



# opensolaris

Open source for the enterprise

Marco Colombo



## What is Open Source?

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Distribute binaries + source code

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Open Source and/or Free software license

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Freely: modifiable, redistributable, forkable

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Non-discriminatory

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Consensus driven projects

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Meritocracy

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Peer review and public discussion

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OK to make money - but not for access to code

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## Why Open Source?

### Good For Customers

Community drives choice,  
competition, value

Accelerates unexpected,  
disruptive innovation

### Good For Sun & Partners

Innovation happens  
everywhere

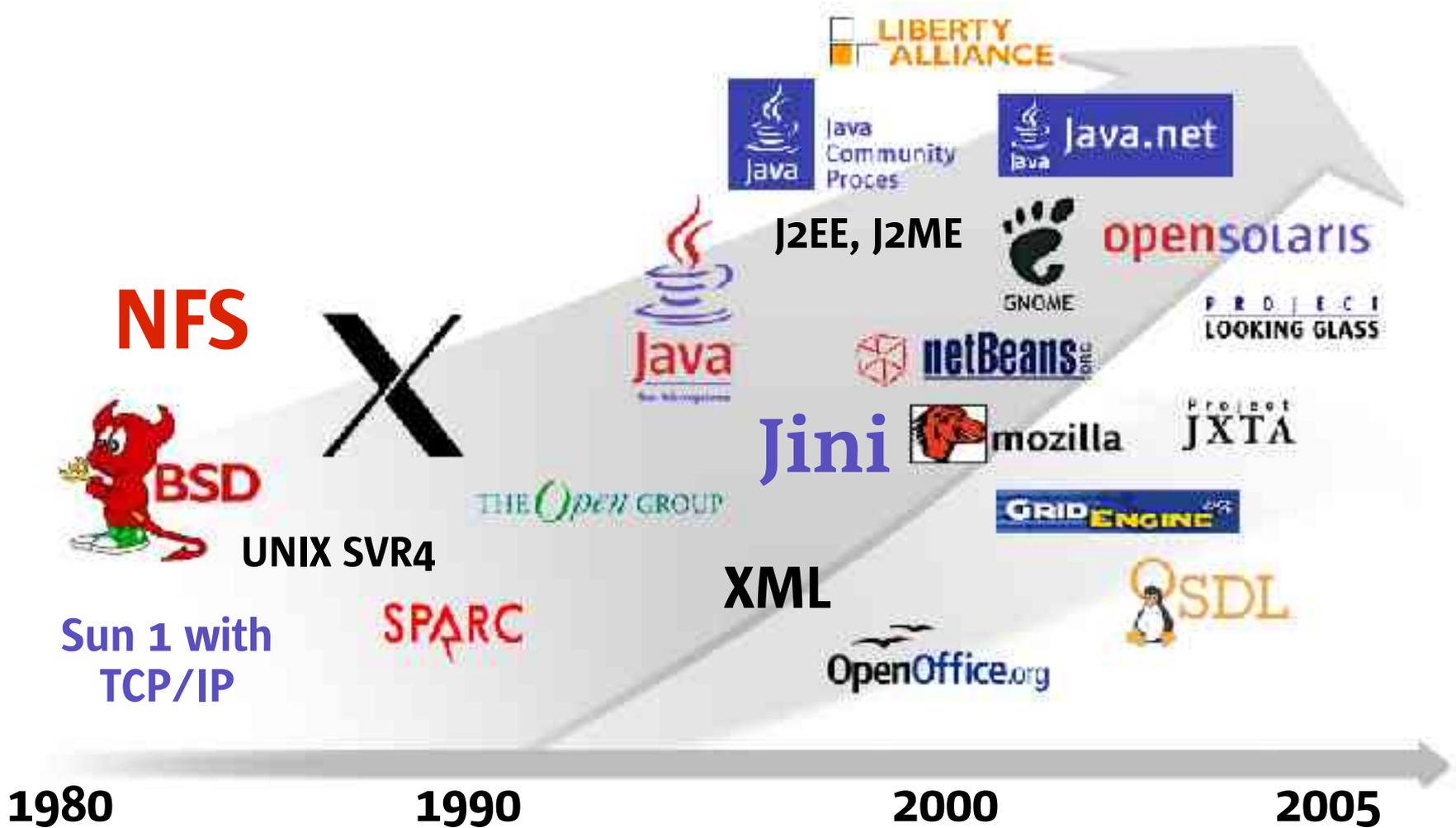
Creates new opportunities by  
growing the market



# Community Participation



# Sun: A History of Community



# Benefit Of Open Communities

**Shared vision, goals**  
**Agreed sharing**  
**(license)**  
**Agreed relationships**  
**(governance)**  
**Committed members**



