



OPENSOLARIS.. AND BEYOND

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Hello world

- Linux user, developer, and advocate since 1993
- Founder of Debian (1993)
- Cofounder of Progeny (1999-2005)
- CTO of Linux Foundation (née Free Standards Group/OSDL) (2005-2007)
- Joined Sun in March 2007
 - > Chief OS Strategist (March 2007-February 2008)
 - Launched Project Indiana (OpenSolaris distro)
 - > VP Developer and Community Marketing (February 2008-)

**The question I was asked 1,000 times
last year:**

What's a Linux guy doing at Sun?

Key observation

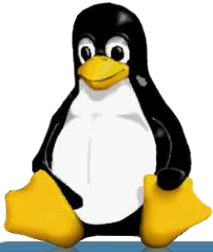
When people say they want Linux...

they don't actually mean they want Linux.

Key observation

What they want is the Linux
userland (read: open source)
+ business model
= *distro*

“Linux”... and Solaris



Mozilla Firefox, Mozilla Thunderbird, OpenOffice.org, ...

GNOME

X Window System

GNU Utilities

UNIX Utilities

POSIX + Extensions

System Libraries

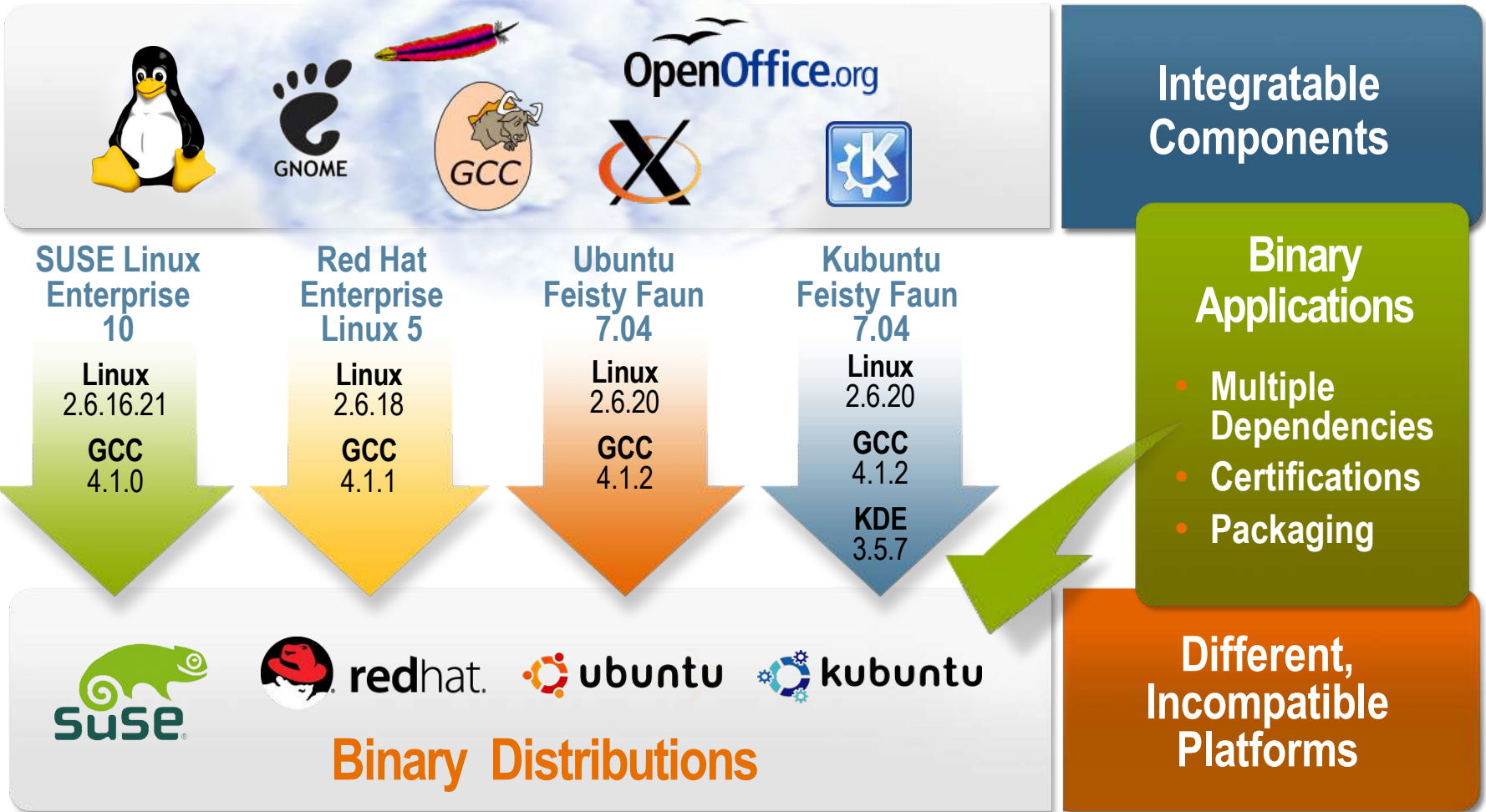
POSIX

Linux Kernel

Solaris Kernel

Hardware

The Linux Distribution Model



The Monolith and The Cloud

Integrated Operating System
with Binary Compatibility



Multiple Configurable Platforms
with Expanding Ecosystem



Best of Both Worlds



Binary Compatible Core Platform with Expanding Ecosystem

OpenSolaris

(Project Indiana)

- Solaris innovation with “distribution” model
 - > Core operating system + package repositories delivering Sun and non-Sun innovation
- Closing the “familiarity gap”
 - > Easier to acquire, easier to install, GNU userland, package management system, ...
- Focus on unique Solaris capabilities
 - > Upgrade rollback via ZFS snapshots, AMP stack with integrated DTrace probes, binary compatibility, ...
- **Available May 2008, Developer Preview 2 available now (<http://www.opensolaris.org>)**

Easy to Acquire

Redistributable CD

Solaris 10



6 CDs



Sun Download Center

OpenSolaris



Single CD



opensolaris.org

Mirror Sites

Sun Download Center



Available Everywhere

Easy to Install

```
File System and Disk Layout

The summary below is your current file system and disk layout, based on the
