How I Became Windows-Free

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A time span before, during, and after Windows

Orientation

- This will mostly be a “personal story”
- No religion is intended, implied or explicit
- This is not meant to be a sales pitch, though I will talk about some practices at my employer which we also (surprise!) sell
- If I don't mention your favorite tool, toy, OS, or cheese please don't be upset – these are my observations and practices

Yes, Virginia – there are other desktop environments

- Motivation for using Windows alternatives include
  - Security
  - Management services (software, user or policy management/automation)
  - Multi-user capabilities
  - Compatibility between server and desktop environments
  - Price / TCO
  - Hardware platform choice
  - Cultural/political reasons
- Obstacles
  - Windows-only software products
  - Windows orientation of much PC hardware
- Results and Experiences
  - I'll discuss the (mostly) good, plus the limitations

Personal history

- In the Golden Age
  - 3270 terminals, XEDIT for word processing, REXX for scripting, and NOTE, RICEMAIL or PROFS for e-mail
    - Neolithic age: glass TTY on both CMS and Unix
    - Stone age: real TTY...
- At previous employer
  - Windows the standard desktop, MS Office, Exchange and Outlook for e-mail. KEDIT (for me at least) text editing
  - I kept public e-mail address on VM for virus insulation; distinctly counter to "standard policy"
- Now
  - Solaris and Linux my standard desktop, about 50/50, with same tools, email and documents
  - Now Windows-free. Well, almost

At Sun

- Strong preference to not use MS product... (no kidding, eh?)
  - Sun is likely one of the few big companies largely not using Windows
- When I joined Sun in 2000:
  - Standard was a Sun workstation (eg: Ultra 10) running Solaris. CDE, Netscape, early StarOffice, dtmail, vi, emacs
  - Remote login and home directory for worldwide access
  - Field staff had laptops for presentations and on-site work
    - Mostly Windows, except for very early adopters of Linux on laptops
  - Loyal, unofficial, passionate Macintosh following
- Now:
  - Standard is Sun Ray thin client (I'll describe) to Solaris. GNOME, Mozilla, Thunderbird, Evolution, Firefox, StarOffice
  - Field staff have laptops; most run either Linux (either our “Java Desktop System” customization of SuSE, or RH) or Solaris
  - Loyal, unofficial, passionate Macintosh following (has grown)