**It's About Both People and Technologies**

## Expect the Unexpected

**Bright, well-known people  
contribute code regularly**

**Community finds new uses**  
Jini™ network technology and Orbitz  
JXTA™ and National Retail Federation  
OpenOffice.org localized to 45  
languages, ported to six platforms



# Sun's Open Source Initiatives



850+ Members, 250+ JSRs  
3 Complete J2EE/J2SE versions  
2 Complete J2ME versions



Java.net—monthly snapshots  
New JRL license, open dialog



First Java IDE to support  
J2SE 5.0 language features



Over 1,300 projects  
18 communities  
Over 110 user groups



Over 150 members  
400M+ Liberty-enabled  
identities and clients by 2006



7.5M Lines of code  
Largest contribution to date  
Translated into 45 languages

Now  open source...

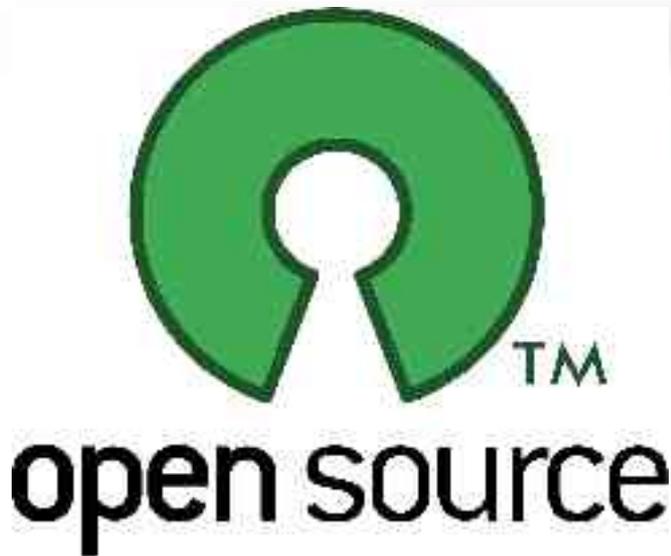
# Why Open Source Solaris™ OS?



**We listened**  
**Innovation happens everywhere**  
**Expand developer mindshare**  
**Open new markets**

**More Developers, Better Applications,  
Community Contributions, Innovative New Uses  
All Will Make Solaris OS Better — Which Is Good for Business**

# opensolaris™



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Solaris Source Code

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OSI Approved License (CDDL)

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Patent Commons

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Buildable Source Q2CY2005

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[www.opensolaris.org](http://www.opensolaris.org)

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# Overview

**OpenSolaris: open source Solaris**

**OSI approved open source license: CDDL**

**Enables royalty-free use, modification, derived works**

**Preview community website at: [www.opensolaris.org](http://www.opensolaris.org)**

**Beyond open source to *open development***

**Engage with non-Sun developers**

**Can contribute code, bug fixes, documentation, etc.**

**Sun and non-Sun engineers collaborate as peers**

**Seek to build a *community* around Solaris**

**Developers and users**

**Ongoing pilot program with 140 external participants**

## Benefits of OpenSolaris

### **Developers, students and educators: Empowered**

**Closer collaboration with Solaris kernel engineers**

**Can better affect future direction of Solaris**

**Learn from and research using state of art OS**

### **OEMs and partners: Enabled**

**Access to cutting edge development platform**

**Streamlined customization process**

**Quick time to market with customized offering**

### **Customers: More value**

**Benefit from broader innovation base**

**Sun continues to invest in Solaris: branded and supported**

## How Will This Change Solaris?

**Commercial Solaris product still available with testing, support, ISV/IHV certification, etc.**

**Solaris assembled from OpenSolaris source code**

**OpenSolaris community supported, no ISV/IHV certs**

**Solaris offers same level of quality, compatibility, security as before (or better)**

**Community provided features, drivers, bug fixes, etc.**

**Improves both OpenSolaris and Solaris**

**Website is new, additional resource**

**Information about technology, direct engr. discussions, ...**

opensolaris : SOLARIS = OpenOffice.org : StarOffice

# Community



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140 Pilot Members

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5 Person Advisory Board

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3 External Members

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[opensolaris.org](http://opensolaris.org)

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opensolaris

ob6U20r9L12



open source

## Common Development and Distribution License

**CDDL** *[cuddle]*

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Based on MPL

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“CopyLeft”

