installer	binary updates, Red Carpet	proprietary
OpenBSD	x86, x86-64, SPARC, 68k, Alpha, VAX, others	ffs, ext2, FAT, ISO 9660, NFS, some others	Monolithic with modules		No	ports tree, packages	by source	BSD, POSIX

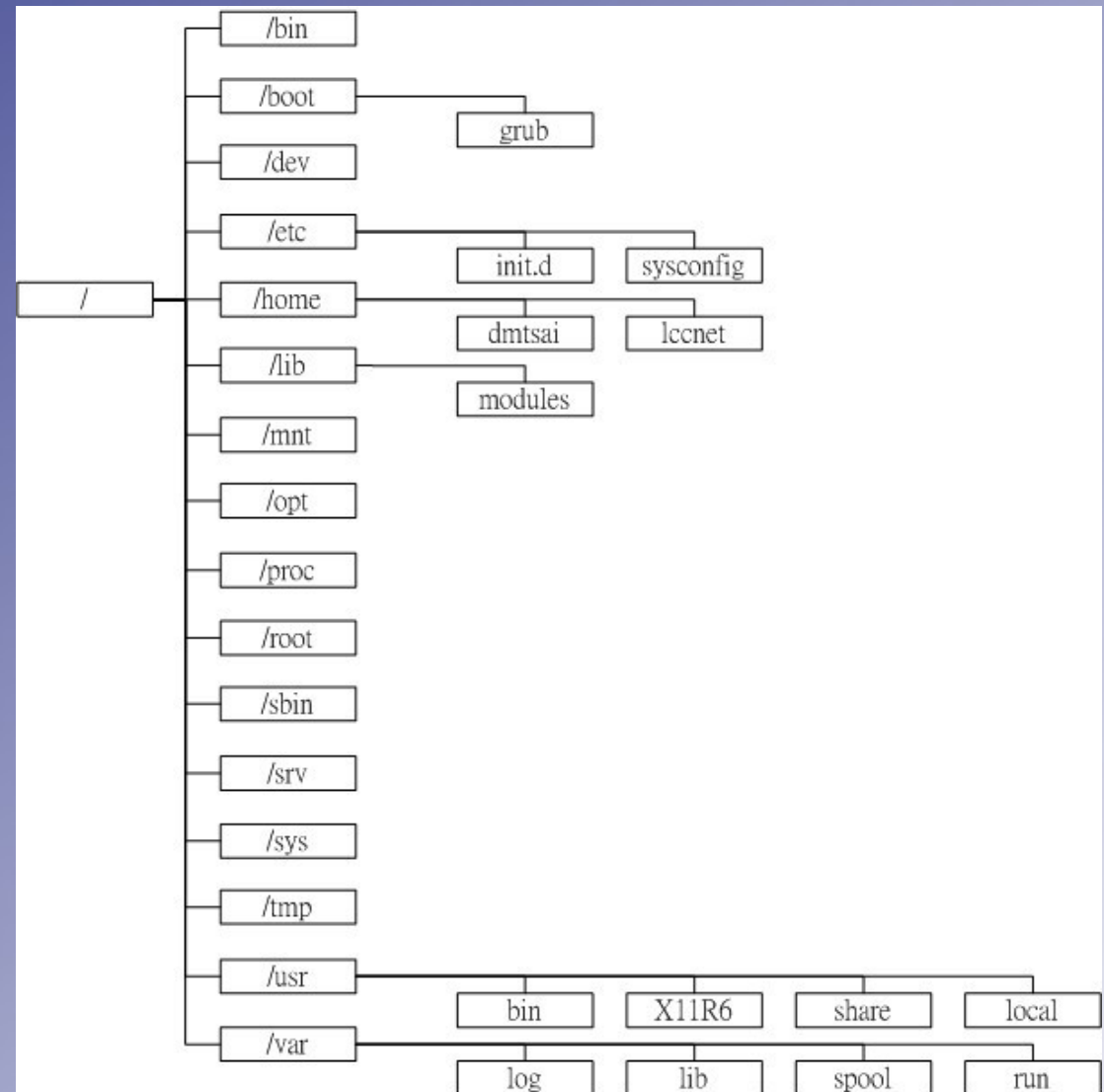
¿Linux?



