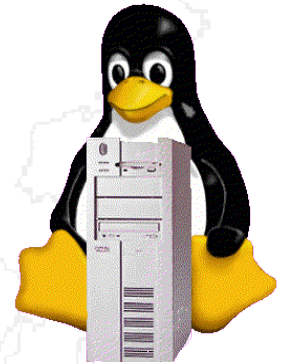# Linux in the Enterprise Where are the limits

John H Terpstra
Linux Evangelist
VP Community Relations
TurboLinux, Inc.
E-mail: jht@turbolinux.com
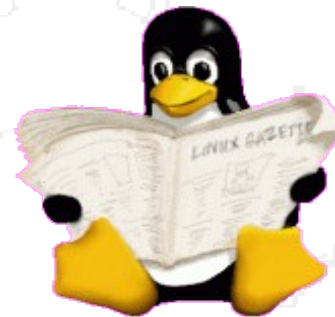
Agenda

- Precedence
- War and Peace
- Open Source Software:
  - Significance
  - Implications
  - Market reactions - past, present, and future
- Lessons
- Application
- Conclusion

Precedence - The King and the Fool

- Joseph serves in Pharaoh's Courts and becomes a precinct ruler:
    - Serve well and prosper!

Precedence - The Way of the Dinosaur

- Empires that have fallen:
  - Egyptian
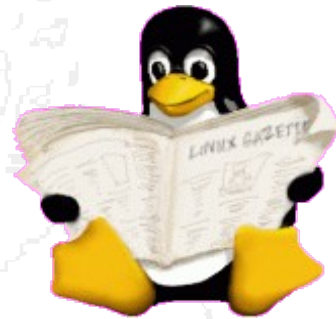 - Medo-Persian
  - Babylonian
  - Greek
  - Roman

- Cause of the fall:
  - Growth of centralization & fatness
    - loss of desire/will power
    - escalating costs of expansion: human and infrastructure

Precedence - The Fall of Rome

- ◆ Roman Empire
  - ◆ Roman citizens should not work
    - ◆ dependency on captive slaves
    - ◆ slaves could earn citizenship
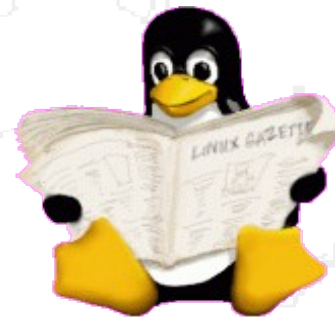   - ◆ more slaves needed
  - ◆ Roads through the empire
    - ◆ growth made roads longer
      - ◆ meant food would decay before reaching Rome
      - ◆ escalating costs of safe passage
- ◆ Logistics choked the empire!

Examples of Modern Empire Vulnerabilities

Spanish

Became fat and wealthy
- good target for pirate strikes
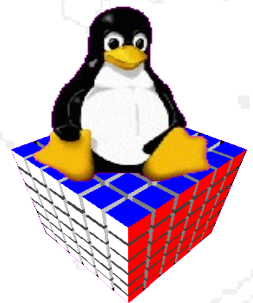- loved by English for their treasures!

English

- stretched too thin
- cost of protection
- taxes were rejected
- rebellion as subjugated empires struck back

Soviet

- cost of maintaining the empire
- lack of self motivation
- required constant economic infusions

Moral: All empires get challenged!

Examples of Modern Empires

◆ Closer to home - each challenged by the next invention:
  ◆ Transport
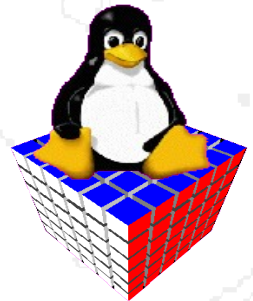   ◆ Railroads
    ◆ Cars/Buses/Trucks
    ◆ Air Transport
  ◆ Government
    ◆ Once taxes paid for all government activities
      ◆ Now threatened by technological change
        ◆ The INTERNET and e-Business!