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Royalty Free

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Compatible

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Reusable

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Choice of Law, Venue

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Patent Grant

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Patent Protection

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## Open Source License

# Common Development and Distribution License (CDDL)

## CDDL: OSI approved open source license

Reusable; Flexible; File based, Explicit patent grants

**Enables and encourages**

**Growth of Solaris open development community**

**Contributions from community**

**Sharing of source modifications**

**Creation of derived works**

**Allows mixing OpenSolaris code & proprietary code**

Subset: derived works from individual OpenSolaris components

**End user customizations of OpenSolaris**

**Operating system research and use in academia**



## What does CDDL let people do?

Make, distribute, even sell products that are based on the OpenSolaris community code

Build something new using some/all of the code from the OpenSolaris community combined with their own code that they contribute back to the community under CDDL

Build something new using some of the code from the OpenSolaris community combined with code under another compatible license (or even a proprietary license) as long as they comply with CDDL terms & conditions for OpenSolaris code

# License Comparison

Three OSI Approved Licenses	CDDL (Common Development and Distribution License)	GPL (GNU General Public License)	MPL (Mozilla Public License)
Patent Protection	Most	None	Some
License includes an express patent grant	Yes	No	Yes
License taints larger work	No	Yes	No
Can distribute binaries under your own license	Yes	No	Yes
License compatible with other copyleft licenses	Yes	No	Yes
License widely adopted	Not yet	Very	No
Modifications must be published	Yes	Yes	Yes
Can be integrated with proprietary software	Yes	No	Yes

## Solaris, OpenSolaris Trademarks

**Sun owns trademarks for both...**

**Ingredient brand in the works**

**“Powered by OpenSolaris”**

**Trademark policy being drafted**

**May create “fan” buttons to spread the  
word**

## Community Website

Forum for “conversation”

[www.opensolaris.org](http://www.opensolaris.org)

Preview website available now

At launch (Q2 2005), fully populated with:

Source, tools, docs, mailing lists, user groups, blogs,  
wikis, FAQs, papers, examples