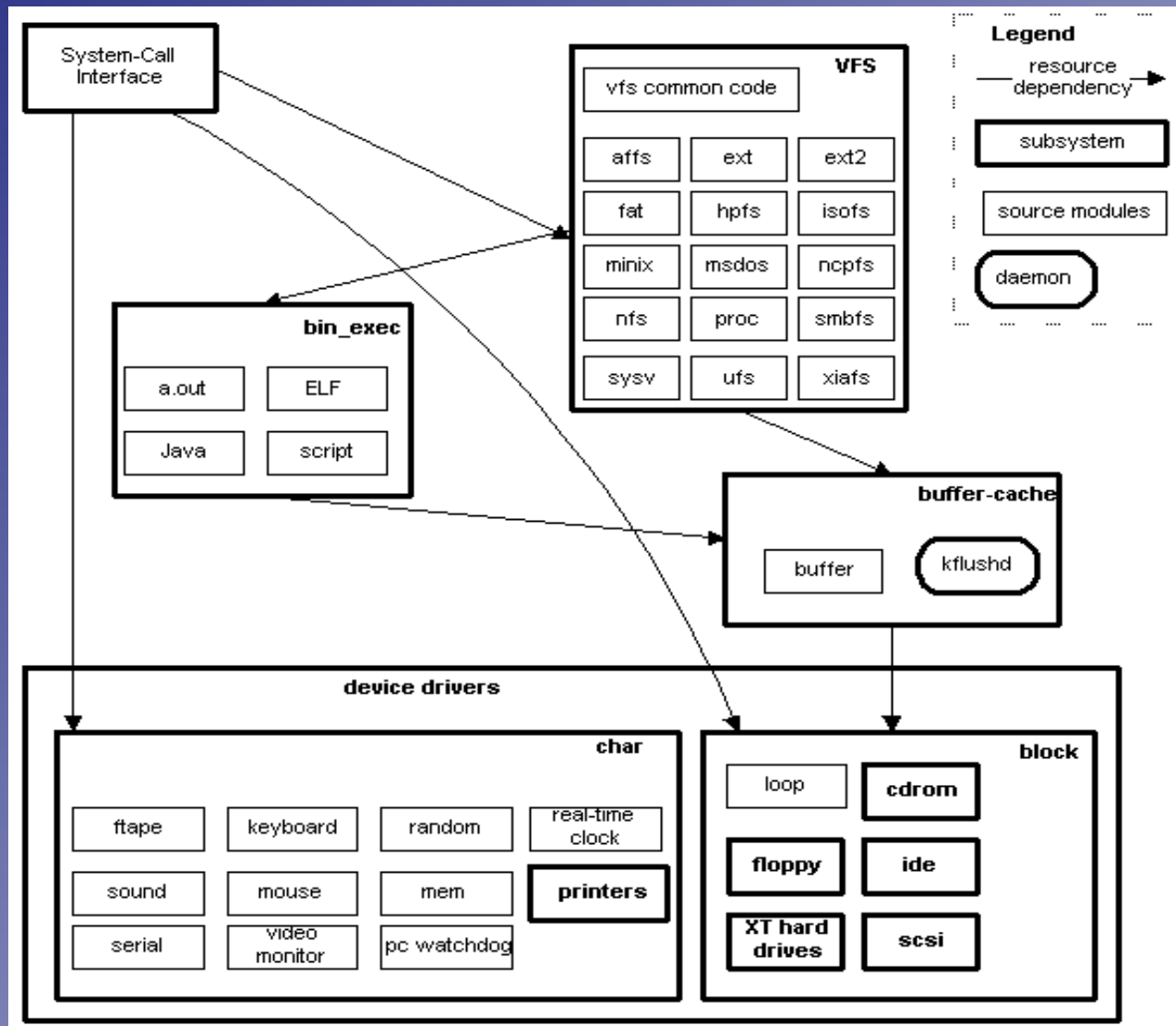
Arquitectura



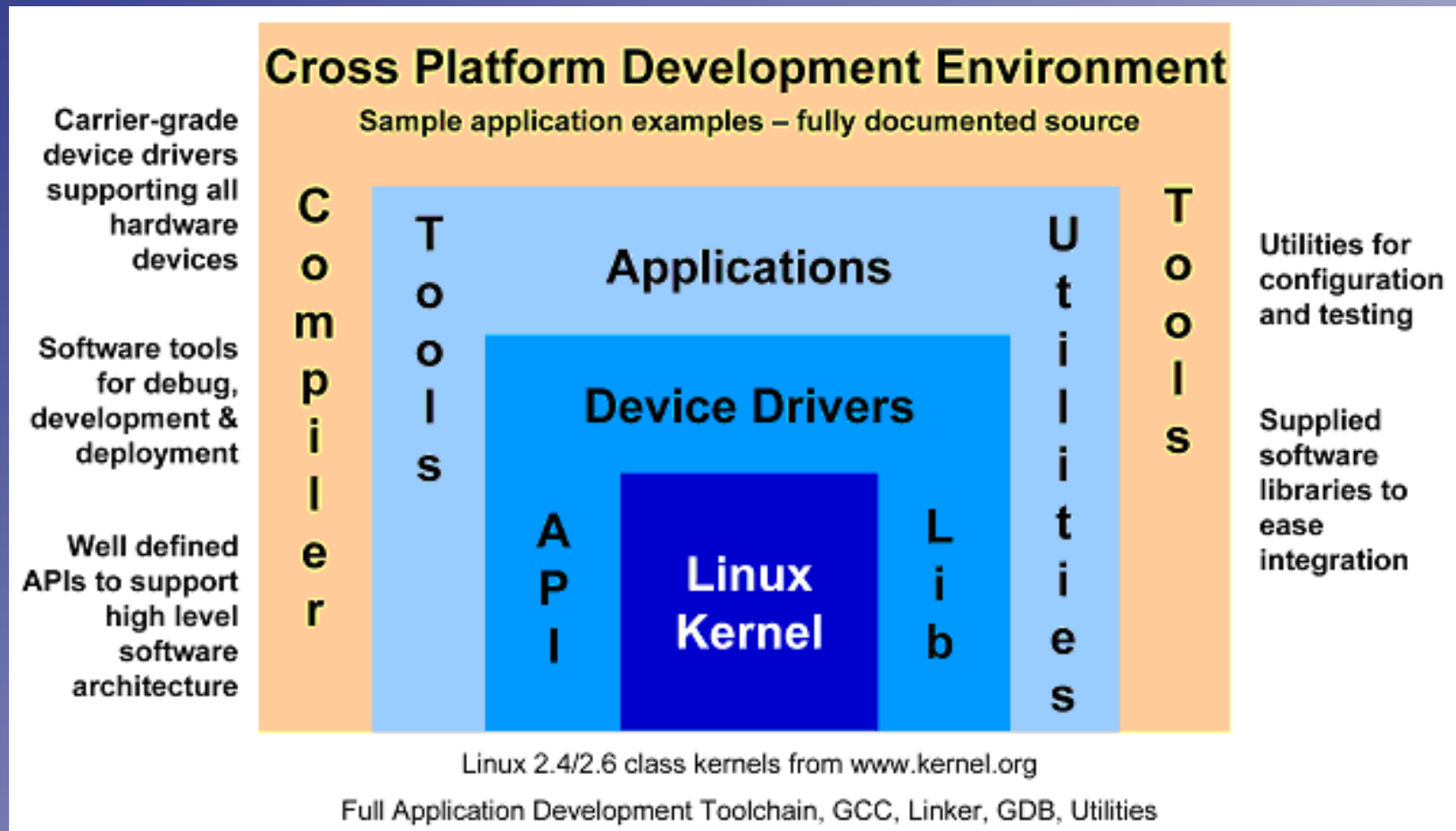
Estándares – LSB / FHS



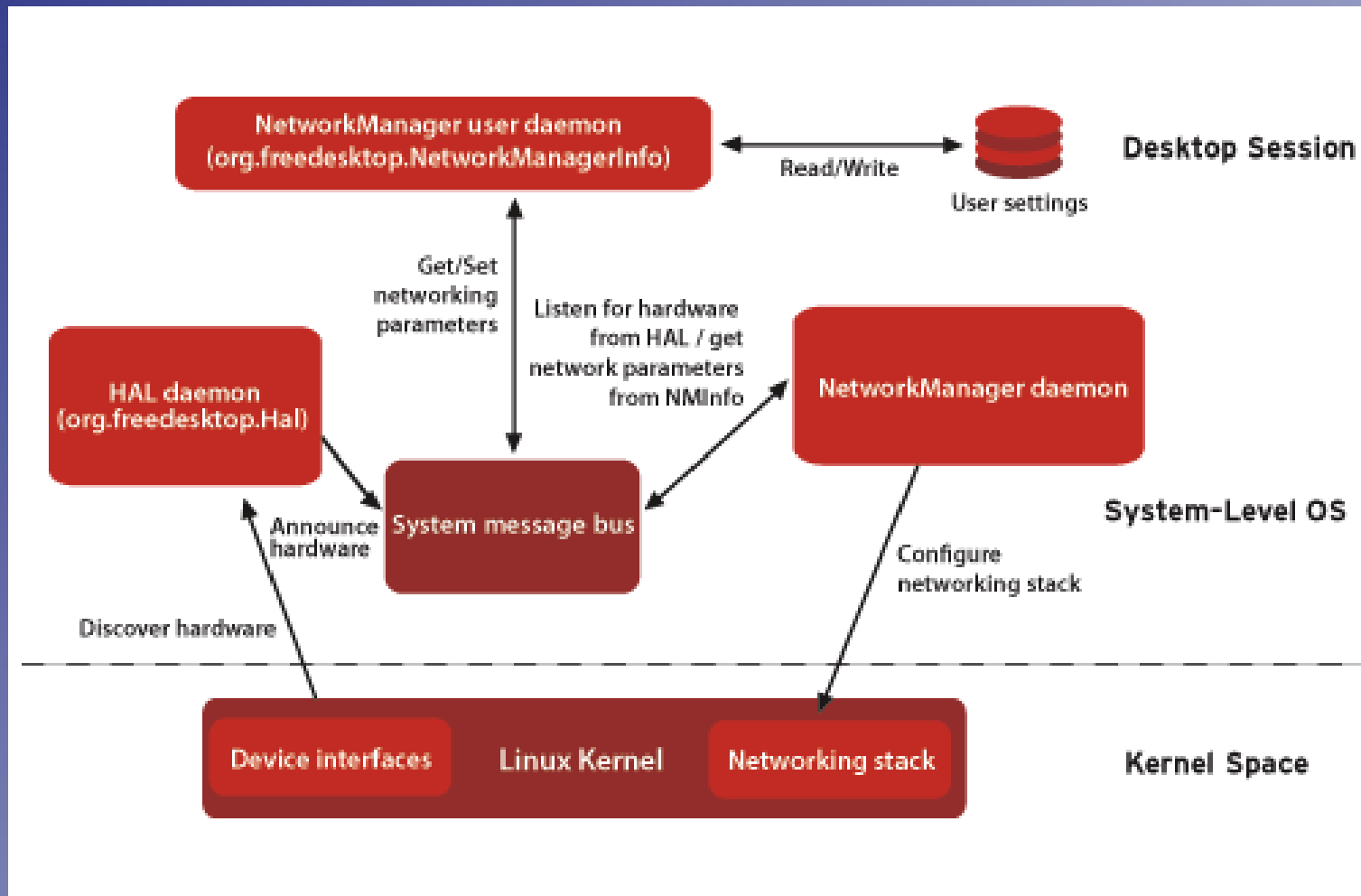
Sistema de ficheros



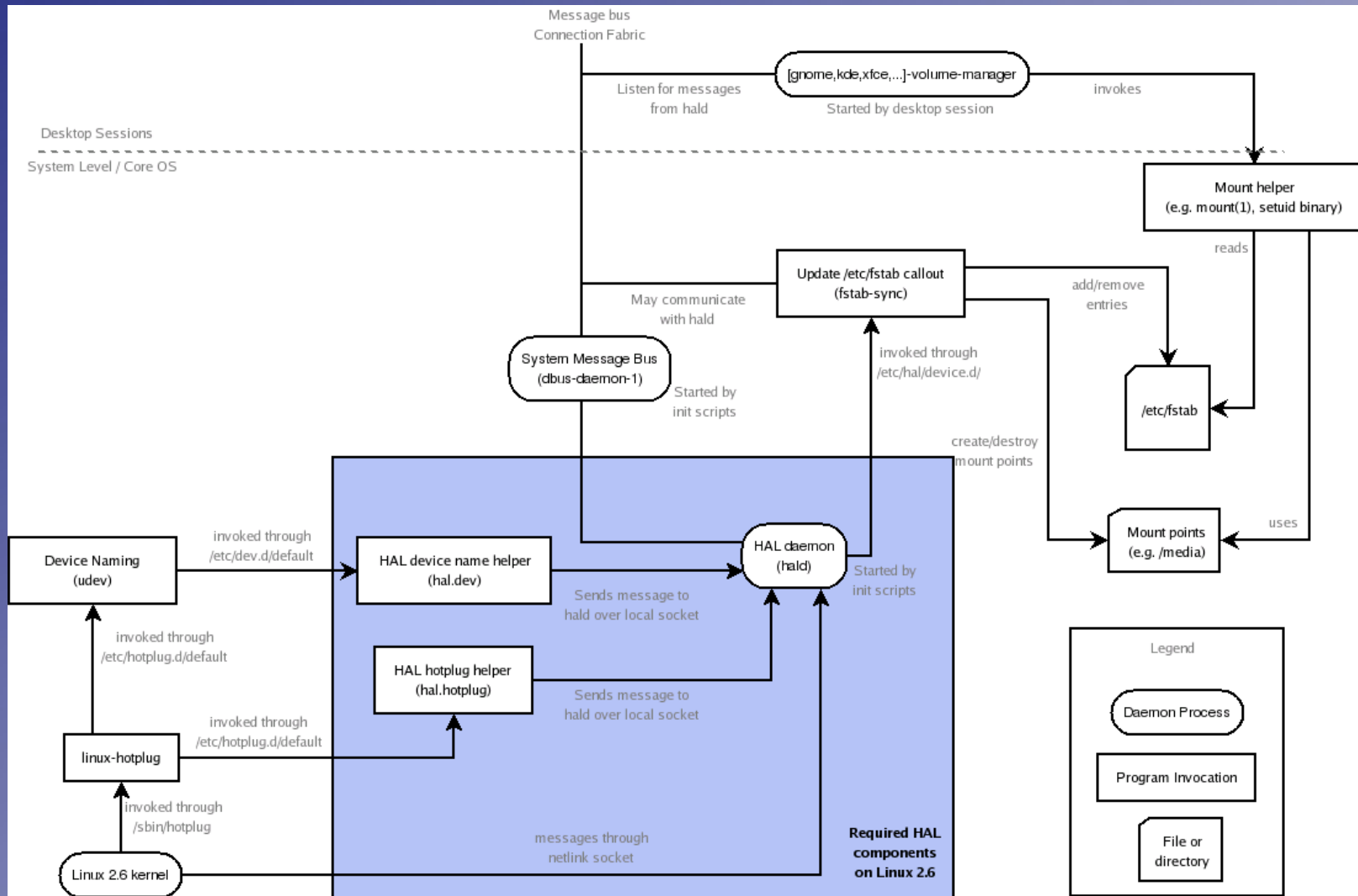