The IT Empire can fall too

◆Empires built on proprietary systems

♦IBM

♦DEC

♦Sun

♦MicroSoft

◆Each made possible by a technological change that lowered economic barriers and changed the rules

Eventually All Empires Collapse

- History has shown that every empire eventually collapses due the to exponential cost of sustaining its growth.

    - Technology accelerates the challenge!

- Centralization is costly - the alternative is to distribute responsibility, i.e.: to decentralize

- Open Source development maximizes decentralization, an anti-empire feature.

The IT Industry Empire
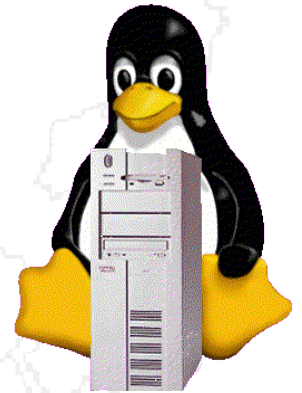
- The quest for market control
  - IBM
    - Use of Complexity as a tool of dominance
  - Sun
    - Open software and proprietary hardware to gain market dominance
  - Microsoft
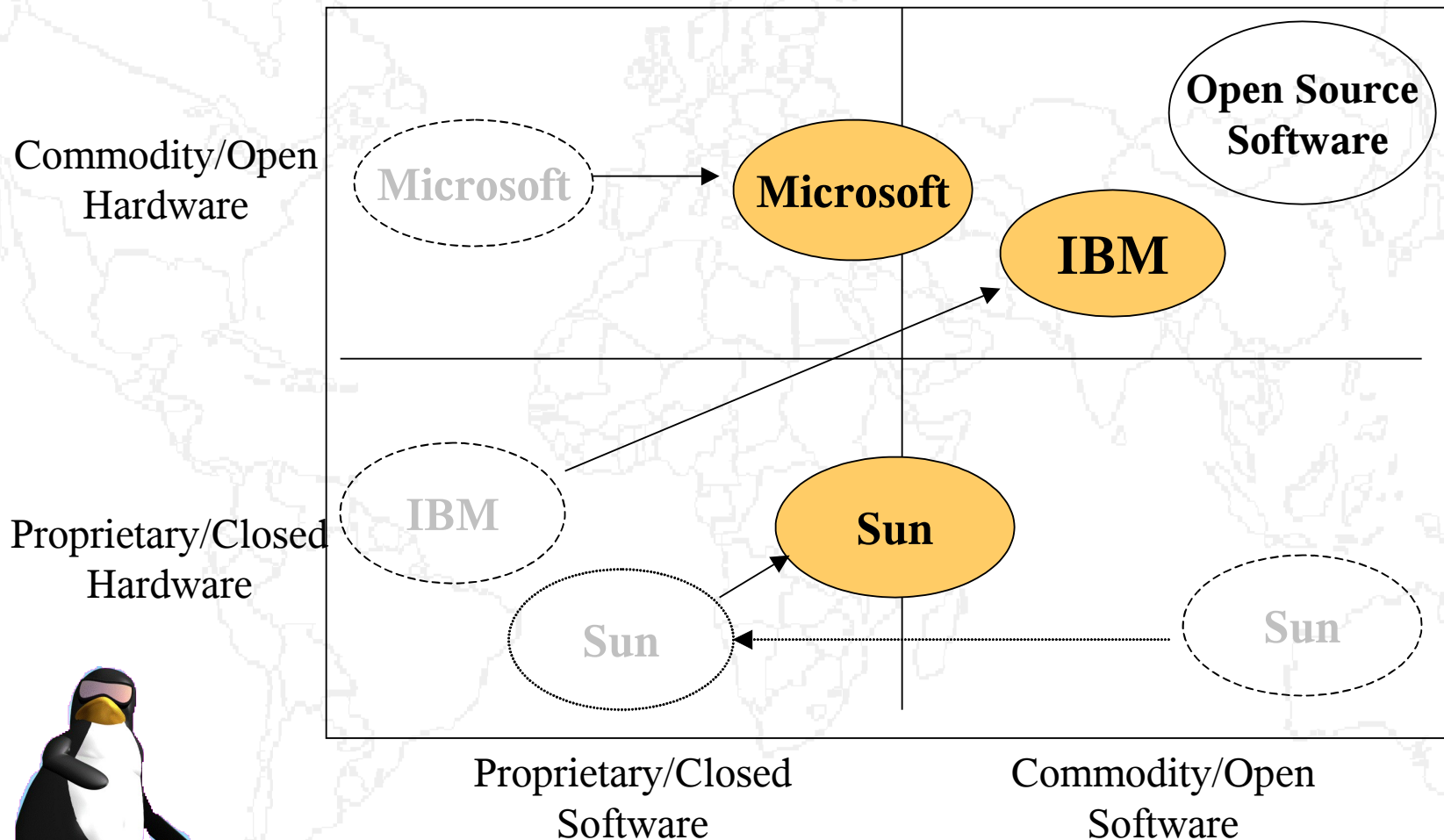   - Integration and market dominance using commodity hardware but with complex closed source, proprietary software
  - Open Source
    - Service as a tool to gain market dominance
      - Hardware and software are now commodities