Binary OpenSolaris distribution

Useful, compelling content

Includes community-created content

# Source Content

**Now:** DTrace code available under CDDL

**At launch:** Q2 2005

**Kernel and core commands and libraries delivered to**

**OS/Networking consolidation**

**Except for legal encumbrances**

**Includes all Solaris 10 innovations**

**DTrace, Predictive Self-Healing, Containers, ZFS, etc.**

**Post-launch:**

**Release source for all components of Solaris**

**Except those with legal encumbrances (e.g. 3<sup>rd</sup> party drivers)**

# Solaris 10

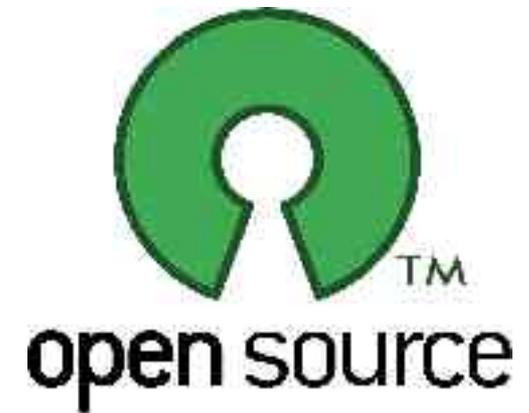
The Best OS on  
Planet Earth



  
SOLARIS™



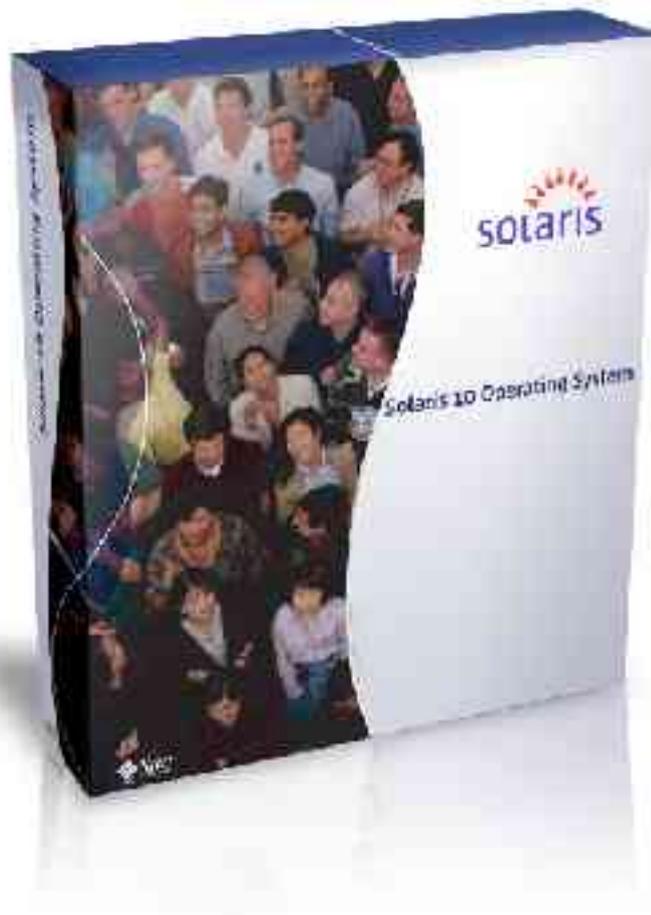
# Free





## Thousands of ISVs and Partners

## Solaris 10



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Dynamic Tracing (DTrace)

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Solaris Containers

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Predictive Self-Healing  
ZFS

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Secure Execution

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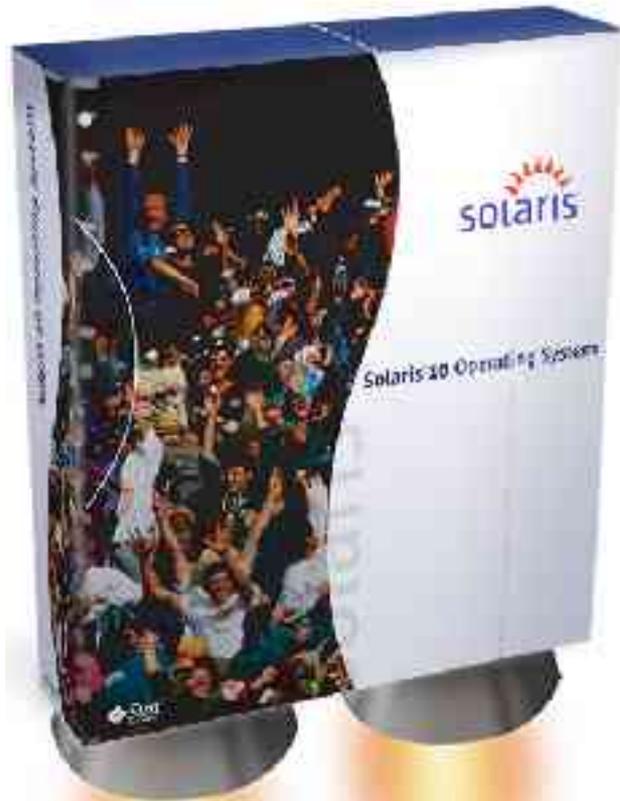
185+ Open Source Apps

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Compatibility  
Guarantee

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# Extreme Performance



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Improvements everywhere

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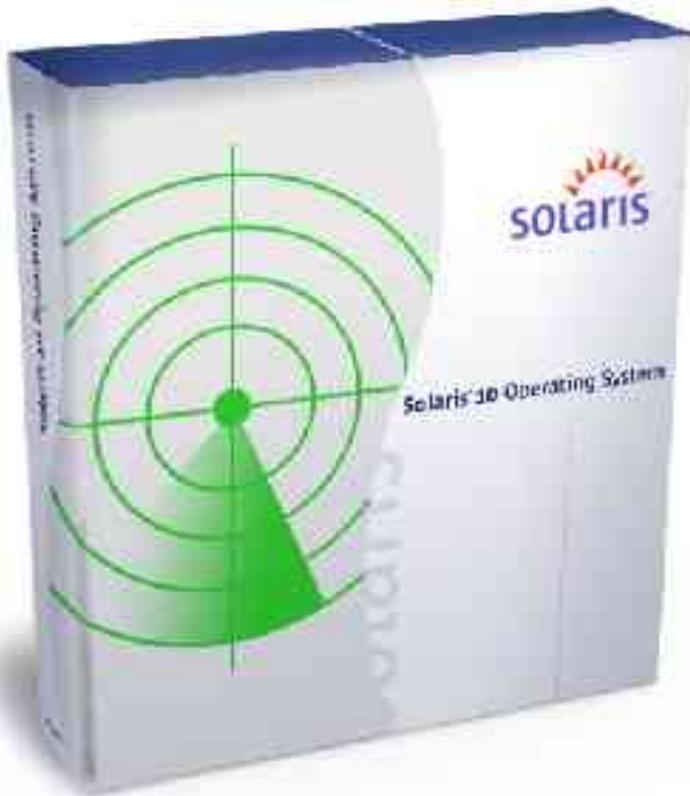
Massive performance increases  
over Solaris 8 & 9

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Way faster than anything else  
100% compatible, Guaranteed

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# Extreme Observability



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DTrace is designed for use on production systems

