

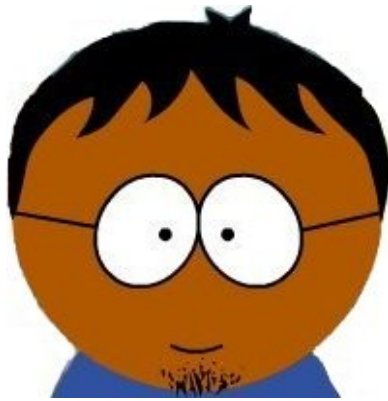
GNU/Linux, Server Web, dan Keamanan

Seminar Web {H,C}racking

Sabtu, 14 April 2007

Universitas Atma Jaya Yogyakarta





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Linux, GNU/Linux dan PLBOS*

* Perangkat Lunak Bebas dan Open Source





*to explain what Linux is, you have to
explain what an operating system is*

...

*think about an operating system is that you
have never ever supposed to see it, nobody
really use operating system. people use
programs.*

(Linus Torvalds, RevolutionOS film)

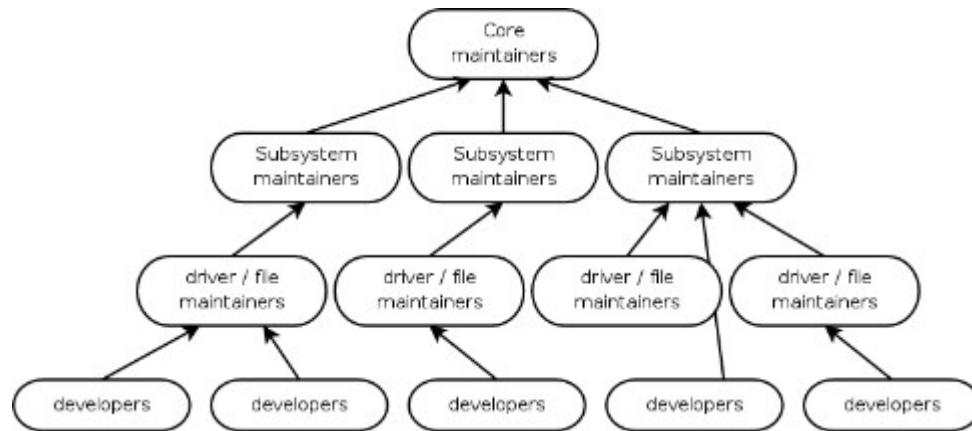


Linux adalah sebuah kernel
kernel = sistem operasi
Hasil proyek hobi seorang mahasiswa
Linus Torvalds
Finlandia, 1991
GNU GPL