The IT Industry Empires

Commodity/Open
Hardware

Microsoft

Microsoft

Open Source
Software

IBM

Proprietary/Closed
Hardware

IBM

Sun

Sun

Proprietary/Closed
Software

Commodity/Open
Software

War and Peace

"I have examined aspects of all markets, the role and practices of Unix within it's markets, and I have concluded that competitors in every market past, present and future practice the refined art of war. So even today, Unix means WAR!"

Roger Fraumann, President of Unix International, 1992 (AUUG Conference, Melbourne, Australia).

Linux in the enterprise

- ◆ Can not be sustained through the deployment of EMPIRE building tactics

- ◆ Enterprise customers want peace in the information technology world through:

  - ◆ the deployment of standards complying operating systems and software

  - ◆ software that offers the best inter-operability

  - ◆ resellers and support companies that satisfy customer needs extra well

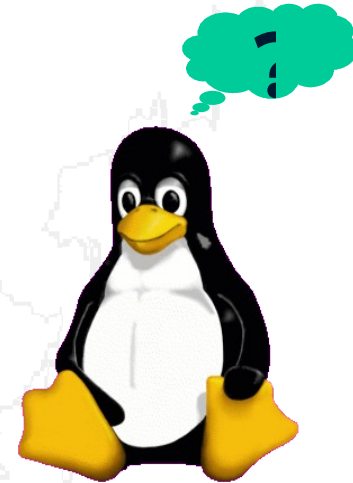# Open Source Linux - Where does it fit?
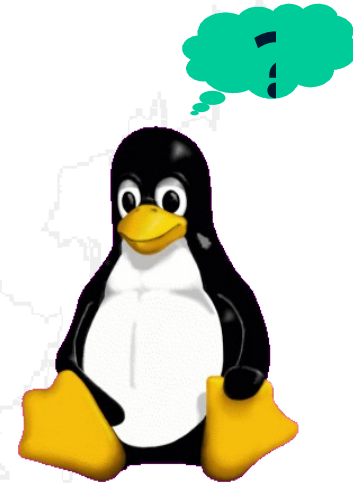
◆ Open Source Means:
   ◆ Open Software Source Code
   Open Standards Compliance
      ◆ LSB Standards embrace existing standards
         ◆ Posix, Open Group, others

It does not mean that the code is not copyrighted
It is NOT the opposite of Proprietary
It is the opposite of Closed Source

Open Source - Where does it fit?