information you've supplied.

NOTE: If you choose to customize, you should understand file systems, their
intended purpose on the disk, and how changing them may affect the operation
of the system.
```

File sys/Mnt point	Disk/Slice	Size
/	c0d0s0	5096 MB
swap	c0d0s1	596 MB
overlap	c0d0s2	16355 MB
/export/home	c0d0s7	10636 MB

```

F2_Continue  F3_Go Back  F4_Customize  F5_Exit  F6_Help

```



- Simplified install and upgrade
- Localized graphical installer
- Automates basic system configuration

Easy to Maintain Image Packaging System

Upgradable
Frozen
Incorporated
eXcluded

```
Terminal
File Edit View Terminal Tabs Help
$ pkg refresh
$ pkg status -a | grep coreutils
pkg:/application/gnu-coreutils@6.7-0.71 uninstalled ----
$ pkg install gnu-coreutils
$ pkg status gnu-coreutils
FMRI                                STATE  UFIX
pkg:/application/gnu-coreutils@6.7-0.71 installed ----
$ ls /usr/gnu/bin
basename      ...
```

```
Terminal
File Edit View Terminal Tabs Help
$ pkg refresh
$ pkg status -a gnu-coreutils
FMRI                                STATE  UFIX
pkg:/application/gnu-coreutils@6.7-0.71 installed U---
$ pkg install gnu-coreutils
$ pkg status gnu-coreutils
FMRI                                STATE  UFIX
pkg:/application/gnu-coreutils@6.7-0.72 installed ----
```

- Easy to administer
- Easy to package for the developer
- More frequent fixes
- Upgrade and rollback with ZFS snapshots

Two-Tier Release Model

One Solaris Platform, Two Delivery Mechanisms



- Enterprise-class
- Unmatched level of support
- Long release cycle (3 – 5 years, with frequent updates)

opensolaris™

- Web economy
- Latest Solaris innovations
- Short release cycle (every 6 months)

So... What's next?

“[Open source is] the most significant all-encompassing and long-term trend that the software industry has seen since the early 1980s.”

IDC Group Report
August 2006

Why open source?

- It's not actually about source
- It's more about
 - > Choice
 - > Flexibility
 - > Ecosystem
 - > “Innovation happens everywhere”
 - > Reaching the developer community
- ... and it's part of a much larger trend