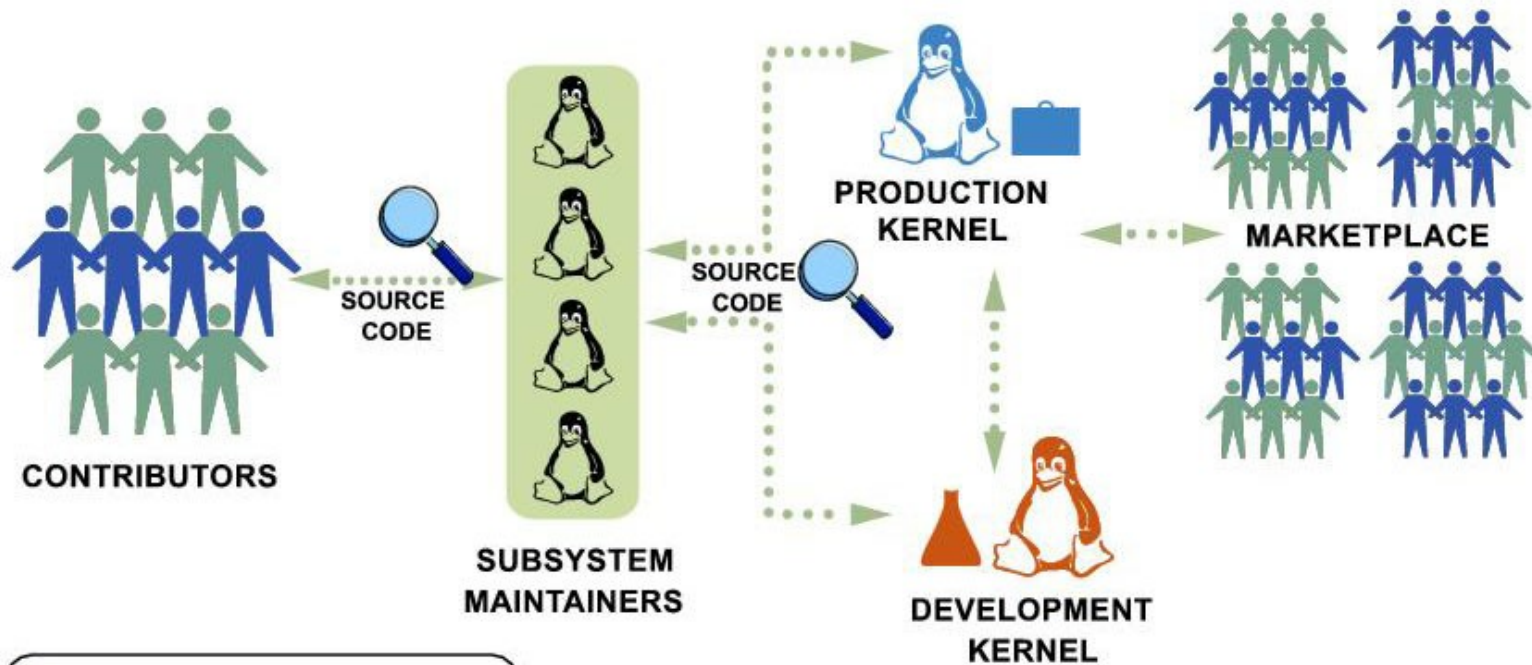





Hirarki Pengembang Kernel Linux



LINUX KERNEL DEVELOPMENT PROCESS



 Ongoing peer review of code
Continuously available online
for public review

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Linux di Perangkat Jaringan



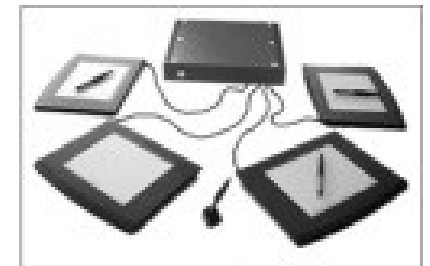
Linux di Ponsel



Linux di Robot



Linux di ...



Penggunaan Linux

- ✓ Server
- ✓ Desktop PC
- ✓ Network and Wireless Devices
- ✓ Jam
- ✓ Ponsel
- ✓ Super Computer
- ✓ Robot
- ✓ Perangkat Berkendaraan
- ✓ ...



GNU/Linux?

GNU Project's Programs+
Kernel Linux





Proyek GNU

Didirikan oleh Richard M Stallman, 1984

Gerakan *Free Software* atau Perangkat Lunak Bebas
Sistem operasi lengkap bergaya UNIX yang bebas
bagi masyarakat

free speech, not free drink



Empat (4) kebebasan

0. untuk menjalankan program untuk tujuan apapun
1. kebebasan untuk mempelajari bagaimana program bekerja dan mengadaptasikannya sesuai dengan kebutuhan
2. kebebasan untuk mendistribusikan kembali agar kita bisa membantu tetangga, teman, dan orang lain
3. kebebasan untuk memperbaiki atau meningkatkan program dan merilisnya ke publik. komunitas mendapatkan manfaat/imbal balik



FSF: GPL, LGPL, FDL

Free Software Foundation (FSF), General Public License (GPL),
Lesser General Public License (LGPL), Free Documentation License (FDL)





Open Source

cara atau metode pengembangan perangkat lunak dengan kebebasan membaca, mendistribusikan, dan memodifikasi kode sumber



Open Source Initiative (OSI)

Uji Kelayakan:

IBM Public License, New BSD License,
Mozilla Public License, Python License,

...