Desarrollo multiplataforma



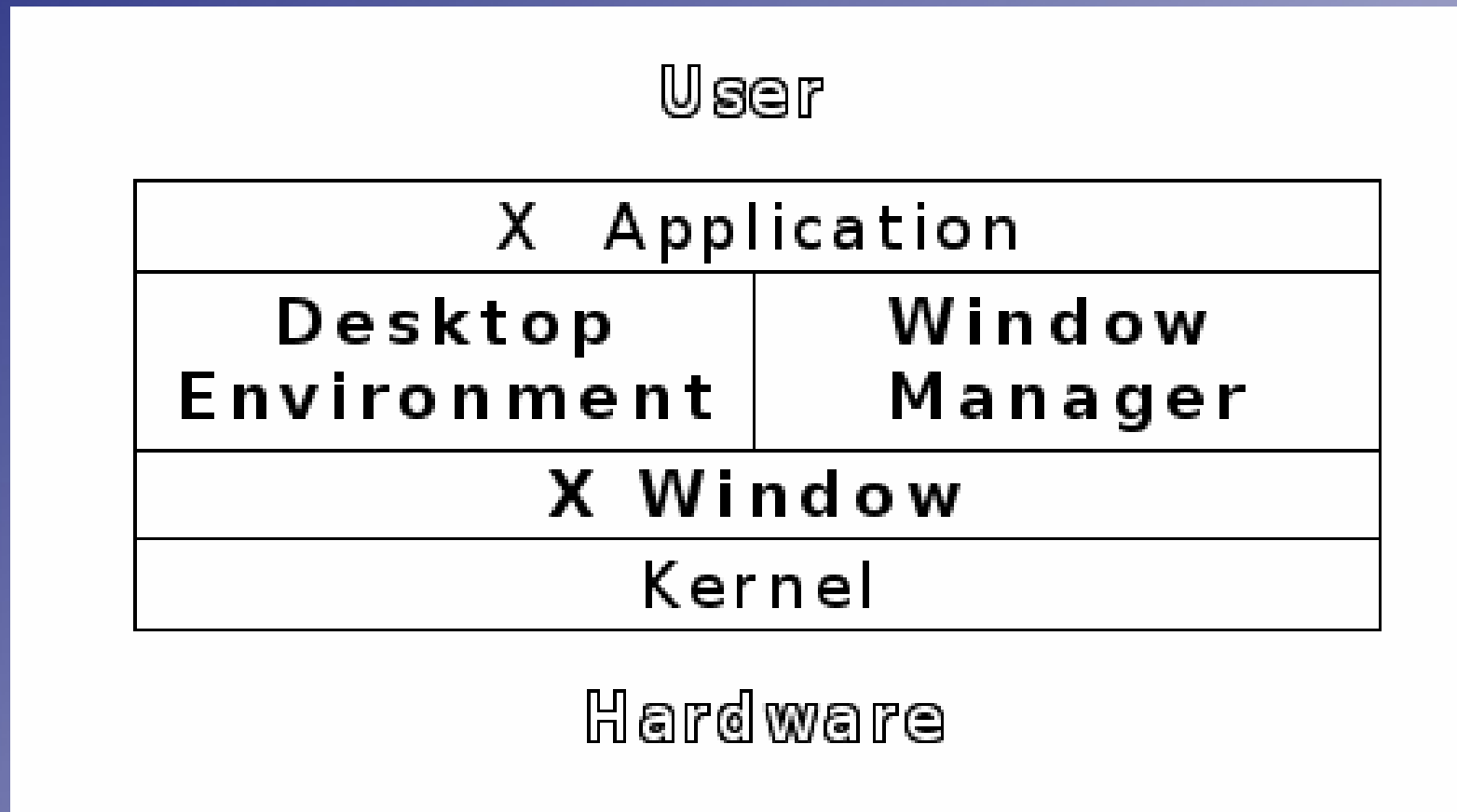
Linux HAL



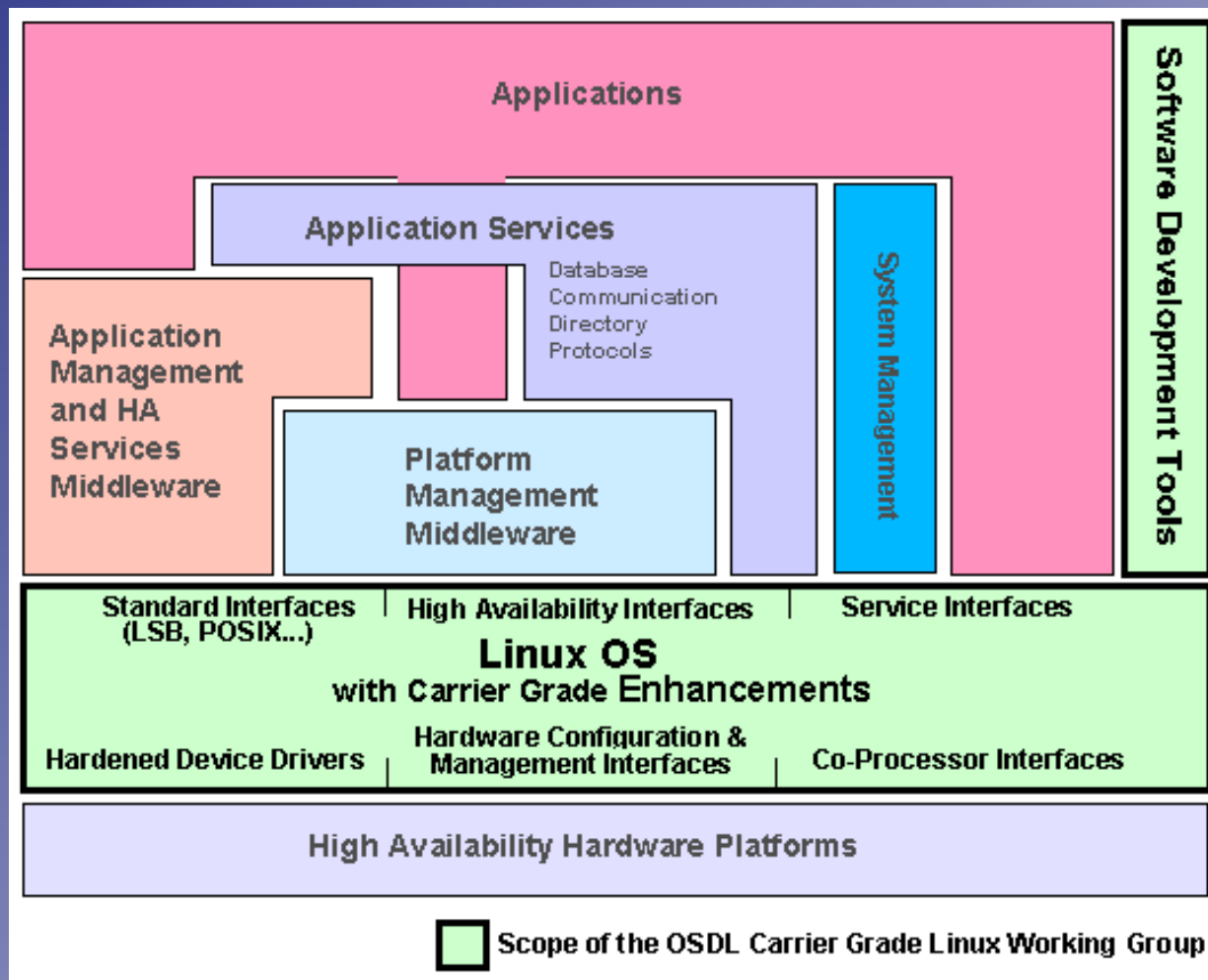
Subsistema HAL



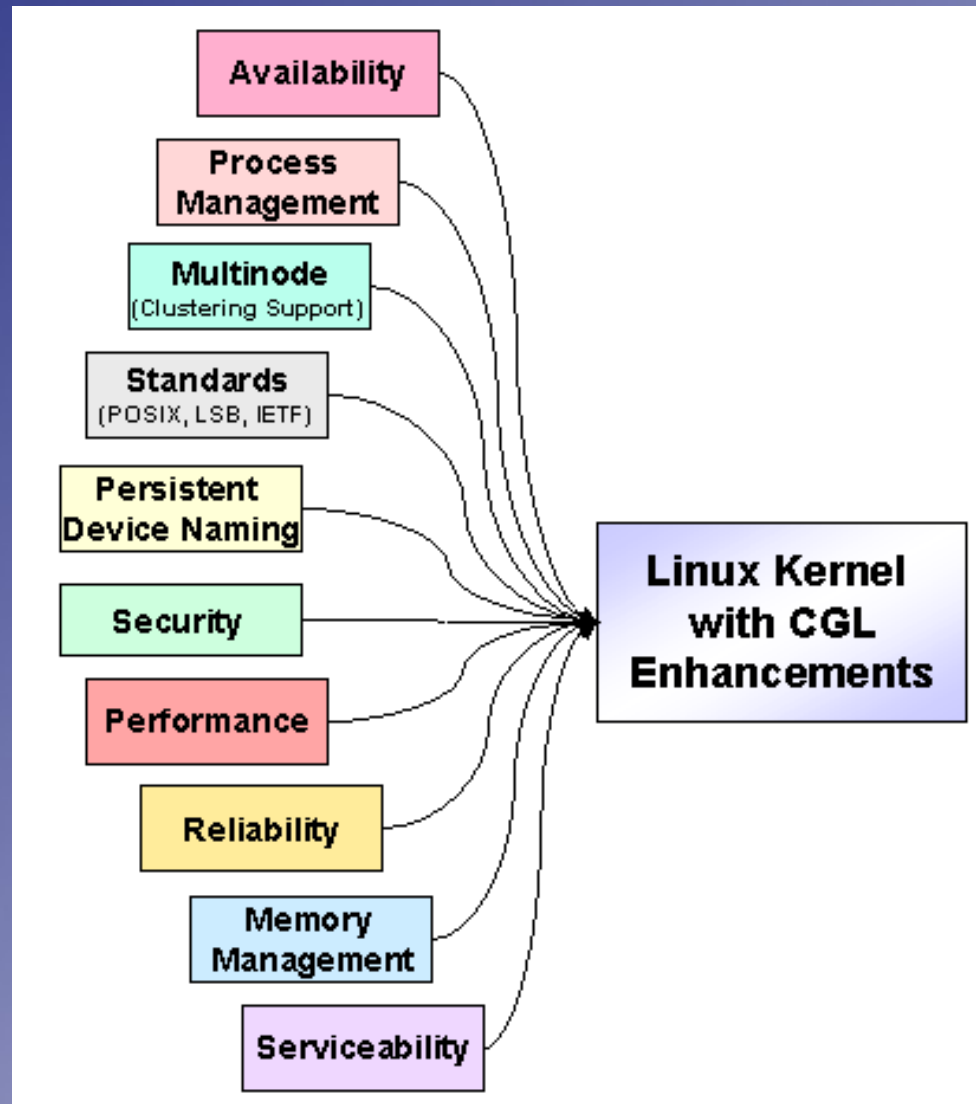
Arquitectura entorno gráfico



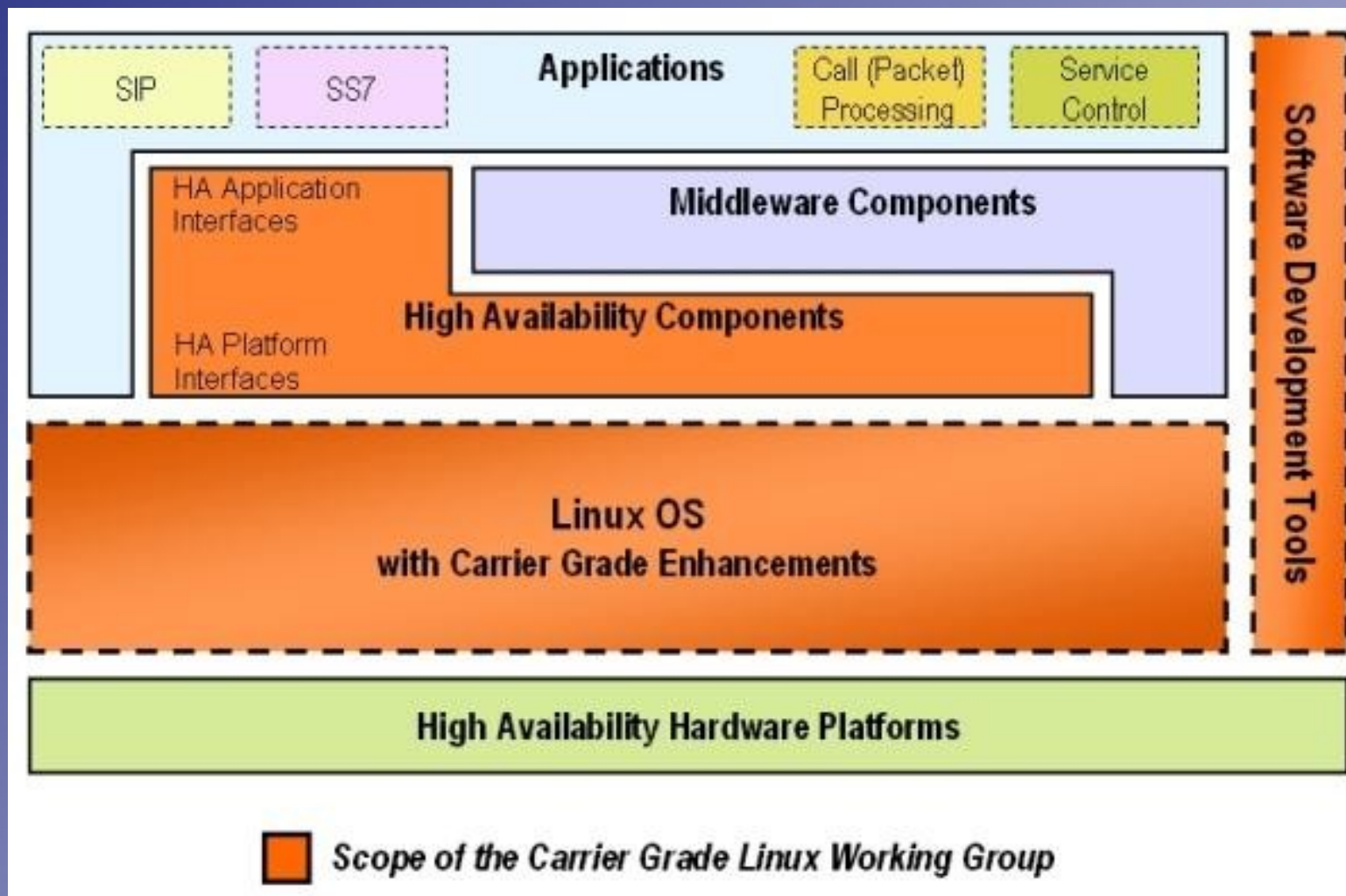
Linux Carrier Grade



Linux Carrier Grade



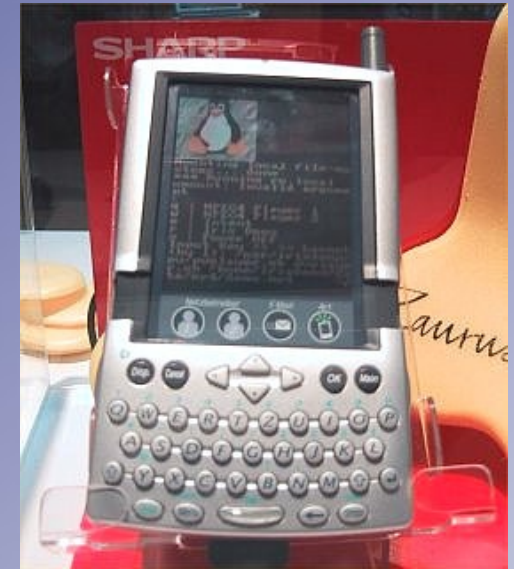
Linux - HA





SUN Linux Cluster Phoenix,
located at the Information
Technology Services (ZID) of
Vienna University of
Technology (TU Wien)