Desktop

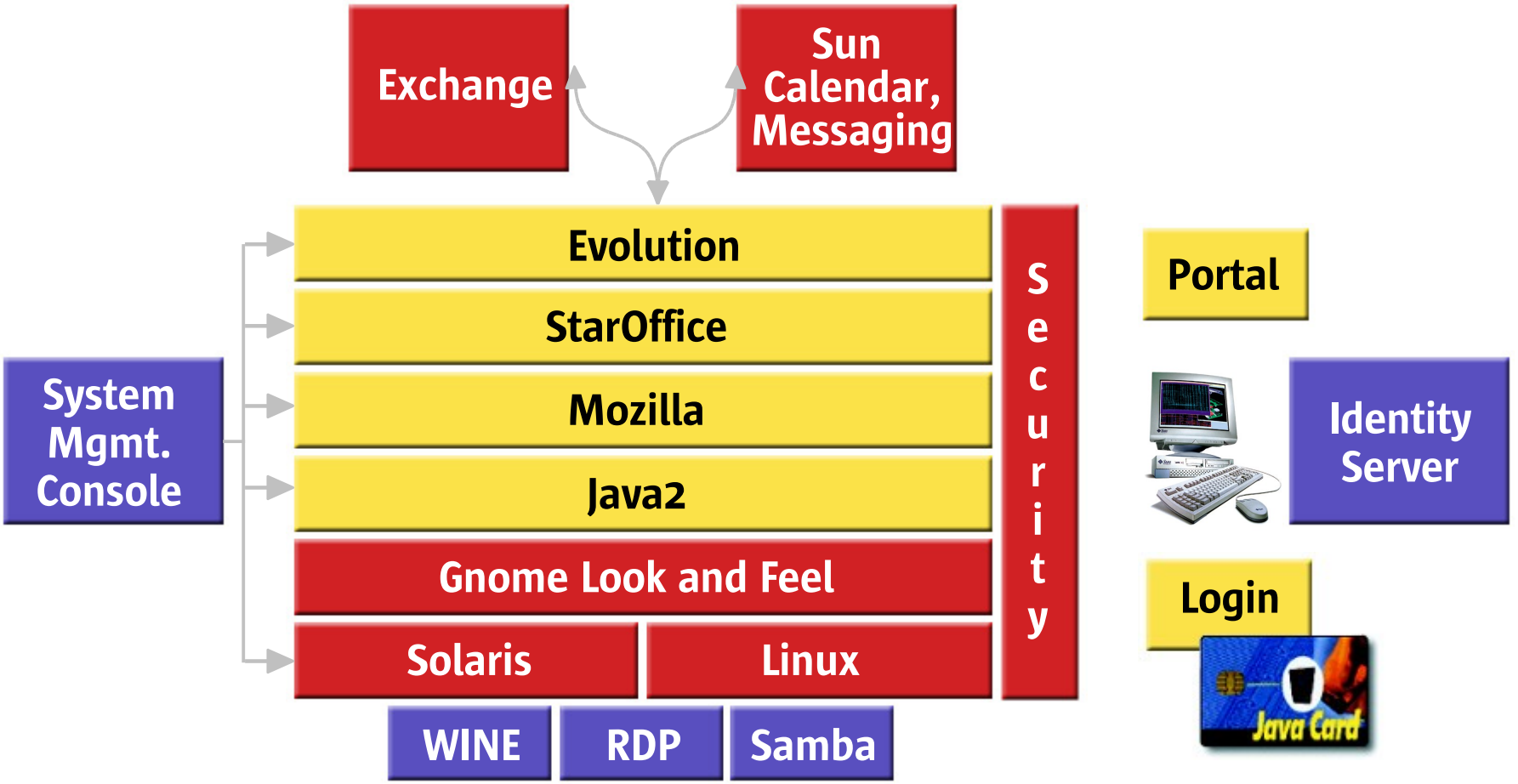
- Desktop that would be recognizable to most Windows users is a first step
- Open world choices: KDE, GNOME, plus alternatives and various dialects/customizations
- Consideration of “who is the user”
  - “Techie” population fraction of the larger base
  - Office worker
  - Personal/home use – things should be familiar and “just work”
- Need set of core apps (based on audience) that map onto the typical MS Windows experience