Mengacu pada:

The Open Source Definition



Unix/Linux Design

- Berawal dari lingkungan server dan jaringan
- Standar POSIX
- Relatif aman
- Relatif stabil
- Relatif handal/*reliable*
- *Manageable*



Perkembangan Unix/Linux

Dari lingkungan server dan jaringan sampai
sekarang ke lingkungan desktop dan
perangkat di sekitar kita

Mewarisi semua kemampuan dan fitur dari
"pendahulunya"



Linux di lingkungan jaringan

"Internet is Unix"

Servers: mail, DNS, ftp, router, proxy, firewall, application, ...

Statistik menunjukkan semakin banyak perusahaan yang menggantikan server Windows dengan server Linux

HP, IBM, Oracle mendukung Linux pada produk perangkat keras dan lunak



Server Web





Salah satu proyek Apache Software Foundation
(*apache.org*)

Cukup tahan banting, kelas *enterprise, extensible*

Digunakan kurang lebih 58,62% server di dunia
berdasarkan survei Netcraft (*netcraft.com*) April 2007

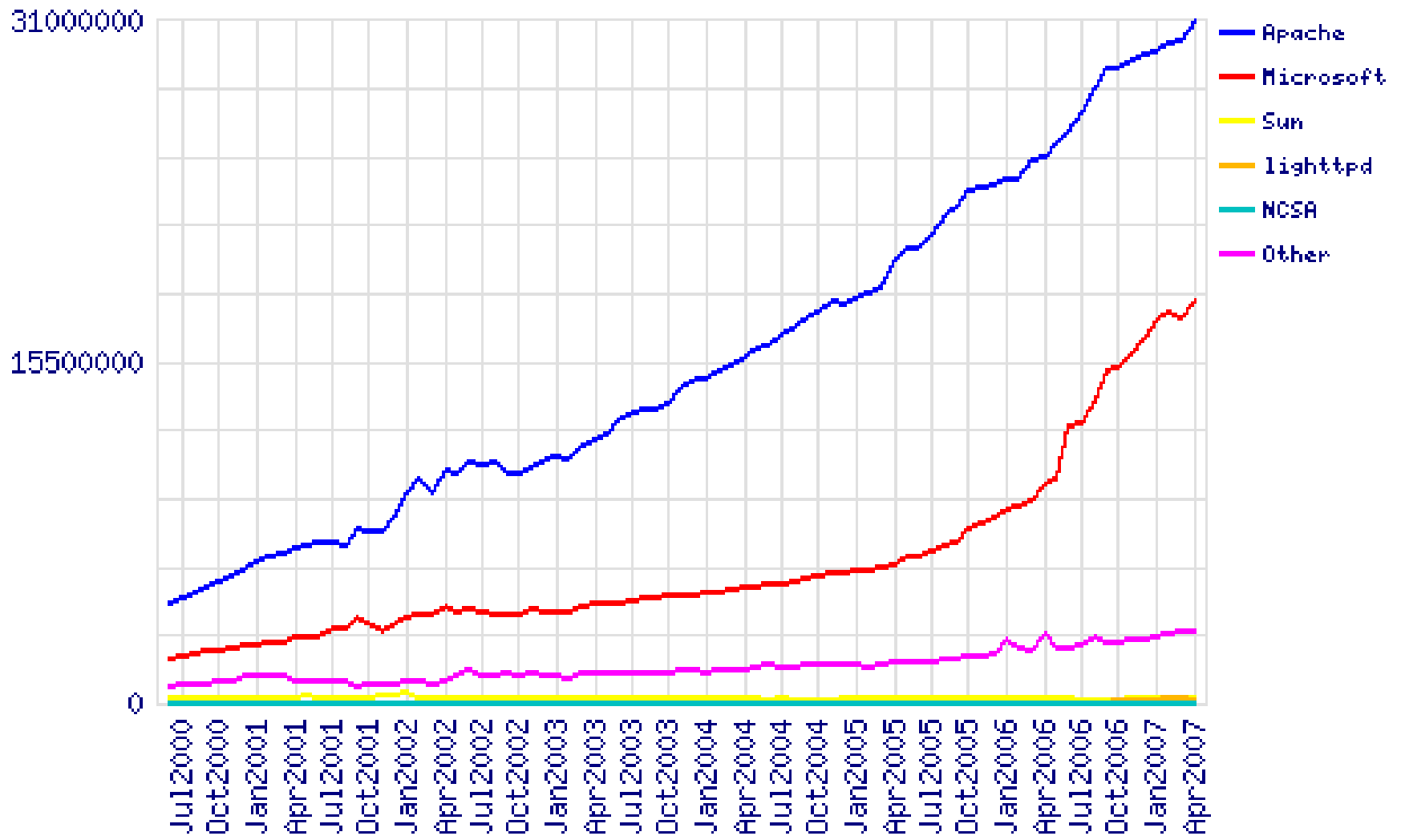
Mendukung modul dan fitur yang cukup banyak