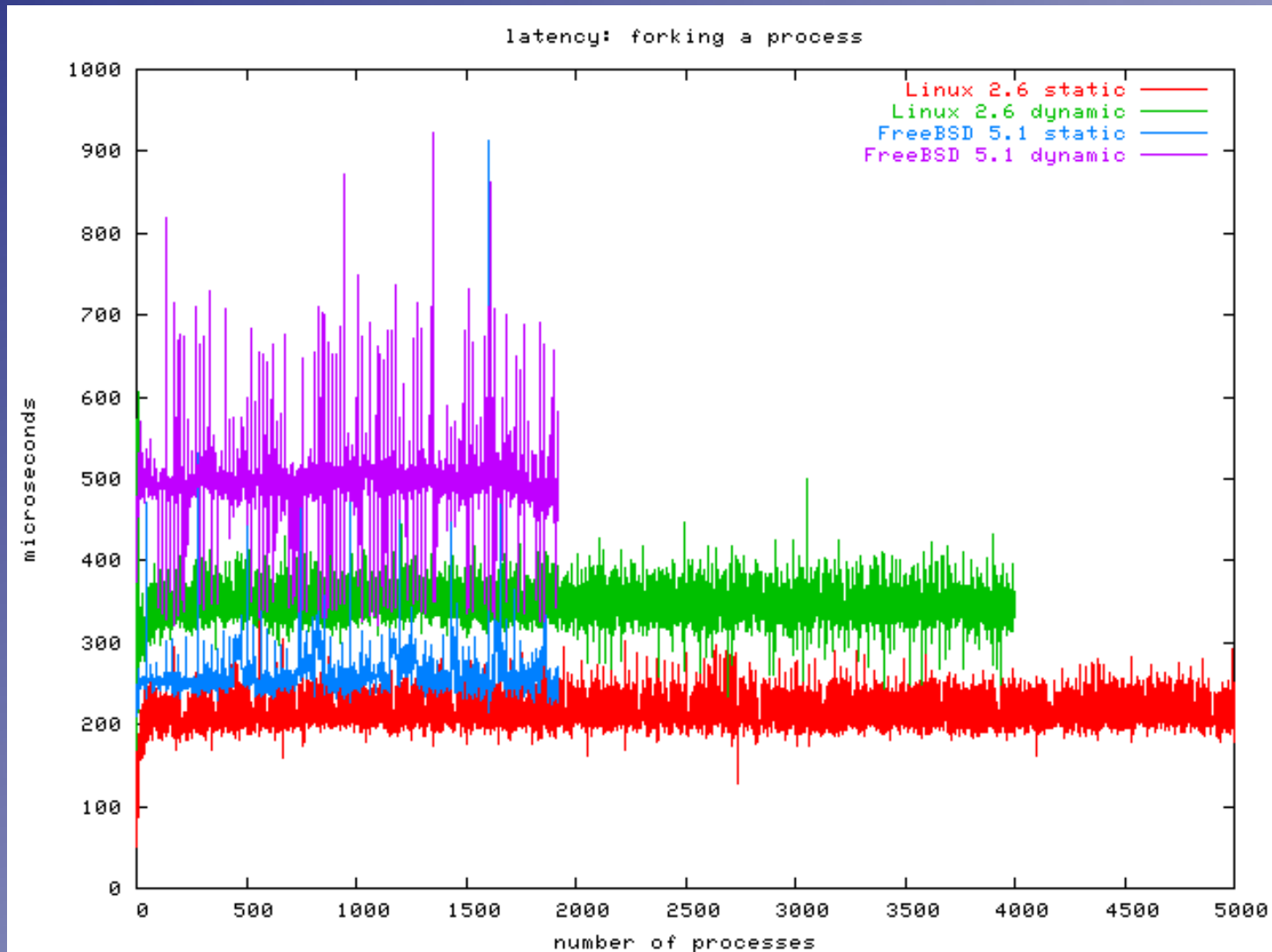
Multi-arquitectura



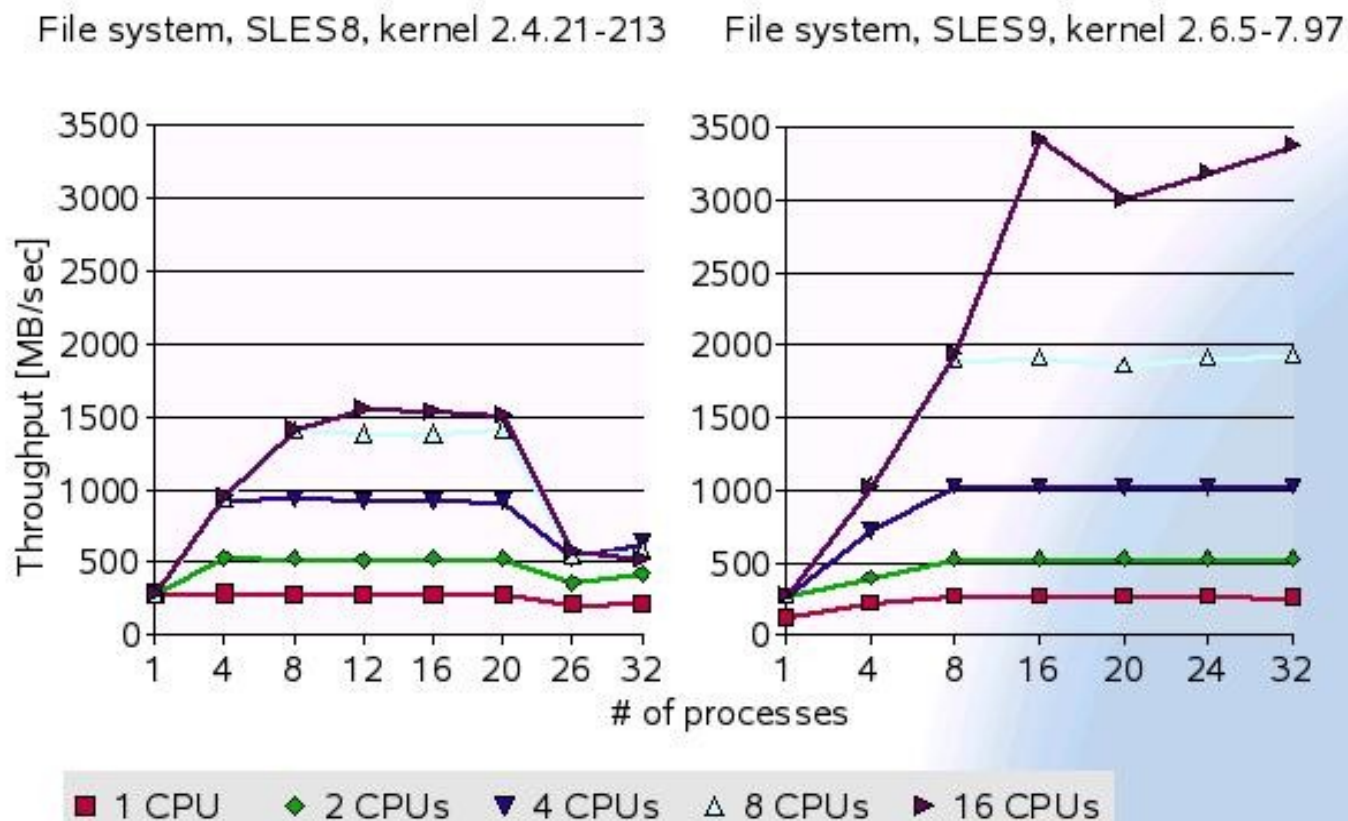
From Computer Desktop Encyclopedia
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Rendimiento fork()



