

# The secret diary of an OpenSolaris Hacker

Aged 13 and  $\frac{3}{4}$ .

**DAY 1.**

## How do I download it?

- When *opensolaris.org* was first created, it was **only** a website to host source code
  - > Poor binary download experience
  - > You have to know what you want
  - > Then you have to know where to get it

## <free starter kit>

### Get the OpenSolaris Starter Kit!

It's free! Inside you'll find tutorials, documentation, and two DVDs filled with useful software. Get started using OpenSolaris technology — right on your laptop or home PC.

This kit will help you learn about the OpenSolaris source code and the community. On the DVDs, you'll find:

- **Solaris Express** — Preview future features of Sun's Solaris Operating System. Also inside: **ZFS**, **DTrace**, **Containers**, and hundreds of other unique features.
- **Live CDs** — These bootable images allow you to check out community-built distributions of OpenSolaris, each with unique features:
  - **Nexenta OS**
  - **BeleniX**
  - **SchilliX**
- **Sun Studio compilers** — Get advanced features for developing applications on Sun Solaris platforms.
- **OpenSolaris source code.**
- **System Requirements** — x86/x64 based system.

There are **no shipping and handling fees** associated with ordering the OpenSolaris Starter Kit, so request one today!



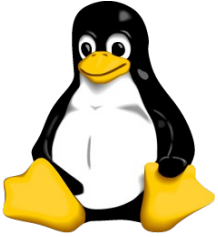
[Get Your Free Kit »](#)

## How do I install it?

- Installation experience has traditionally been terrible
- Project **Caiman** will change this
  - > Very much in early stages of development
  - > Some limitations on functionality, and hardware platforms

# Why is it so different to Linux?

- One of Solaris' core developer ideals is **binary compatibility**
  - > Development is slow, methodical, and very process driven
  - > Solaris is POSIX compliant
  - > However, much of the stack is the same...and better!



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

GNOME

X Window System

GNU utilities

UNIX utilities

POSIX+ extensions

System libraries

POSIX

Linux kernel

Solaris kernel

Hardware

# Where is all the software?

- Solaris has traditionally been poor for additional software availability
  - > [www.blastwave.org](http://www.blastwave.org)
  - > [www.sunfreeware.com](http://www.sunfreeware.com)
  - > [pkgbuild.sourceforge.net/spec-files-extra/](http://pkgbuild.sourceforge.net/spec-files-extra/)

## Where can I get help?

- When you have a problem, there's some easy steps to take
  - > Try Google first – there are some excellent resources available!
  - > All the current *opensolaris.org* forums are **developer** only, so don't expect an answer – be thankful if you get one

**DAY 2.**

# What is this community thing?

- It seems pretty confusing at first
  - > Reading the Constitution is **not** a pre-requisite for understanding what is going on
  - > In reality, it's simple – we have communities and projects...

Approachability

UFS

Networking

**DTrace**

Sys Admin

LDoms

Appliances

MDB

**Advocacy**

PowerPC

Databases

X Windows

I18n & I10n

BrandZ

**ON**

**ARC**

**OGB**

Tools

**ZFS**

Observability

Academic & Research

SMF

Device Drivers

Storage

HPC

Xen

NFS

**Installation & Packaging**

**Laptop**

Security

Performance

Printing

Testing

Zones

FMA

**Desktop**

Documentation

Mozilla DTrace Visual Panels Tesla  
Events Registry libMicro **SCM Migration** iSNS Muskoka  
**ksh93** Cluster **Emancipation** Kernel Sockets StarterKit  
LiveMedia OpenGrok Companion OSS Kerberos **Indiana**  
IPoIB Device Detection Tool Brussels IPS Nemo GSoC  
**NWAM** **SFW** Enhanced SMF Profiles Quagga Honeycomb  
**Presto** COMSTAR CIFS FGAP FUSE Xfce  
Mentoring ADSL Modem Duckwater FGAP FUSE Xfce  
**Intel** KDE lofiadm **User Groups** **Crossbow**  
Device Naming Bluetooth Fingerprint Authentication SVR4  
FOX Chime **JDS** DHCPv6 **Caiman** Input Method  
**Suspend & Resume** USB Webcams SAM/QFS **Website**  
Cryptographic Framework Clearview QEMU Content

**OMG!**  
(lol)

# How do I even start?

- Find something interesting to you, or where you may have skills to contribute
  - > Documentation
  - > Artwork
  - > Advocacy
  - > **Hacking**

## But the idea is simple, right?

- Like most open source projects, the people who do the most work, get to decide the direction
  - > All the decision making happens within Community Groups and Projects

## And that means?

- There are a few roles of involvement and milestones to reach –
  - > Participants (you are this already!)
  - > Contributors
  - > Core Contributors
  - > Emeritus Contributors

# How can I get involved?

- Learn about the technology
- Join various discussion lists
- Affiliate yourself!
- Get to know the people behind the scenes  
– read their blogs!
- Be helpful and thankful!
- Keep thick skinned