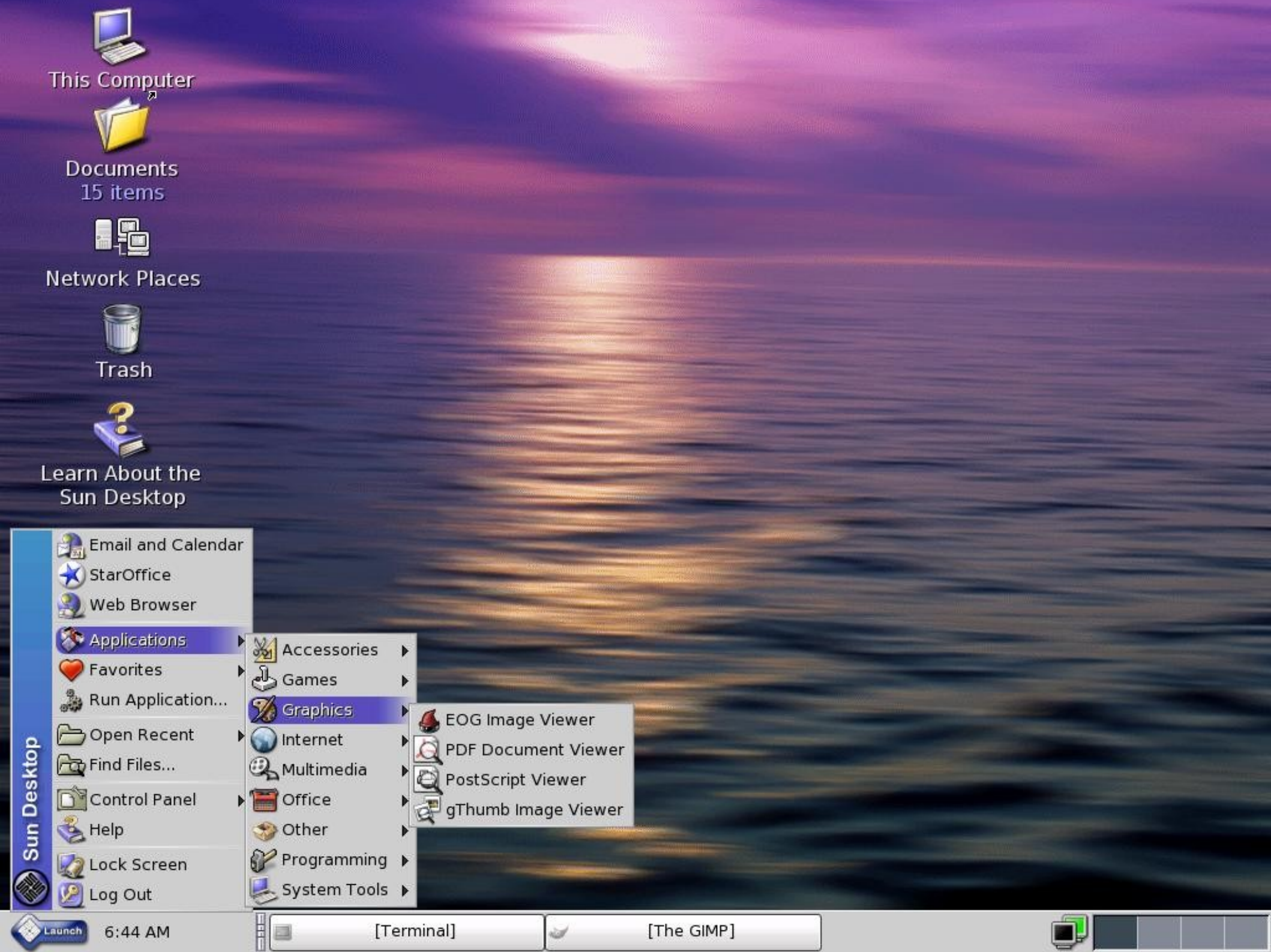
Open stack for Solaris or Linux

- Windows Desktop
- Internet Explorer
- Outlook
- Microsoft Office
- MSN Instant Messenger
- .NET
- DHS Warnings
- MS Windows/Office

- GNOME
- Mozilla
- Evolution
- StarOffice
- GAIM
- Java
- JavaCard
- JDS on Solaris or Linux

Client Stack
for both Solaris and Linux

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Documents
15 items
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Learn About the Sun Desktop
Email and Calendar
StarOffice
Web Browser
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Run Application...
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EOG Image Viewer
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[Terminal]
[The GIMP]

Functional equivalency

- Based on target audience, requires feature set that covers all/most of Windows user experience
- Depending on user, something is probably either missing or “doesn't work the same”. This is not necessarily a show stopper
- For corporate environments, may need to continue to provide access to legacy Windows applications even if desktop system is something else
  - Eg: Use Tarantella, Citrix, rdesktop, vnc...
- But, let's walk through some major function categories...