❖Closed Source Means:

❖No public/peer code review ability
Less informed code review == potentially more bugs

It does not mean that the code is copyrighted - but you will never know because you can't check it out!

It is NOT the opposite of Non-copyrighted code

The customer usually finds the bugs!

Open Source and Copyright

- Nearly all Open Source Software is copyrighted

  - GNU GPL is a copyrighted licensing scheme

- Much Open Source Software is under a non-GPL license

  - Qt, BSD, Sun Open Community, Artistic licenses, etc.

- Open Source does NOT mean public domain!

The COST of Open Source Software

◆ All developments in human history have a cost!

◆ Open Source Software is very costly

   ◆ Someone pays the price of development
      Many people do the development work

◆ Open Source Software that is under the GNU GPL
   is free from software licensing fees:

   ◆ **Not free:**
      ◆ from copyright
         from licensing
         as in freedom of beer!

Open Source Software

- Significance:
  - Source code availability gives freedom from proprietary constraints
  - Anyone can modify or improve:
    - Operating System
    - Applications
  - Anyone can provide support
  - Anyone can validate the code
- Projects that gain large scale interest have many dedicated developers who are motivated by a desire for quality

Implications of Open Source Software

- Key Hooks for Differentiation
  - Service
    - Need to understand what consumers need
    - Distributions need to focus on specific market needs
  - Peace of mind
    - Consumers need to understand how Open Source works for them
      - Problem resolution process
      - Bug fix turn-around
      - Responsibility and accountability

Market Reactions
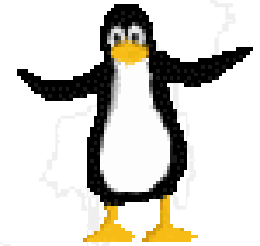
3 Stages:
- Early Reaction
  - ◆FUD - fear, uncertainty, doubt
    Pass off lightly
    Ridicule

- Embrace but not understand
  - ◆Attempts to continue to operate in closed source mode
    Attempts to conquer Open Source and force closed source style operation

- Active Support
  - ◆Need to focus on customer satisfaction issues

Lessons

◆Need to know how purchase decisions are made

◆and how to take best advantage of this knowledge.

"In every market there are two rules that lead to success:
        Know your customer and know how to serve him!"

Philip Kotler, Marketing Management Practice

Application

- The established enterprise back-end solutions are:

  - MS Windows NT Back Office

  - Novell NetWare

  - Unix based systems

- There are Open Source solutions for nearly every service that the above systems provide. Where there is no Open Source solution one can use a closed source or proprietary solution to complete a Linux based enterprise alternative.

Comparison: NT BackOffice vs. Linux
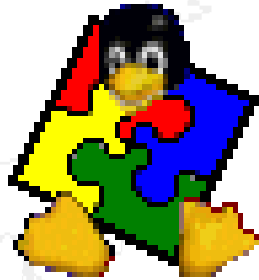
- File & Print
  - Windows-SMB
    NetWare
    MacIntosh

- IIS Web/FTP
- Exchange Server
- SMS
- MS Proxy Server
- MS Index Server
- MS SQL
- (Firewall ????)

- Samba
- Mars_NWE
- NetAtalk
- Apache / ProFTPd
- Sendmail/IMAP/POP
- EnlightenDSM
- Squid
- Isearch/htDig/glimpse
- PostgreSQL/MySQL
- IP Chains

Where are the limits - today

- IA32 has 32 signed file pointer
  - limit is +/- 2GB file pointer offset

- TCP/IP performance
  - kernel 2.4.x will offer higher TCP/IP throughput

- Applications
  - Few Office applications

    - StarOffice, AplixWare, Corel WordPerfect

  - Few Business Applications

    - Accounting, MRP, ERP, others

  - Lack of established IT infrastructure

  -

Linux in the enterprise today

- Well established as a File & Print server
  - 65-70% of commercial Samba installations run on Linux
  - There are about 5.5-6 million commercial Samba installations
  - The average number of clients per network is 20
  - That means that roughly 25% of all Microsoft Windows clients depend on Linux to some extent for file and print services!