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Problems solved in minutes not days

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Instrument every line in every application

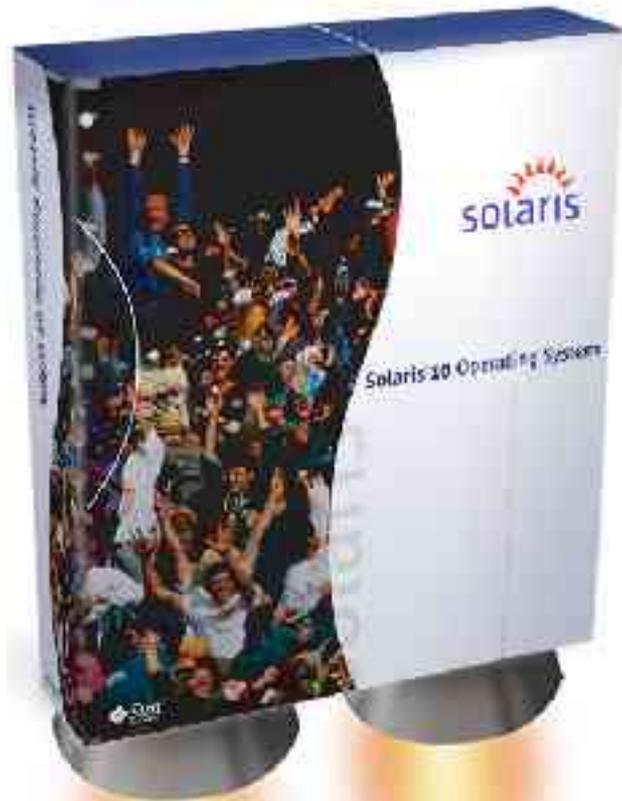
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Massive performance opportunities

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No code changes required

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# New World Record

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SPECOMP2001

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Sun Java Workstation  
W2100Z

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Solaris 10

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Beats SuSE by 40%

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## Solaris Containers



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Limitless partitioning –  
One license

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1,000's of applications on  
one system

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Ultimate Linux/Unix  
consolidation

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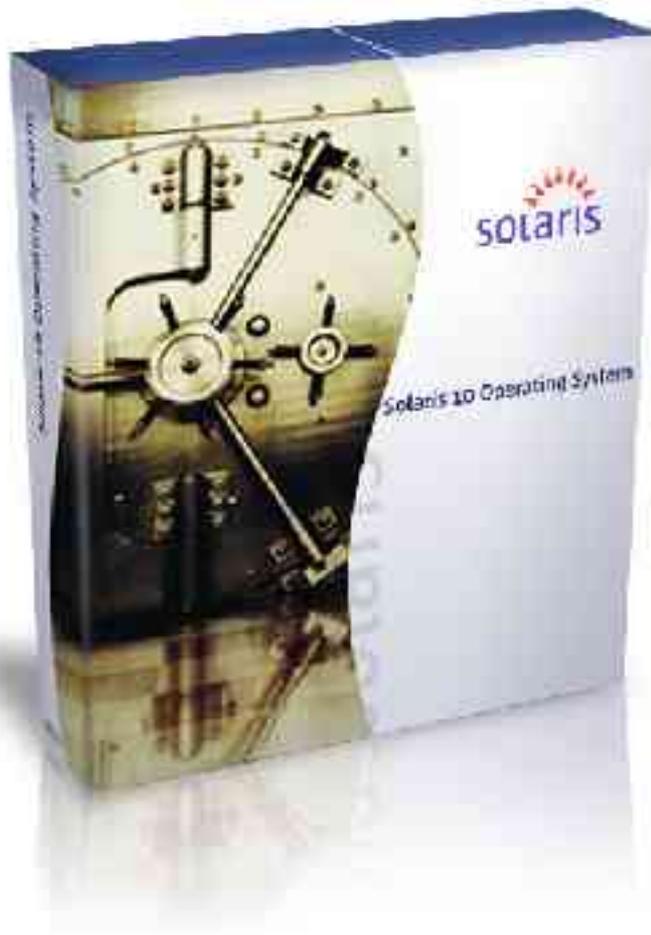
Instant restart

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# Solaris/Linux Consolidation Coming Soon



## Solaris 10 Security



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Digital Certificates Everywhere

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Secure Execution

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User Rights Management

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Process Rights Management

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Cryptographic Infrastructure