Internet access

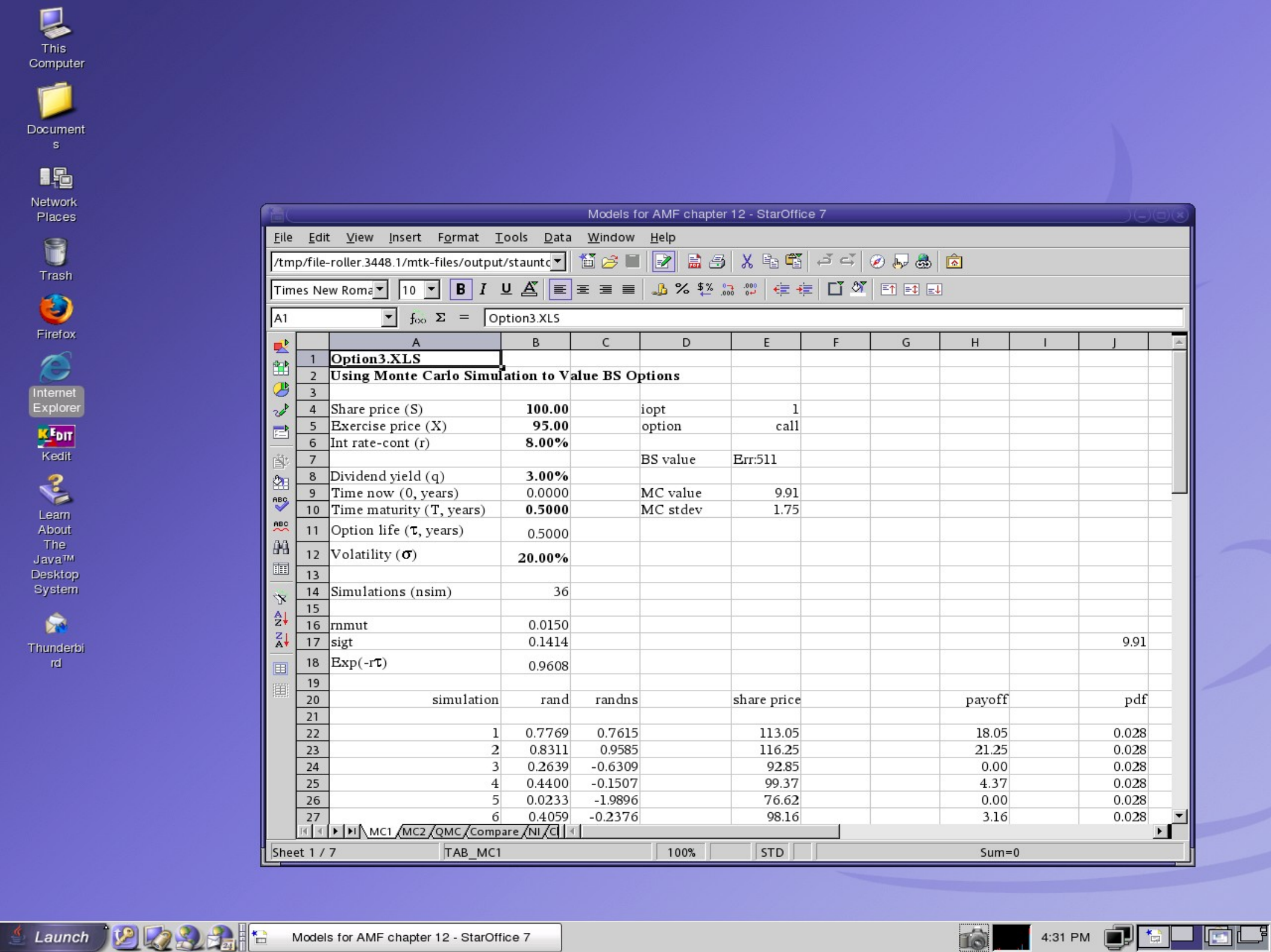
- Mozilla or Firefox instead of Internet Explorer
- In almost all ways a substantial improvement
  - See blog by ex-IE developer on why he switched to Firefox at http://www.scottberkun.com/blog/?p=115
- Tabbed viewing, better CSS compliance
- Most important: no more risk from IE exploits
  - Mozilla family has the rare hole, IE is always open
- Downsides:
  - IE-only sites (IE dialect rendering, MS JVM, Javascript and CSS). Rare, I think, except in corporate intranets
  - ActiveX not available: not an issue for me, considering my employer, and little or no use of ActiveX on Internet sites (ActiveX one of the reasons IE has security problems)