The Network Economy

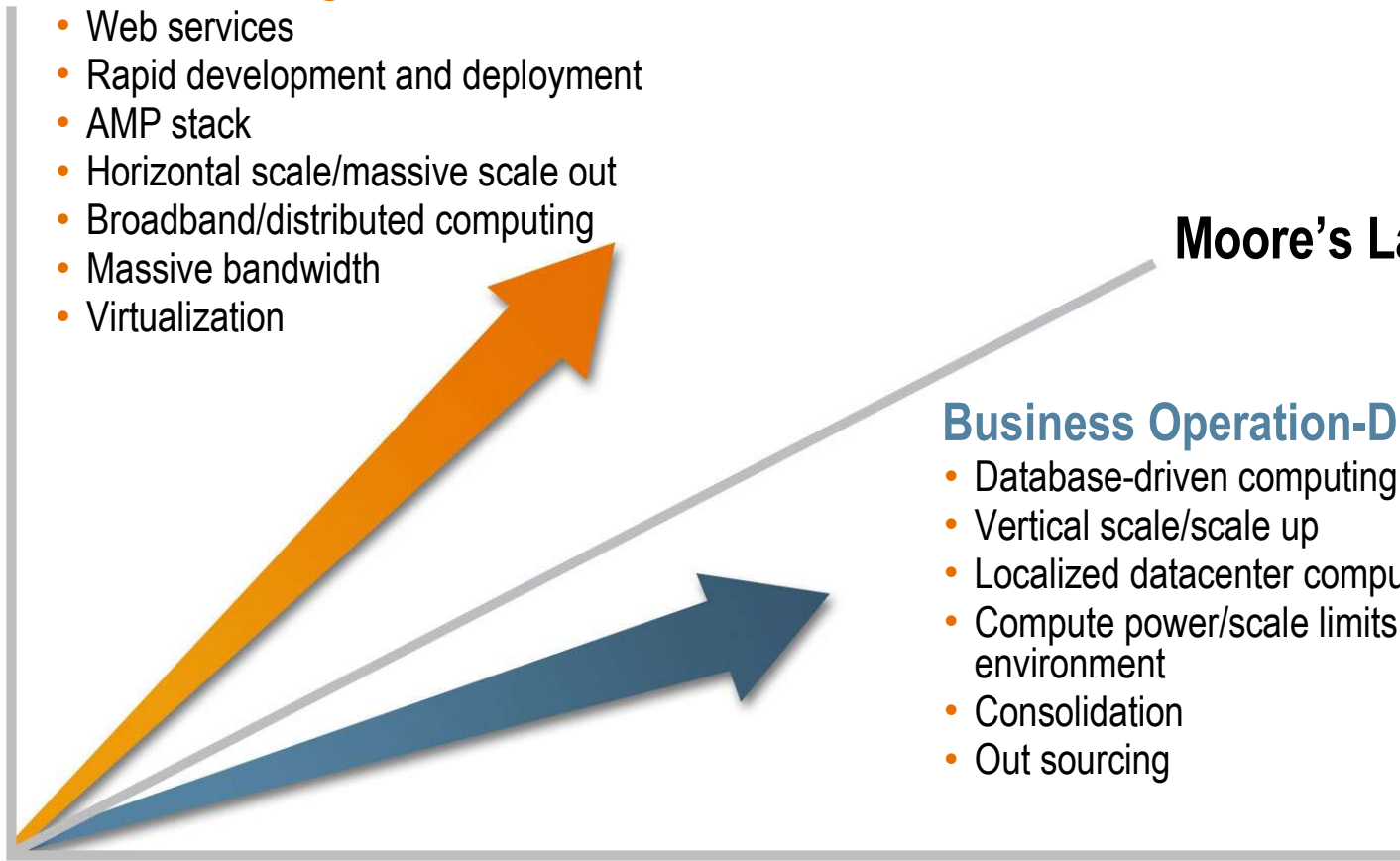
Network Usage Driven IT

- Web services
- Rapid development and deployment
- AMP stack
- Horizontal scale/massive scale out
- Broadband/distributed computing
- Massive bandwidth
- Virtualization

Moore's Law

Business Operation-Driven IT

- Database-driven computing
- Vertical scale/scale up
- Localized datacenter computing
- Compute power/scale limits environment
- Consolidation
- Out sourcing



The New Software Market

Acquisition

Deployment

c.1970-1980
Indivisible
From Hardware



c.1980-2005
Sold Unbundled



c.2005-
Pay at the
Point of Value



Bottom-Up Deployment

People Deploy What's Accessible to Them

Desktop



Google™



MySQL™



Perl

Datacenter



Sun in the Systems Market

A Few Years Ago...

Operating
System



The Solaris logo features a stylized orange sun with rays above the word "solaris" in a blue, lowercase, sans-serif font.