Escalabilidad

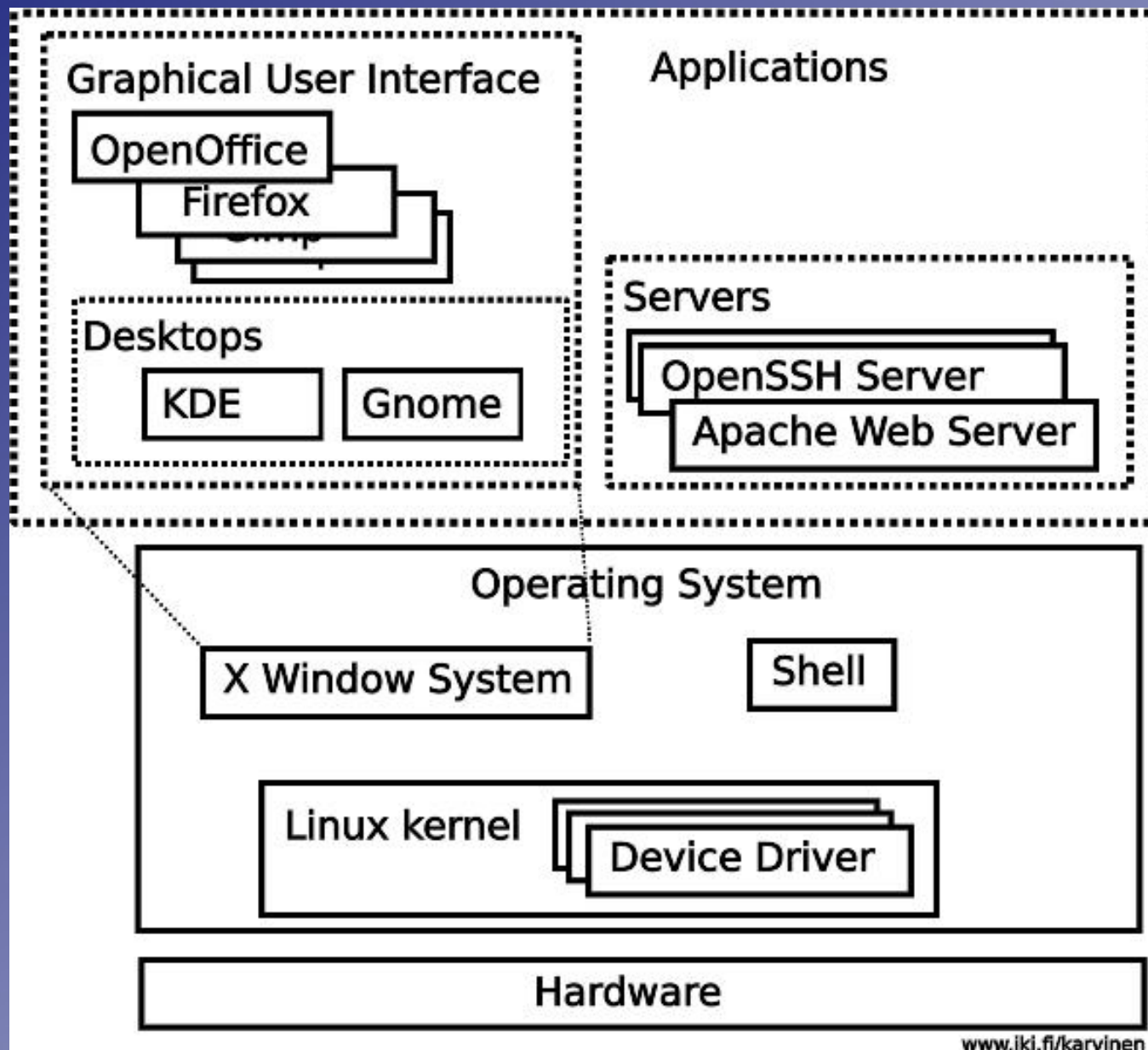


Algunos datos

- 24 de abril 2006 - Linux 2.6.16.11 es publicado (6,981,110 líneas de código)
- «Linux Standard Base» es una norma ISO
- HP ofrece sistemas «Carrier Grade» basados en Debian GNU/Linux
- IBM tiene centros de investigación para Linux
- Servidor web de SENCICO utiliza Linux