E-mail access

- Choice of either Evolution, Thunderbird, or Mozilla e-mail client instead of Outlook
  - Choice from the above is personal preference; all work well as IMAP clients (how I use them), have nice interfaces, etc
  - Evolution also has Exchange connector
  - All three work with Exchange if IMAP turned on
  - All three available on Linux, Solaris, Windows, etc
- Risk avoidance for viruses: Outlook (“petri dish”) is too willing to execute attachments
- I receive virus e-mails all the time (who doesn't?) and respond with as little angst as when I used PROFS
  - A fish can't catch cold from a giraffe

Office processing

- StarOffice instead of MS Office
  - Sun bought the company that produces it some years ago
  - Also available as OpenOffice: free, open-source project
  - Widely used on non-Windows platforms
- SO/OO analogues for MS Office components
  - Presentations like this (eg: PowerPoint)
  - Word processing (eg: Word)
  - Spreadsheets (eg: Excel)
  - SO/OO can read or write its own file formats, or read/save-as MS Office formats (.ppt, .doc, .xls)
  - Can export to PDF in three clicks. I like that
- Instantly wave goodbye to macro viruses...
- Limitations: Macros must be ported. SO has a migration tool for spreadsheets: works well, but not 100%



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2	**Using Monte Carlo Simulation to Value BS Options**									
3										
4	Share price (S)	**100.00**		iopt	1					
5	Exercise price (X)	**95.00**		option	call					
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24	3	0.2639	-0.6309		92.85			0.00		0.028
25	4	0.4400	-0.1507		99.37			4.37		0.028
26	5	0.0233	-1.9896		76.62			0.00		0.028
27	6	0.4059	-0.2376		98.16			3.16		0.028

MC1 MC2 QMC Compare NI C

Sheet 1 / 7 | TAB_MC1 | 100% | STD | Sum=0

Programmers and friends

- Need slightly different things than Joe User
- Decent editor for text files
  - Used XEDIT on VM/CMS, KEDIT on Windows
  - vi/vim not a substitute
  - Intense pain in beginning
  - Since have found a plethora of more than adequate editors: nedit, jEdit, j, etc.
- Development tools
  - Plenty of Java and C tools on Solaris or Linux
  - REXX if you look for it
  - Only the original Unix pipes, alas

Crutches

- When you really need that Windows application
- Can run Windows applications via Wine
- Questions of completeness, robustness, ISV certification or support, licensing
- Commercial packaging via CrossOver suite
- Doesn't address device driver or other “system-y” things
- Also: can use VMware or similar to actually run Windows. Definitely out of the “Joe User” category

Microsoft Word - STP_Demo_Technical__Spec.doc

File Edit View Insert Format Tools Table Window Help

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Executive Summary

This document is a proposal to build Phase One of an STP demo for Sun's IForce Centers. (Later phases are sketched out in the appendices. The initial STP demo, phase zero, is documented elsewhere.)

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NJ Division 2004-2005 Results - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media History Mail Print

