

# Smashing Windows



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# USS Yorktown

- In 1997, the USS Yorktown was on exercises off the coast of Virginia.
- Suddenly, the computers crashed and the ship lost all power. Luckily, the missiles were not armed.
- The ship had to be towed back to base.
- Engineers in the Atlantic Fleet Technical Support Centre blamed the disaster on the fact that the ship's computers were running Windows.

# Outline

- What is an operating system?
- What is wrong with Windows?
- What is Open Source software?
- Why should business switch to Open Source?
- How can your company switch to Open Source?

# What is an operating system?

- Computers have layers:
  - The bottom layer consists of the hardware
  - The top layer consists of end-user applications (eg. word-processing programs, internet browsers, etc.)
  - The operating system sits in between
- Many different operating systems are available:
  - Windows (98, 2000, NT, XP, etc)
  - Mac OS (8, 9, X)
  - Unix (Linux, Solaris, OpenBSD, etc)

# What's wrong with Windows?

- It's expensive
- It's riddled with bugs and often crashes
- It's prone to viruses and worms
- It's not updated frequently
- It's not easy to customise

# What is Open Source software?

- What is source code?
- Closed Source software
- Open Source software
- Free software
- Examples of Open Source software

# What is source code?

- Software is generally written in a textual form which can be read and understood by programmers: this is usually called the “source code”
- Many programs will not work unless the source code is converted to a so-called “binary” file
- Unlike source code, binary files cannot usually be understood by anybody (only by computers)

# Closed Source software

- When Microsoft sells you a piece of software, such as Windows or Office, you only get the binary files. Microsoft keeps the source code secret. This is “Closed Source” software.
- This has several consequences:
  - You can't “look under the bonnet”
  - You can't modify the software to suit your needs
  - You have to rely on Microsoft to fix bugs

# Open Source software

- Other software companies are not so secretive. They sell or give away the source code as well as the binary files. This is “Open Source” software.
- Open Source software has several advantages over closed source software:
  - Anybody can “look under the bonnet”
  - Users can modify the software to suit their needs
  - Bugs can be fixed by anyone

# Free Software

- Most Open Source software is “free” in several ways:
  - You don't have to pay anything for it. Not one penny. Ever.
  - You can modify it in any way you please.
  - You can redistribute it, providing you do not charge other people any money for doing so
- Different licenses provide variations on this theme (GPL, Debian, Creative Commons)

# Examples of Open Source software

- Linux – a UNIX-style operating system
- Open Office – word processing, spreadsheet, etc
- Mozilla – web browser, email
- GIMP – image manipulation
- Apache – server software
- Sourceforge.net – clearing house for OSS, now tracks more than 80,000 projects and 800,000 collaborators (all working for free)

# What is Linux?

- Linux is a free version of the UNIX operating system
- It was begun by Finnish student Linus Torvalds in 1991
- Since then, thousands of hackers worldwide have contributed to Linux
- It comes in various flavours or “distributions” (eg. Debian, Knoppix, SuSE, Mandrake, Red Hat)

# Why should business switch to Open Source?

- Economics
- Reliability
- Security
- Look and feel

# Economics

- Proprietary software is expensive – Open Source software is free
- Total cost of ownership is still cheaper with Open Source software
- With Open Source software there is no need for expensive license management
- Users are not locked in to a single product that they must pay to upgrade every time the product is improved

# Reliability

- Linux is much more stable than Windows because:
  - With Linux there is a clear separation between the kernel and the applications
  - The Linux kernel is very compact
  - Bugs are fixed much more quickly – often within days or even hours (NSU article, 25.06.03)
- Remember the USS Yorktown!

# Security

- The vast majority of viruses, worms and other digital attacks are Windows-specific
- The vulnerability of Windows is not due merely to the fact that it runs on so many computers – it is due to the very design of Windows itself
- Windows was designed for stand-alone desktops
- Linux was designed for networked machines
- Security through obscurity doesn't work

# Cyberterrorism

- Electronic forms of attack are the latest addition to the terrorist arsenal
- E-warfare can be devastating and poses less of a risk to the attacker
- Much critical infrastructure depends on networks running Windows
- CCIA report – “The Cost of Monopoly”
- Al-Qaeda has low-level of computer literacy

# Look and feel

- The look and feel of Windows is fixed by Microsoft
- Linux can be customised by individual users to suit their aesthetic preferences (eg. different desktop environments and window managers)
- No annoying paper-clips!

# How can your company switch to Open Source?

- Option 1: Install Open Office and Mozilla instead of Office, Explorer and Outlook (on top of Windows)
- Option 2: Install Linux instead of Windows
- Get support
  - Big companies now support Linux (IBM, HP, Dell)
  - Incubator Club



so viele vorteile sind fein!