Distribuciones

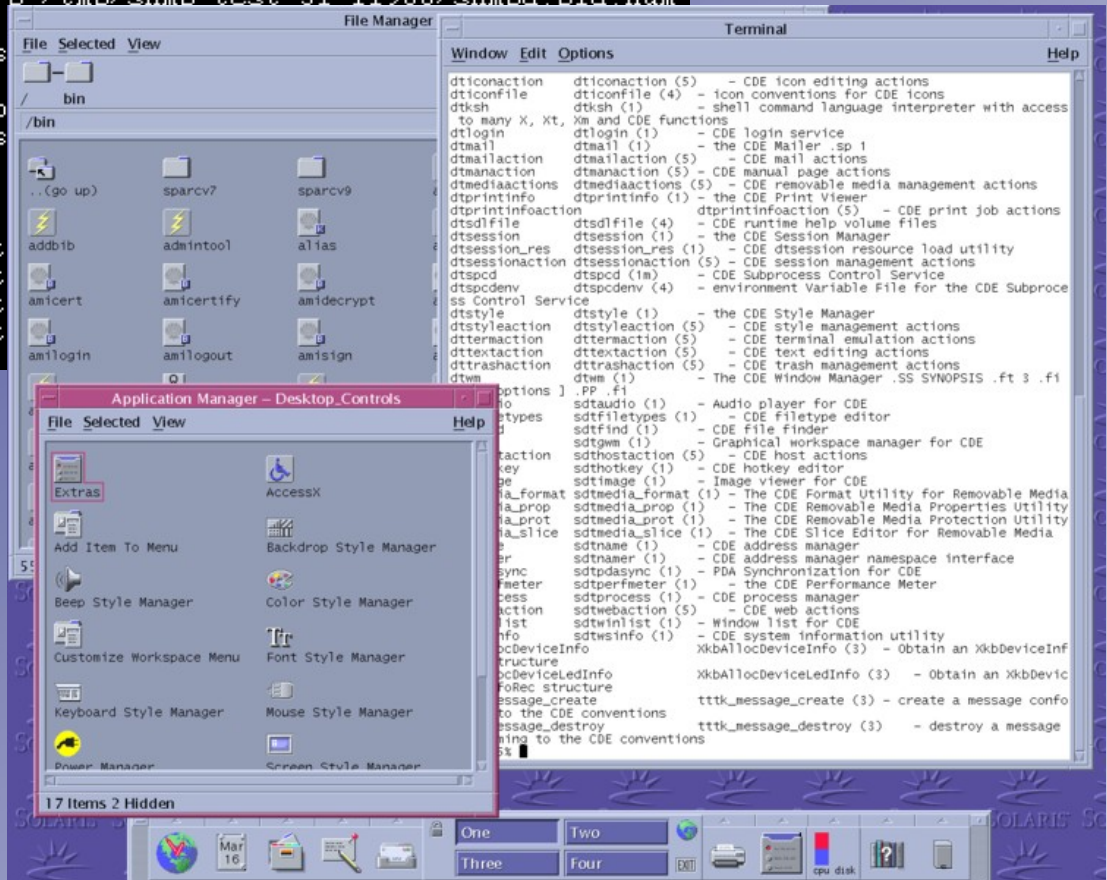





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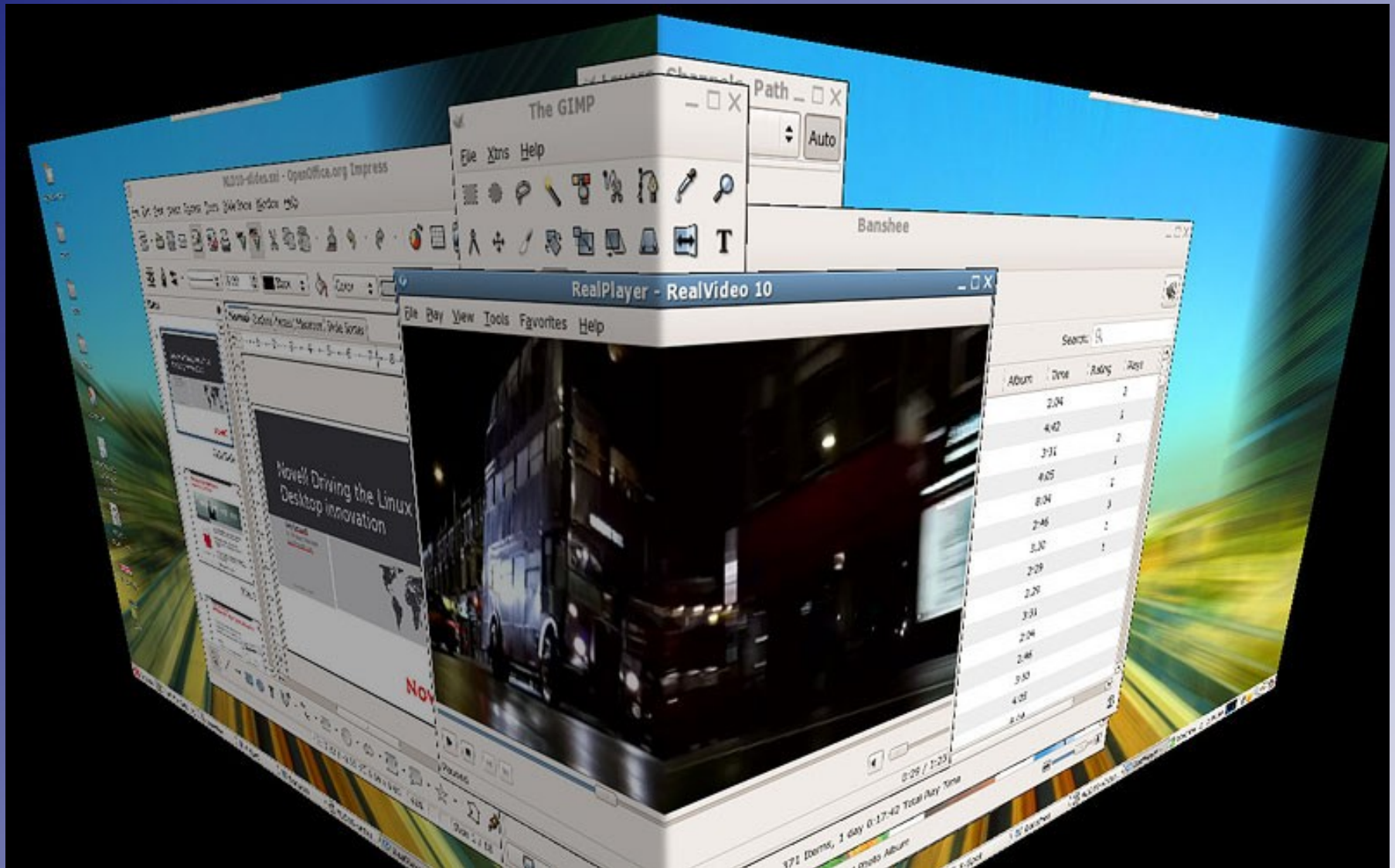
16087 ?? IW 0:00.04 bash /home/users/t/ta/tanders/src/net-snmp-main/dist/ns
16200 ?? DW 0:00.00 grep -v ^ *+ conftest.erl
16610 ?? IW 0:04.82 /bin/bash /home/users/t/ta/tanders/src/net-snmp-V5-1-pa
16929 ?? I 0:00.16 sh Compile cvs/RELEASE wxGTK
17066 ?? I 0:00.00 sh Compile cvs/RELEASE wxGTK
17686 ?? IW 0:00.03 bash /home/users/t/ta/tanders/src/net-snmp-main/dist/ns
17774 ?? IW 0:06.28 /bin/bash /home/users/t/ta/tanders/src/net-snmp-V5-3-pa
18239 ?? I 0:00.00 sh Compile cvs/RELEASE wxGTK
19497 ?? IWs 0:00.12 sshd: tanders@notty
23894 ?? S 0:00.07 gmake
24011 ?? S 2:09.33 snmpd -d -r -U -p /tmp/snmp-test-31-11960/snmpd.pid num
24544 ?? S 0:00.00 /bin/sh ./././././
26353 ?? IW 0:00.04 bash /home/users
27935 ?? DE 0:00.01 (bash)
28366 ?? IWs 0:00.13 sshd: tanders@no
29812 ?? IWs 0:00.03 bash /home/users
2336 p0 R+ 0:00.00 ps ax
21906 p0 Is 0:00.01 -bash
24304 p0 S 0:00.03 sh