Address http://www.njfencing.org/Season_Results/2004_2005/Results2004_2005.html

NJ Division 2004-2005 results

NJ Division Home —> All seasons' results —> This season's results

Date	Event
08/01/2004	Y12 MIXED FOIL
08/08/2004	OPEN FOIL
08/15/2004	OPEN EPEE
08/22/2004	OPEN MIXED FOIL
08/29/2004	OPEN FOIL
09/12/2004	OPEN FOIL
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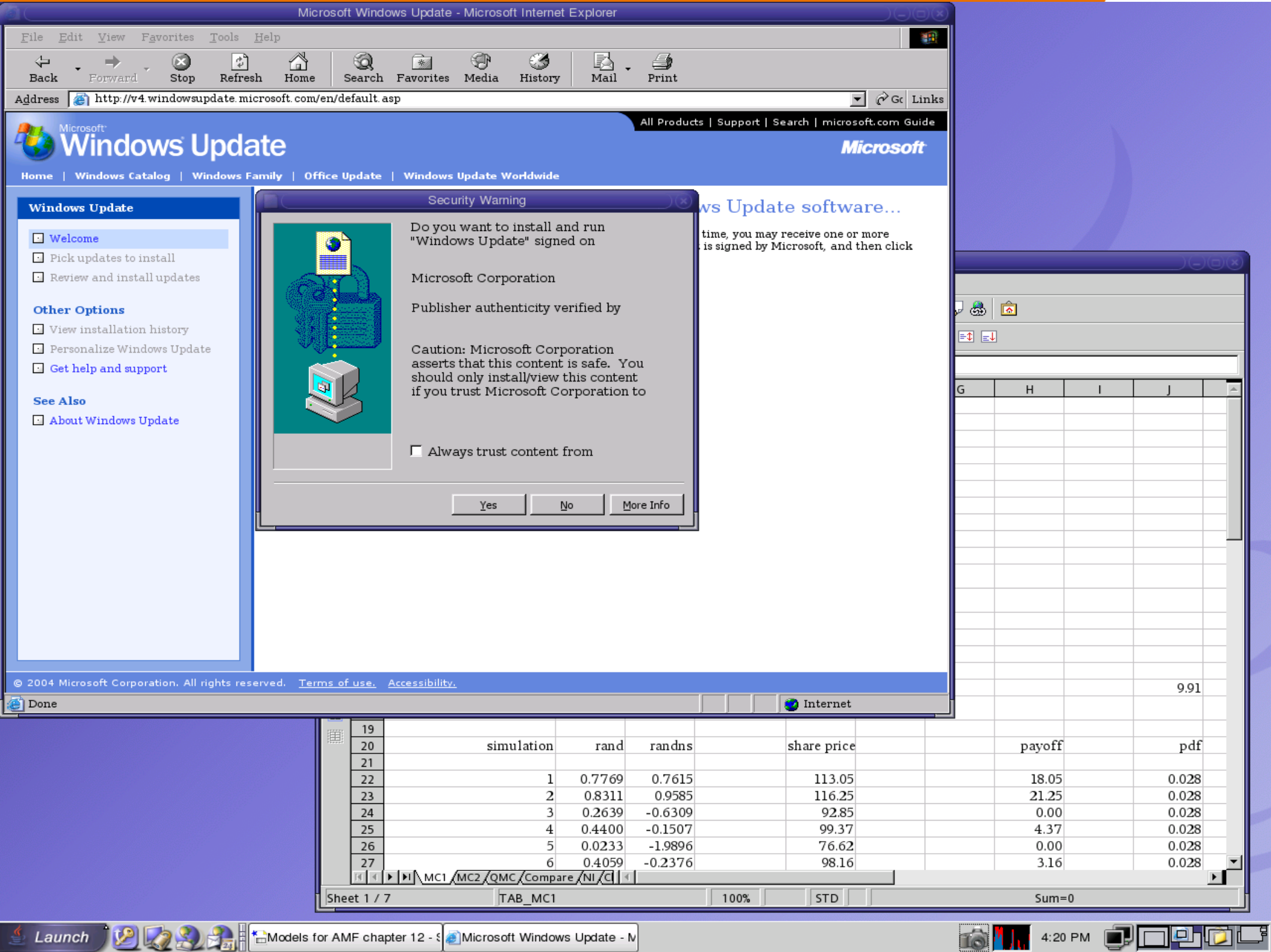
10/03/2004	FALL FESTIVAL OF FE MEN'S FOIL
10/16/2004	FALL FESTIVAL OF FE COMBINED MEN AND V

Terminal

File Edit View Terminal Go Help

Terminal Terminal

```
savit@ithilien:~> uname -a
Linux ithilien 2.4.21-203-default #1 Wed Apr 7 22:18:11 UTC 2004 i686 unknown
savit@ithilien:~>
```