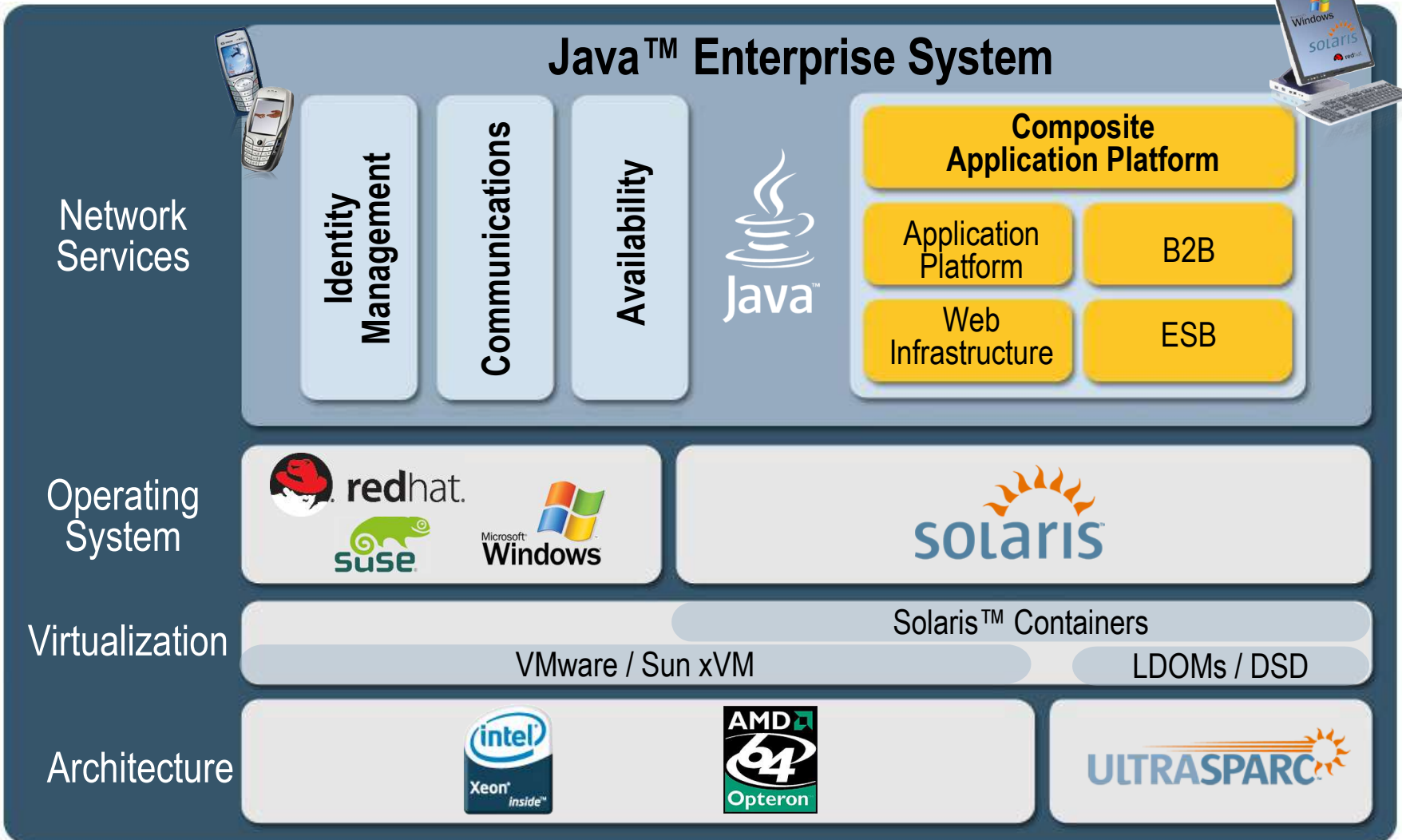
Architecture



The UltraSPARC logo features a stylized orange sun with rays above the word "ULTRASPARC" in a blue, uppercase, sans-serif font.

Sun in the Systems Market: 2008

Platform Choice, OS Choice, Infrastructure Choice



Business model

New Consumers,
Communities, Content,
Devices, and Services.

On the
Network...

Drives
Infrastructure
Demand.



Observations

- Open source business model
- Developer platforms of choice moving up the stack
- Traditional Sun platforms are increasingly invisible infrastructure
- New platforms remove barriers to entry and hide complexity so developers can focus on getting to market quickly

Opportunities

- No one “owns” the web
 - > Reminds me of open source in 1990s...
- Most of the hot new platforms are silos
 - > Haven't we seen this movie before?
- Where do down the stack technologies fit (e.g., do operating systems still matter?)



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