Linux in the enterprise today

- Linux is well established in the Internet space as:
  - A mail server (sendmail)
  - A Web server (apache and modular extensions, eg: php3, ssl, perl, etc.)
  - A Web proxy server (squid)
  - A firewall system (ipchains)
  - An SQL server (MySQL, Postgresql)
-
  So CLEARLY - Linux has a place today!

Application of lessons we can learn

◆Linux offers the enterprise user an exceptional platform for solving information technology problems

◆Linux can serve the business community well

◆Linux will prosper in commercial use
   ◆providing those who deploy Linux and those who offer the enterprise user support remember what the game is all about:

◆**Customer Service and Needs Satisfaction!**

Customer Needs Satisfying Service?

- Distributions need to acknowledge that customers want a solution to information problems
  - Not an particular operating system solution
- Customers want a solution that takes away pain
  - A good Linux based solution will focus on customer needs - not on Linux
  - Often want a particular application oriented solution
- VARs and Support Channel Needs
  - 1) Knowledge of how to solve customer problems
  - 2) A packaged way of doing profitable business

Can Linux Business be Franchised?

- Is there an opportunity to run a McLinux style business?
  - - Standardized
  - - Easy to replicate
- Who will try it first?

- How would a McLinux function?
  - Is franchizing like licencing?
    Is franchizing against the Open Source concept?
    What will stop McLinux from being successful?
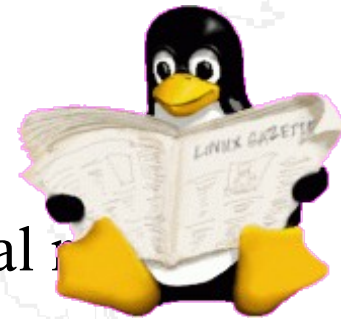
Linux in the Enterprise

◆ The End

But sit back for some news from your sponsors ...

Enterprise Linux in the News
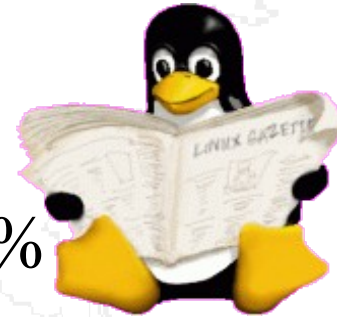
- ❖ "DOJ states concern over Samba on Linux 95% marketshare" NY Times, January 26, 2002

- ❖ "Andrew Tridgell, Chairman of SambaSoft, rejects DOJ's injunction to break up Samba into three companies: Programmers, Beta Testers, and Users" Wall Street Journal, June 26, 2003

- ❖ U.S. Congress appoints a standing committee against Internet sabotage. Committee has mandated use of Linux on the desktop to arrest the spread of VBx viruses in E-mail" Health Journal, September 2, 2004

Enterprise Linux in the News

◆ Hillary Clinton makes Linux foundation of Presidential re-election campaign" Forbes, September 7, 2004

◆ "Linux IV running on Lintel's new 1,024-bit Ustranium XVIII processor achieves stunning web-serving benchmarks. Transaction per second rate breaks sound barrier. Local neighbors complain and launch civil action suite demanding immediate repair of the sound barrier. Harold Fumbelstriker, CEO of MegaCorp USA, said this new Lintel system might be just enough for most e-businesses. Jack Blewitt, CEO of IT Scientist America, says its too early to gauge Ustranium's impact on Linux in the enterprise" L.A.- S.F. Times, February 29, 2008

Conclusion
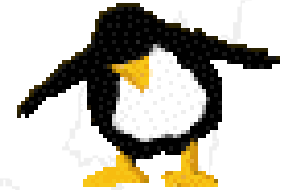
"What a strange game, when the only winning move is not to play!"