Microsoft Windows Update - Microsoft Internet Explorer
File Edit View Favorites Tools Help
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All Products | Support | Search | microsoft.com Guide
Microsoft Windows Update
Microsoft
Home | Windows Catalog | Windows Family | Office Update | Windows Update Worldwide
Windows Update
Welcome
Pick updates to install
Review and install updates
Other Options
View installation history
Personalize Windows Update
Get help and support
See Also
About Windows Update
Security Warning
Do you want to install and run "Windows Update" signed on
Microsoft Corporation
Publisher authenticity verified by
Caution: Microsoft Corporation asserts that this content is safe. You should only install/view this content if you trust Microsoft Corporation to
Always trust content from
Yes
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More Info
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is signed by Microsoft, and then click
© 2004 Microsoft Corporation. All rights reserved. Terms of use. Accessibility.
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4 0.4400 -0.1507 99.37 4.37 0.028
5 0.0233 -1.9896 76.62 0.00 0.028
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Microsoft Windows Update - M
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FX Crossrates - Microsoft Internet Explorer

Real Time Foreign Exchange Cross Rates

	USD	GBP	EUR	CHF	JPY	CAD	NZD	ZAR	HKD	AUD
USD		0.5599	0.8214	1.2717	109.87		0.6609		7.7996	1.4278
GBP	1.7858		1.4669	2.2710	196.22	-1.785	1.1803	-1.785	13.929	2.5499
EUR	1.2173	0.6816		1.5481	133.75	-1.217	0.8046	-1.217	9.4949	1.7382
CHF	0.7863	0.4403	0.6459		86.400	-0.786	0.5197	-0.786	6.1332	1.1227
JPY	0.0091	0.0050	0.0074	0.0115						
CAD		-0.559	-0.821	-1.271						
NZD	1.5129	0.8472	1.2428	1.9240						
ZAR		-0.559	-0.821	-1.271						
HKD	0.1282	0.0717	0.1053	0.1630						
AUD	0.7003	0.3921	0.5753	0.8906						

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THE FUTURE OF MARKET DATA TECHNOLOGY

Fast
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trades
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page
Launch

Performance Test
Measure the peak update rate for RTML on your PC
Launch

Configurable quote list
An example of RTSL programming in a Web page
Launch

FX Cross-Rates
Calculating currency cross-rates on the fly, using RTSL and JavaScript
Launch

Internet

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22	1	0.7769	0.7615	113.05	18.05	0.028
23	2	0.8311	0.9585	116.25	21.25	0.028
24	3	0.2639	-0.6309	92.85	0.00	0.028
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MC1 MC2 QMC Compare NI C

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PDAs and Multimedia

- Most PDA support (Palm, Treo, Blackberry) oriented around Windows
- PalmOS products (Palm, Treo, others) can be made to work with Linux and Solaris
  - Jpilot, PDAsync, Evolution, pilot-manager, etc
  - Need current level versions of Linux or Solaris
  - USB vs. serial requires some work, reading docs
- Movies and sound are not a problem:
  - I use xine and xmms; there are plenty of others
  - RealAudio also available

Return of the thin client

Thin client – what's old is new again (sort of)

- No on-site computer – remote timesharing again!
- Server drives screen, keyboard and mouse
  - Pixel changes and user events transmitted
  - Server may or may not host actual apps
  - Can be Solaris or Linux
- Mobile sessions with Javacard
- Reconnect session, windows “as is”
- No viruses (No local OS or HW upgrades)
- Power savings: (unit uses <20W + display)
- Sun experience: 2 admins for every 4000 desktops
- Software deployments much easier
- “Stateless” device eliminates data theft/corruption
  - Can run via broadband to home or remote office, too

MOBILITY: Secure Javacard authentication

Exceptions and leftovers

- Not many: I rarely boot Windows
  - When I do: first thing I do after boot is update virus protection, even though I'm behind firewalls
- iPod: iTunes client runs only on Windows and Mac
  - Open source alternatives like GTkPod and myPod but they're not as good, and don't plug into Apple's music store
  - iPod as FAT disk drive works fine under Linux or Solaris
- Scanner: I bought one that only has a Windows driver
- Wireless
  - Works on Solaris and Linux (both pretty recent); I just haven't gotten around to it
- Internet access at some hotels: funny IE-specific redirect to their “do you accept this charge” page