Dikembangkan oleh banyak orang di dunia

License: Apache License 2.0 (Open Source Certified)

Mendukung varian Unix termasuk Linux, tersedia untuk
platform Windows





lighttpd



- ✓ Ringan
- ✓ Mendukung PHP
- ✓ Dukungan mod* relatif kurang dibandingkan apache http server
- ✓ Survei netcraft: 1,27%
- ✓ Versi terakhir 1.5.0-r1691
- ✓ Lisensi: BSD



Web Server lain?



Yankee Group/Sunbelt 2006 Server Reliability Survey Results

All of the major server operating system platforms have achieved a high degree of reliability, though Unix-based servers still record the least amount of annual downtime.



Linux vs.Windows: Total Cost of Ownership (TCO) Survey (Yankee Group)

The survey emphasized that businesses continue to expand the ways in which they utilize Linux. Over 50% of corporations now utilize Linux for a variety of functions including: Web server, Email server and specialized application server.

Perhaps the most startling survey revelation was the fact that over 50% of the respondents said they had performed a thorough TCO analysis. But when asked to calculate their specific Linux and Windows capital expenditure and maintenance costs, 75% on average, could not answer explicit questions.



Security Issues Survey

Software Security Summit Conference

(La Jolla, California, BZ Research polled 6,344 software development managers)

Lingkup Server:

Some 58% rated Windows Server very insecure or insecure versus 13% for Linux. Sun Solaris fared best, with only 6% rating the operating system very insecure or insecure.

On the positive side, some 74% of respondents rated Linux secure or very secure versus only 38% for Windows Server. Sun Solaris was rated secure or very secure by 66%.

Lingkup Aplikasi:

Asked about the security of operating systems against application-related hacks and exploits, Windows Server was again rated least secure. Some 58% of respondents rated Windows Server as very insecure or insecure versus 18% for Linux. On the other hand, Linux was deemed secure or very secure by 66% of respondents versus only 30% for Windows Server.



Perbandingan Keamanan Open Source vs Proprietary

Perbandingan keamanan open source dan *proprietary* pada delapan kategori:

open source was the clear winner in four of the categories: desktop/ client operating systems (44% to 17%); Web servers (43% to 14%); server operating systems (38% to 22%); and components and libraries (34% to 18%).





Hacker dan Cracker



Hacker

...most having to do with technical adeptness
and a delight in solving problems
and overcoming limits.

- Eric Steven Raymond (ESR) dalam *"How To Become A Hacker"*



Hacking

Software, Hardware, ...



Cracker

These are people (mainly adolescent males) who get a kick out of breaking into computers and phreaking the phone system.

- Eric Steven Raymond (ESR) dalam *"How To Become A Hacker"*

One who breaks security on a system.

- From Jargon File



Cracking

Software: Serial Number, Trial,
"Customizing", ...

System: Vulnerability scanning,
penetration, Denial of Service (DoS)
Attack, ...



Hacker vs Cracker

The basic difference is this: hackers build things, crackers break them.

- ESR dalam "How to Become A Hacker"



Serangan Tercatat

Digital Attacks: 2213541
Attacks On Hold: 1948
(*zone-h.org*)