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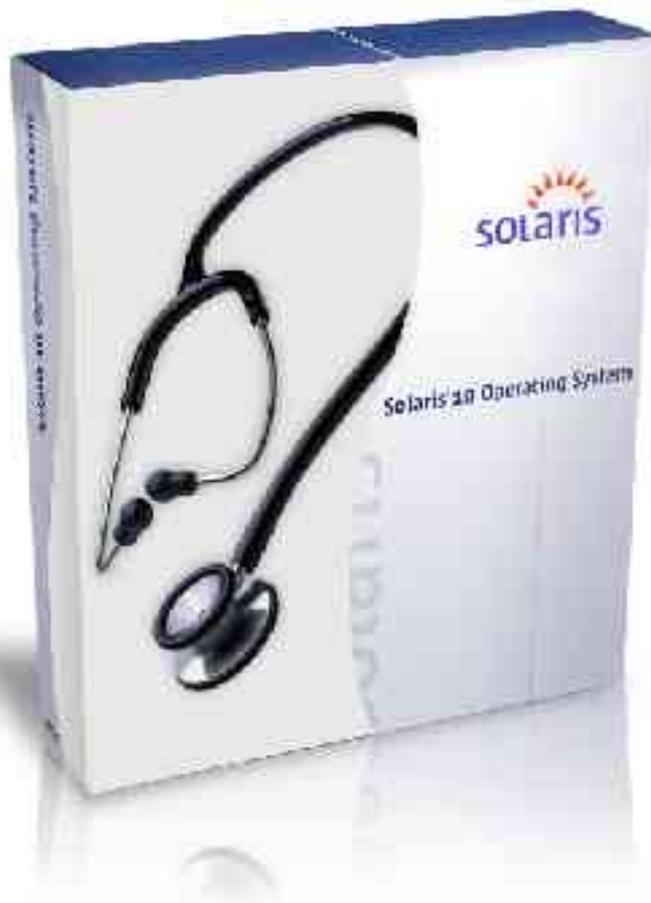
IPFilter

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Solaris Trusted Extensions

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## Predictive Self-Healing



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Stops problems before  
they happen

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Self-diagnosis in  
milliseconds

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Fine-grained recovery

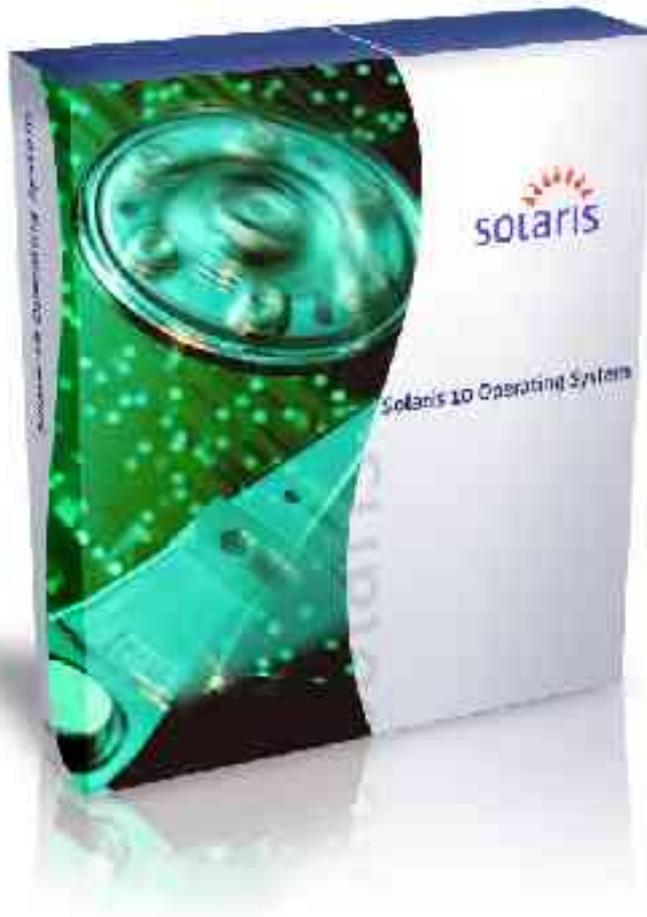
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Zero source code  
changes required