The Security Question

- Some people say “Windows is attacked more only because it's so popular”, and isn't insecure by nature
  - Popularity does make Windows a target (a virus writer hits the biggest population) but there really are differences.
  - Non-Windows OSes manage a lot of money. If they were easy to crack, they'd be penetrated all the time too, for profit.
- Windows, MS Office, Outlook, IE designs all include choices that have made security exposures common
  - ActiveX in general (untrustable content executing on my machine?), lack of a real protection model, happiness to execute attachments while hiding their extensions, and many other features
- Moving to an alternative increases your security, even if Windows isn't inherently insecure

Other choices/ideas

- Q: Why didn't you mention OS X, BSD, etc?
  - Because I don't use them and don't know much about them
  - I hear Mac OS X is really good, and things Just Work, but I wanted to suffer the slings and arrows...
- Q: Why didn't you mention <cool package XYZ>?
  - I don't know – tell me about it. It might be something I never heard of that would make my life easier
- Q: Is <program XYZ> available outside Windows?
  - Maybe, maybe not. If the question is “Is XYZ available”, the answer might be “no”, but there may be a substitute. Eg: use GIMP instead of Adobe Photoshop. Think “function” rather than “product”
- Q: Could you use a 3270 again?
  - Only a 3279-3 with really good phosphor intensity

Getting Started

- Evaluate your needs and environment
  - Compatibility with corporate standard for documents or platform
  - Application needs: Internet, mail, graphics or multimedia, PDA support, wireless, music, program development, many others
  - Desire to learn a particular platform
- Select OS and (if Linux, a distro) and install it
  - iMac or Mac Mini require a new machine
  - Linux or Solaris can coexist on Windows PC
- Live in new environment
  - List what is missing, rank “must have” or “nice to have” features
    - Look for equivalent tools/methods: they may exist
  - List features you like/dislike
    - Try to distinguish between the feature itself and your response to it because it's new and different

Coexistence

- All-at-once conversion unlikely
  - Prepare to switch between “production” and “test” environments
  - Back up files and have method to make available to both OSes
- Coexistence on same machine (Solaris or Linux)
  - Can partition disk so Windows and new OS are both available
    - I suggest booting to GRUB and then selecting OS
  - Use VMware instead, and install new environment as a guest
  - Easy to destroy existing Windows environment. Disk sharing requires knowledge of partitioning and other magic tricks
  - Use a FAT32 partition for data sharing, as most OSes know how to read and write it – unlike NTFS
- Coexistence via spare or new machine: safe, easy
  - Mandatory with iMac or Mac Mini
  - Consider using a KVM switch for keyboard/mouse/display sharing

Conclusions

- Yes, there is “life after Windows”
- It's less scary. I open e-mail without fear
- I use same OSes for development and "every day" desktop work
  - example: bring up Grid Engine under Solaris or Linux
  - I can debug with Dtrace, or use a Zone as a sandbox
- I can still waste time playing music, watching movies
- Device support sufficient to my needs
- Occasional pieces missing but gaps closing
  - A few years ago Linux-on-laptop was an adventure; now it's at “glitch” level. Similar with Solaris 10
- I'm glad I switched

References

- Many, many Internet references
  - http://www.sun.com/software/javadesktopsystem/index.xml
  - http://www.opensolaris.org/
  - http://www.novell.com/products/desktop/
  - http://www.redhat.com/fedora/
  - http://www.linux-laptop.net/
  - http://www.desktoplinux.com/
  - IBM Redbook SG24-6380 “Linux Client Migration Cookbook A Practical Planning and Implementation Guide for Migrating to Desktop Linux” (Domino URL too long to copy...)
  - http://www.apple.com/macosx/

How I Became Windows-Free

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