697 00 IWs+ 0:00.01 /usr/libexec/get
639 E1 IWs+ 0:00.01 /usr/libexec/get
734 E2 IWs+ 0:00.01 /usr/libexec/get
762 E3 IWs+ 0:00.01 /usr/libexec/get
$

```



Arquitectura de sistema operativo

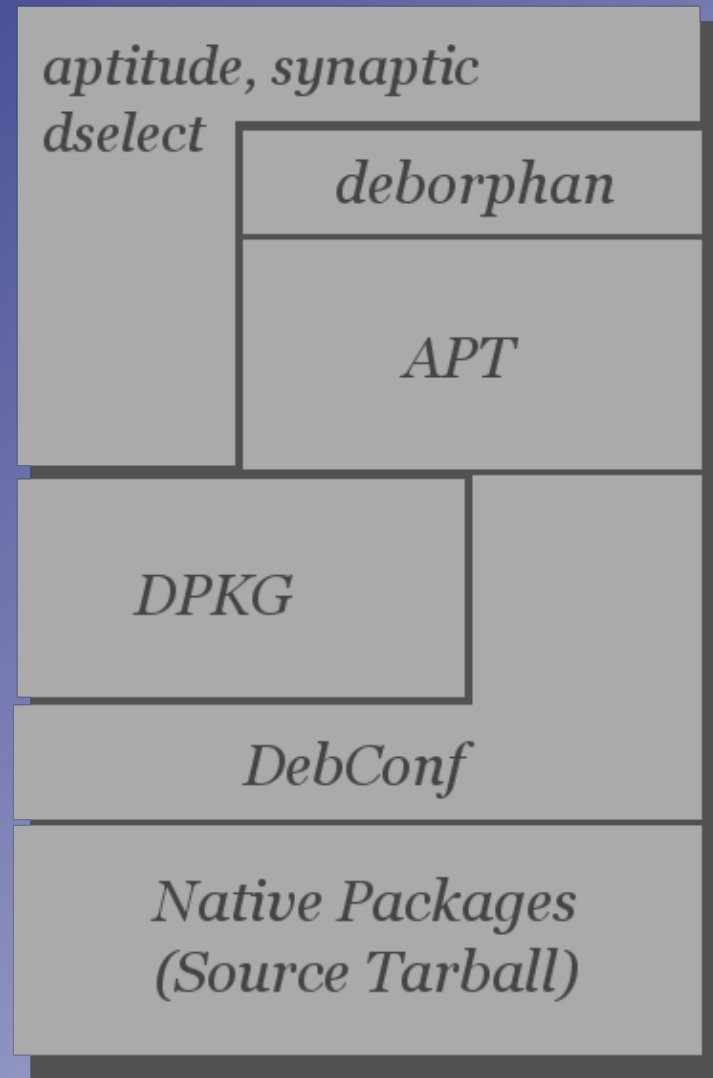
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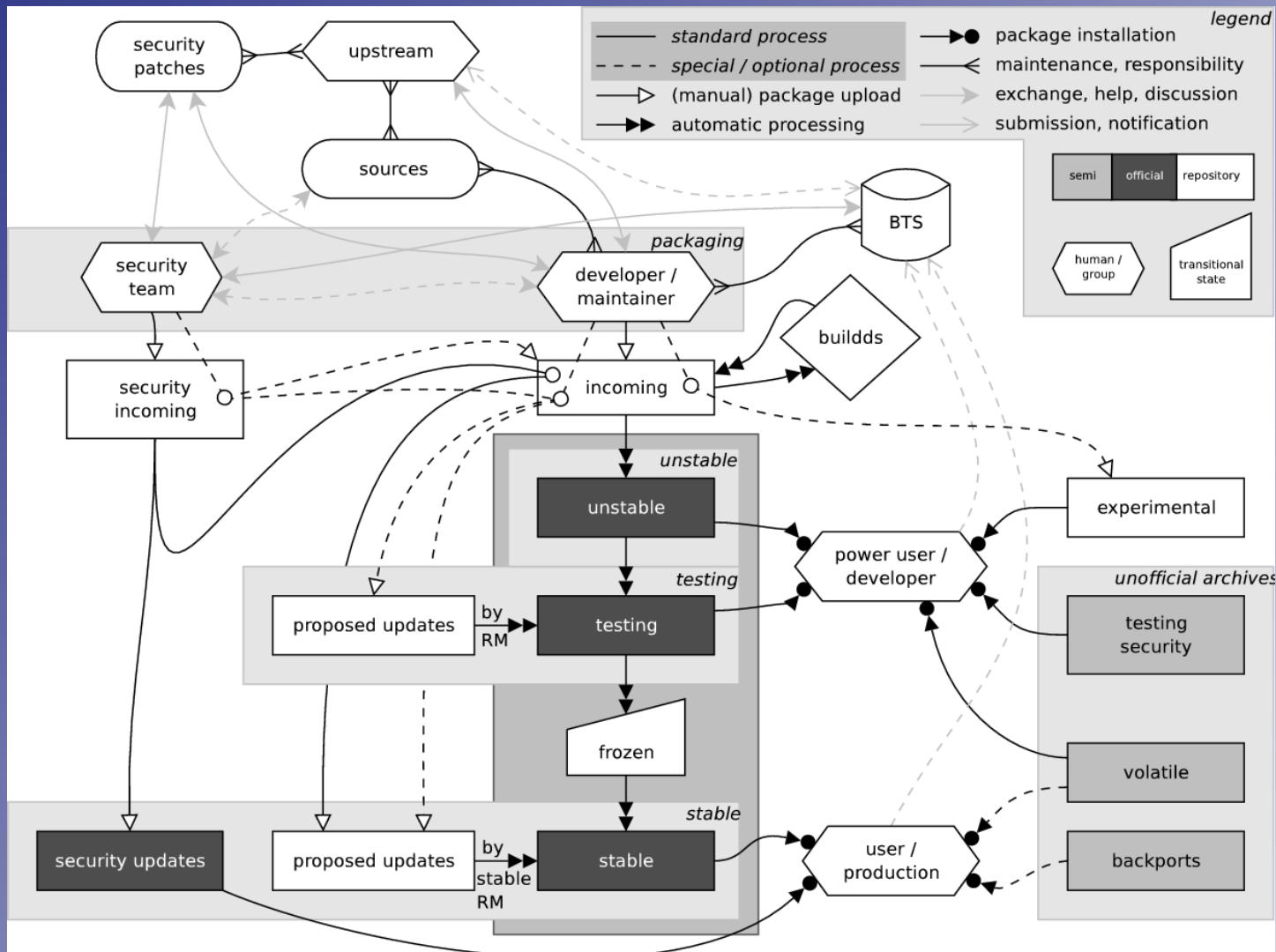
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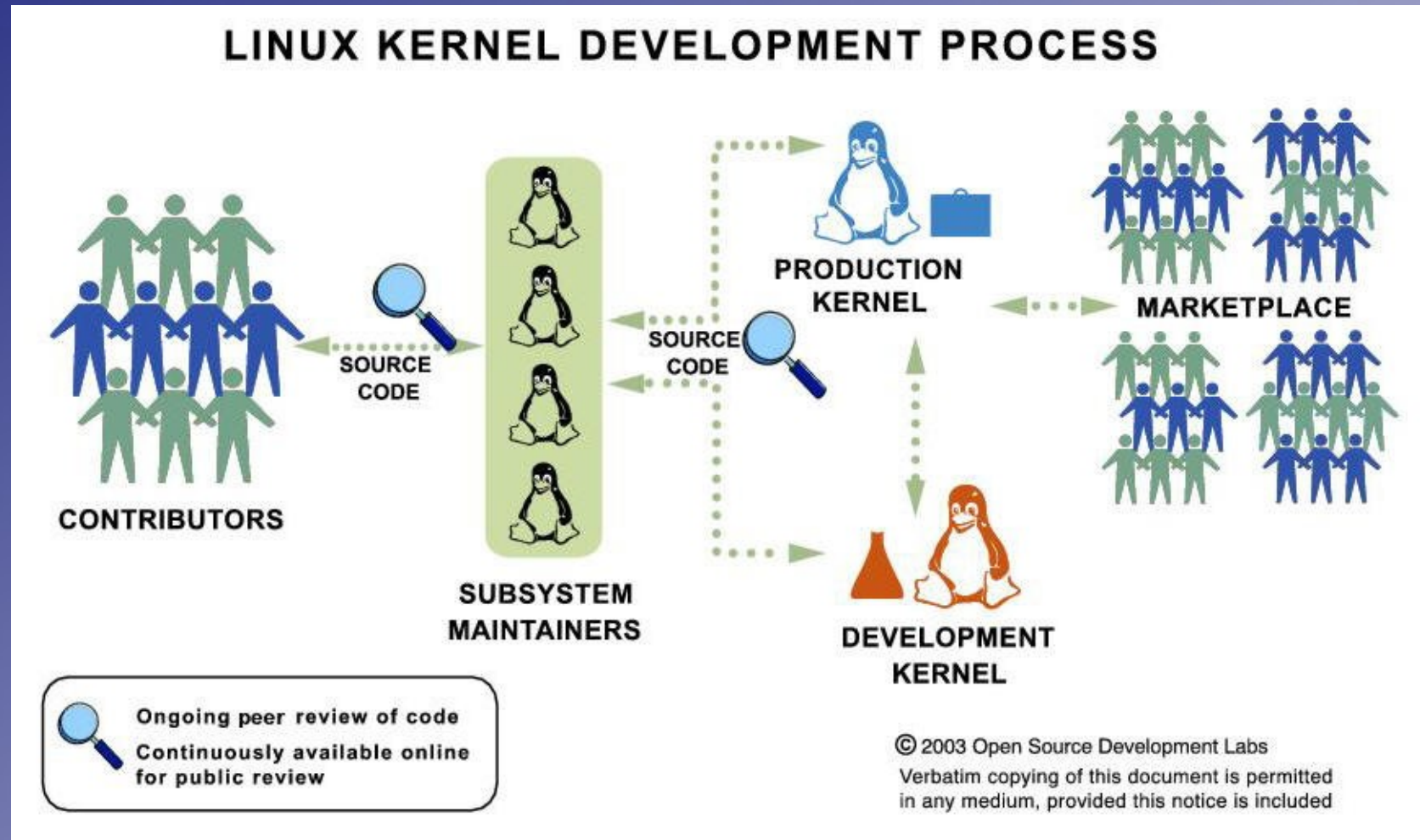
Organización de software



Ciclo de vida de software - Debian



Proceso de desarrollo



Árbol de fuente NetBSD y Linux

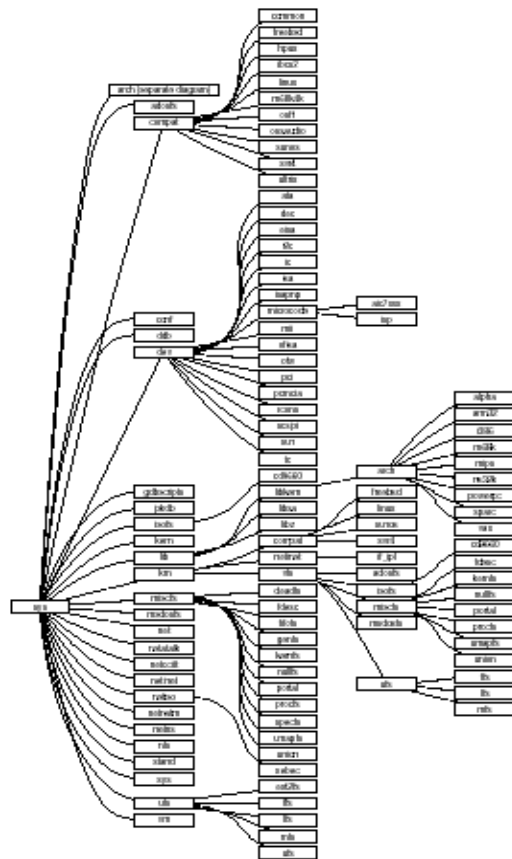


Figure 6.2 The NetBSD kernel main source tree.

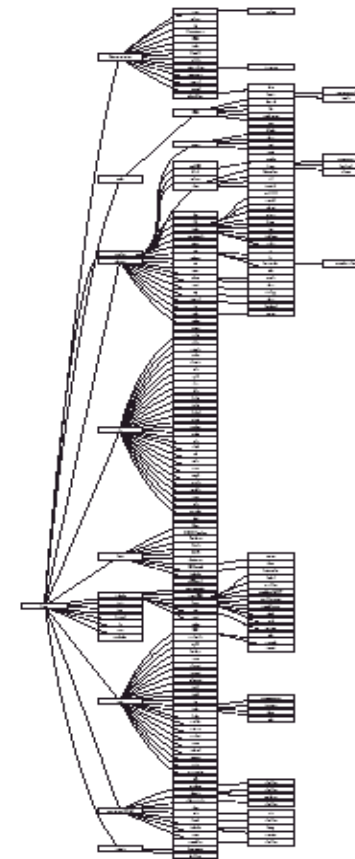


Figure 6.3 The Linux kernel source tree.

Desarrolladores de Linux



Arquitectura de sistema operativo

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Linux en la industria - OSDL



Arquitectura de sistema operativo

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¡Gracias!

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