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## Solaris ZFS

Coming Soon



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19 9's reliability

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Self-healing data

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Platter speed  
performance

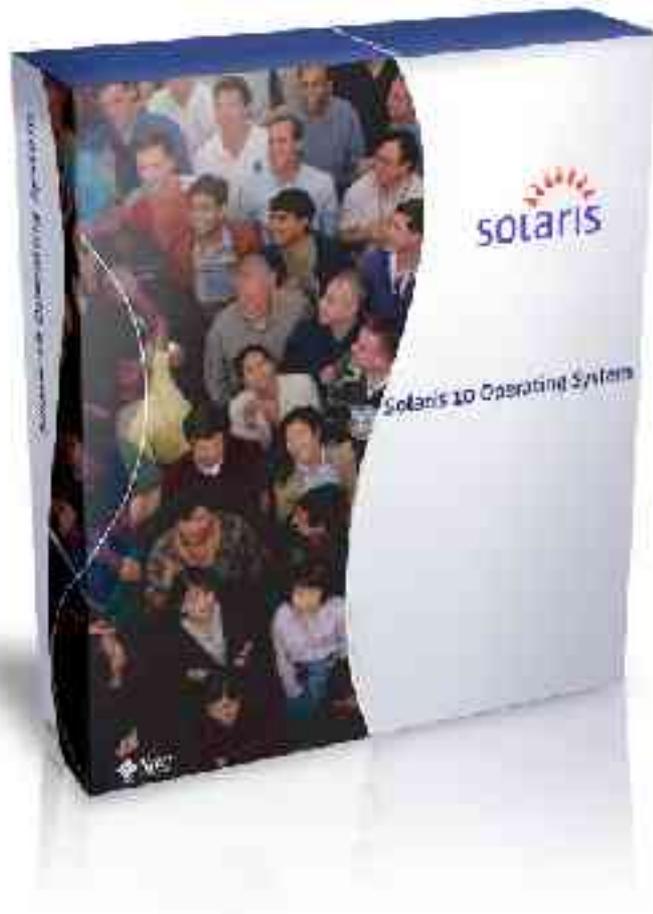
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16 *billion billion* times  
larger than today

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For the “65<sup>th</sup> bit”

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## Support For x86

x86 economics

Enterprise features

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Seamless 32 AND 64 bit

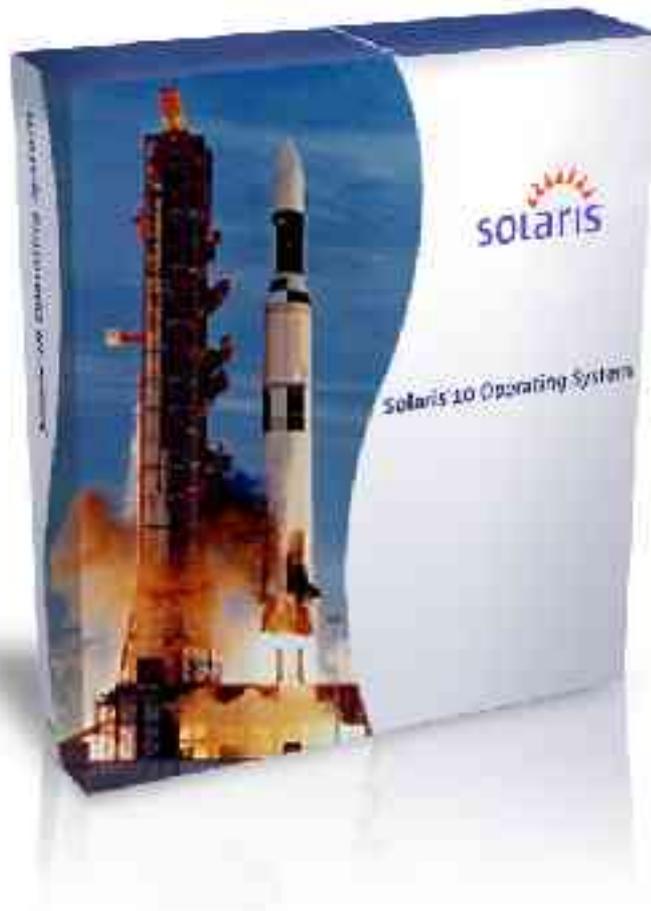
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Sun or non-Sun HW

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## Leadership On x64



All Sun x86 systems are x64  
Most complete line of x64  
systems  
X64 market leader

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# Solaris Investment Protection

**Guaranteed Binary  
Compatibility  
for 7 Years**

**Solaris 2.6 to Solaris 10**

# Solaris Investment Protection

**Source Compatibility**

**SPARC to x86/AMD64**  
**x86/AMD64 to SPARC**

# Summary **opensolaris**

- OSI-approved open source license (CDDL)**
  - Patent grants to 1,600+ patents associated with code**
  - All of Solaris OS including key innovations**
  - Dynamic Tracing (DTrace), ZFS, Containers, security, etc.**
  - Sun (supported) Solaris OS to be based on OpenSolaris™**
  - Code integrated after transparent reviews**
  - Advisory board with five members, three external to Sun**
  - 140 external pilot members as of 3/27/05**
  - Open community with buildable source: Q2 CY 2005**
- [www.opensolaris.org](http://www.opensolaris.org)