**DAY 3.**

# Are you ready to start hacking?

- No **single** development process
- Each project or community can run things separately to the next
- Each community has its own measure of code quality but most of them try to avoid QDS

# What is QDS?

- Quality Death Spiral
  - > People hear the **gate** is broken
  - > Decide not to risk a bring-over
  - > Fewer people run the latest stuff
  - > Less real-life testing
  - > New bugs are not found
  - > Quality drops further

# What is the gate?

- *opensolaris.org* has 2 source code management tools
  - > Mercurial
  - > SVN
- Some projects have not yet migrated to the new tools

# Where is the gate?

- The project website will contain information of where the source code is
  - > `hg clone ssh://anon@hg.opensolaris.org/hg/pkg/gate`
- Start to familiarize yourself with the code, by fixing simple **bugs**

# How do I build the gate?

- Very much dependant on which gate you are building – some are much easier than others!
- To build ON, for example, a thorough reading of the developer reference is recommended
  - > [www.opensolaris.org/os/community/on/devref\\_toc](http://www.opensolaris.org/os/community/on/devref_toc)
- Find an expert!

## Where are the bugs?

- *opensolaris.org* has traditionally used *bugs.opensolaris.org*, an web interface to Sun's internal bug tracking facility
  - > You can query bugs (oss-bite-size)
  - > You can log new bugs
  - > You can't update bugs
- *defect.opensolaris.org* is an increasingly popular Bugzilla instance

## How do I create a patch?

- With the help of your SCM, you can generate a more comprehensive patch, called a **webrev**
  - > Builds a set of HTML files suitable for performing code review
  - > Part of the SUNWonbld package (`usr/src/tools/scripts/webrev.sh`)
- But a simple unified diff will also do ;)

## Where can I upload my patch?

- *cr.opensolaris.org* is a code review hosting site
- Register on *opensolaris.org*
- Upload your personal ssh public keys
- Upload your patch
  - > `scp -r webrev gman@cr.opensolaris.org:ips_fix`

# How does my patch get reviewed?

- Within **ON** all patches go through a defined process before getting put-back to make sure quality has been met
- There are current limitations on how much a non-Sun developer can see of this process
  - > Soon, there won't be any!

## So, what's the first step?

- First of all, you need to request a **sponsor** for your fix
  - > [request-sponsor@opensolaris.org](mailto:request-sponsor@opensolaris.org)
  - > That person, a Sun employee, is responsible for helping you get the fix put-back
- Ensure there is a bug ID for this fix

## So, what's the second step?

- The sponsor will log an internal **RTI**
  - > RTI = Request to Integrate
  - > This essentially is a web interface to submit
    - Bug ID and details
    - Risks involved
    - Who has reviewed the code
    - Test cases

## So, what's the third step?

- The sponsor is responsible for reviewing the code and finding a **CRT Advocate**
  - > CRT = Change Review Team
  - > They assess the technical risk and merit of the proposed changes
- The sponsor is responsible for an **ARC** review
  - > [www.opensolaris.org/os/community/arc](http://www.opensolaris.org/os/community/arc)

## But where does ARC fit in?

- ARC stands for **Architectural Review committee**
  - > Have been the stewards for maintaining the interface guarantees on Solaris
  - > Many different ARCs – LSARC, PSARC, FWARC, ...
  - > A source of a **lot** of good technical information

## So, what's the fourth step?

- Depending on the fix in question, an ARC case may have to be logged
  - > Entirely dependant on what interfaces you are changing, and how they have previously classified
  - > Simple bug fixes usually don't have to go through this process

## So, what's the fifth step?

- Wait – unfortunately some of these processes can take some time
  - > Eventually though, the RTI will get approved
  - > The gatekeeper will open the gate, and the sponsor will put-back your fix

**DAY 4.**



"Mr. Osborne, may I be excused? My brain is full."

**DAY 5.**

## Where do I get help?

- There are many available options
  - > [opensolaris-help@opensolaris.org](mailto:opensolaris-help@opensolaris.org)
  - > [opensolaris-code@opensolaris.org](mailto:opensolaris-code@opensolaris.org)
  - > #opensolaris on [irc.freenode.net](http://irc.freenode.net)
  - > Go to your community/project

## What's next?

- As you contribute more over time, you will be recognized and trusted
  - > Congratulations, you've now become a **contributor**
  - > Keep going!

Time passes...

**DAY 105.**

# How do I start my own project?

- At some stage in the future you may wish to lead your own project
  - > All projects are endorsed by at least one community
  - > Propose a project and get the core contributors of that project to vote
    - Three '+1' votes are required

## What's next?

- As you contribute more over time, you will be recognized and trusted (once again)
  - > Congratulations, you've now become a **core contributor**
  - > Sit back and retire!

**I'm kidding...keep going!**

# How do I start my own community?

- You can also propose a new community
  - > Must have a well defined charter
  - > Must not overlap with an existing community group
  - > [ogb-discuss@opensolaris.org](mailto:ogb-discuss@opensolaris.org)
    - After 10 days, the OGB vote

**Are you having fun yet?**