Welcome to the  
Age of Participation

# Open Source Software Supported in Solaris 10

## Network Servers & Clients

Apache  
Apache2  
bind  
Mozilla  
ncftp  
ppp  
Samba  
sendmail  
SER (SIP Proxy Server)  
Tomcat  
wget  
wu-ftpd  
xntpd  
Zebra

## Commands

a2ps  
bzip2  
footmatic print ppds  
ghostscript  
ghostscript fonts  
Gimp print drivers  
GNU patch utility  
GNU grep  
ImageMagick  
IPMItool  
Open Printing API  
rpm2cpio.pl  
System Management Agent

MySQL  
patch  
texinfo  
traceroute  
Webmin  
gzip  
GNU tar  
less  
texi2html  
mkisofs

## Libraries

Glib  
GTK+  
JPEG  
Libexpat  
Libusb  
Libxslt  
PNG  
Tcl/Tk  
TIFF  
XML2  
XPM  
zlib

## Compilers & Tools

Binutils gcc  
Bison gm4  
Flex gmake

## Scripting Languages

Perl  
Python

## Security Tools

Secure Shell  
tcp\_wrappers

## Shells

bash  
tcsh  
zsh

Fully supported: Sun provides support in the same way as for Sun owned software.

Managed: Sun provides existing patches and escalates new bugs to the developer community

# Open Source Software Bundled with Solaris 10

	<b>Applications / Networking</b>	<b>Applications / Utilities</b>	<b>Development / Languages</b>	<b>Development / Libraries</b>
<b>Applications / Accessibility</b>	brltty-3.3.1	afio-2.4.6	bison-1.35	aalib-1.2
	emacspeak-18.0	amanda-2.4.4	gcc-2.95.3	berkley-db 1.85
	emacspeak-s-1.9.1	cdrtools-2.01	gcc-3.4.2	berkley-db 4.2.52NC
	freetts-1.1.1	cupsddk 1.0	libtool 1.5.2	curl-7.10.3
	screenbrltty-4.02	diffutils-2.8.1	m4-1.4 (GNU)	fttk-1.1.3
	unwindows-1.1.3	enscript-1.6.1	MySQL python API 0.9.2	fnlib-0.5
	w3-4.0.47	expect 5.39	php-4.3.2	GD Graphics library 2.0.15
	yasr-0.6.4	file-4.10	ruby-1.6.4	guile-1.3.4
		fileutils-4.1	samp-1.0	imlib-1.9.15
<b>Applications / Editors</b>	Open LDAP 2.2.17	findutils-4.1.20	tcX-8.2.0	libxpt-1.95.7
	Open SLP 1.0.11	Foomatic filters 3.0.2		libmpeg-1.3.1
	pine-4.61	Foomatic-ppds 3.0.1	<b>Development / Tools</b>	libpcap-0.8.3
	procmail-3.22	gcal-3.01	autoconf 2.59	libsane 1.0.14
	rsync 2.6.3pre1	gettext-0.10.35	automake 1.8.3	linungif-4.1.0
	slm-0.9.6.2	gimp-print-4.2.6	binutils-2.15	ncurses-5.2
	snort-2.0.0	gkrellm 2.1.19	cvs 1.11.17	Ogglib-1.0
	tcpdump-3.8.3	gnuplot 3.7.3	ddd 3.3.8	Perl regex lib 4.5
		ispell-3.2.06	gdb 6.2.1	qt-3.1.1
<b>Desktop / Environment</b>	<b>Applications / Publishing</b>	lxrun 0.9.6.1	global-4.8	readline-4.2
	espgs-7.07.1	mpack-1.5	make-3.80 (GNU)	slang-1.4.0
	graphviz 1.10	mpage-2.5.1		SDL-1.2.5
	groff-1.16.1			Xaw3d-1.5
	xpdf 3.0			
		<b>X / Applications</b>	<b>X / Window Managers</b>	
	<b>System / Daemons</b>	asclock-1.0	afterstep-1.8.8	
	imap2002d (UW)	ethereal-0.9.11	fvwm2-2.4.3	
		xcpustate-2.5		
		xdelta 1.1.3		

## **Interactions With Community**

### **Open source projects**

**Collaboration between Sun & non-Sun developers**

**Also Sun-only, non-Sun-only projects**

**Projects integrated to open source OpenSolaris code**

**Full design and code reviews**

**Transparent processes, open reviews**

**Include non-Sun reviewers as peers**



[marco.colombo@sun.com](mailto:marco.colombo@sun.com)

