Illumos

Hope and Light Springs Anew

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What's In A Name?

Illumos = Illum + OS = “Light + OS”

Light as in coming from the Sun...
OS as in Operating System
Not All of OpenSolaris is Open Source

- Critical components closed source
  - libc_i18n (needed for working C library)
  - NFS lock manager
  - Portions of crypto framework
  - Numerous critical drivers (e.g. mpt)
- Presents challenges to downstream dependents
  - Nexenta, Belenix, SchilliX, etc.
  - See “Darwin” and “MacOS X” for the worst case
What's Good

• The Technology!
  – ZFS, DTrace, Crossbow, Zones, etc.

• The People
  – World class engineers!
  – Great community of enthusiasts
  – Vibrant ecosystem

• The Code is Open
  – Well most of it, at least
Illumos – the Project

- Derivative (child) of OS/Net (aka ON)
  - Solaris/OpenSolaris kernel and foundation
  - Tracks ON closely
  - 100% ABI compatible with Solaris ON

- No closed code
  - Open source libc, kernel, and drivers!

- Repository for other “experimental” innovations
  - Can accept changes from contributors that might not be acceptable to upstream
Illumos – Focus

- Illumos is just ON
- Focused on “Core Foundation Blocks”
- May expand to host other affiliated projects
  - X11 components?
  - Desktop components?
  - C++ Runtime?
  - Distributions?
Illumos – the Community

• Stands independently from OpenSolaris
  – Can't be “shut down” or subverted by any corporate master
  – We “own” our own identity
  – Nexenta a major sponsor

• Community governed and run
  – Resources distributed
  – Meritocracy
  – “Just enough” governance
Illumos – the Cast

• Existing community members
  – Led by Garrett D'Amore
  – Cast of about a dozen developers right now
  – Many community leaders
  – Growing all the time
  – Anyone can join in!
  – Critical mass!
Illumos – Community Partners

- Nexenta
- Joyent
- GreenViolet
- BeleniX
- SchilliX
- berliOS
- everycity
The 800 Pound Gorilla

- Illumos is *not* a competitor to “Solaris”
- An open invitation has been extended to Oracle to participate as a peer
- Individual employees are welcomed to participate as well!
- We want a collaborative and cooperative relationship with Oracle and other corporate partners
- But we don't depend on it
What If the Tap is Turned Off?

- We don't think that will happen.
  - Many many business reason for source code to remain open.
  - Even if the “OpenSolaris” community were to be abandoned or shut down.
- We think we have critical mass to continue sustaining in that case
- Illumos would necessarily become a “fork”
- Illumos is the insurance the community needs
Major Project Goals

- Self hosting SunOS derivative
- Fully Open Source
- 100% ABI compatible with Solaris
- Legally usable by upstream
- No corporate dependencies
- Basis for other distributions
Administrative Council

- Temporarily a Benevolent Dictatorship
  - Garrett D'Amore, Chairman
- Initially appointed
  - Will select new members for itself
- Non-technical matters only
  - Resource management (servers, mailing lists, etc.)
  - To define code of conduct, etc.
  - May evolve into a full “Foundation Board” later
Developer Council

- Benevolent dictatorship for now
  - Garrett D'Amore is Tech Lead
- Initially members appointed
- Made up of developers with commit rights
- Meritocracy based
- Consensus driven
  - Tech Lead is final arbiter if consensus not possible
  - Process to replace Tech Lead TBD.
Rules for Integration

- Usual quality guidelines for ON
  - cstyle
  - lint
  - Validated/tested code
  - Code reviews

- License restrictions
  - BSD or MIT (caveats)
  - CDDL with signed SCA
  - Other possibilities under investigation
Packaging

• Illumos is not a distro.
  – There may be one at some point though
  – Binary ISO to be delivered with minimal bits needed to bootstrap a “real” distro

• Packaging “neutral”

• “IPS” manifests are “canonical” data
  – Illumos has tool to generate .deb from IPS courtesy of Nexenta
  – Extensible to generate RPM, SVR4, etc.
Supported Hardware

- x86 and amd64
  - Driver support dependent, see website for details.

- VMware and VirtualBox

- SPARC
  - Not yet, but really soon. Platforms supported as we have code or specifications

- Others
  - Anticipate integration of other architectures... s390, PowerPC, ARM are all possible.
Work Done So Far

- Replaced closed bits of libc (including full locale support)
- Replacements for most critical closed source utilities
- Replacements for some drivers
- It boots!
  - Still needs a few closed bits
  - But those will be replaced very soon with open equivalents
Work Remaining

- NFS/CIFS lock manager
- Full kcf module/daemon (crypto framework)
- Trusted Extensions (labeld)
- Many more drivers
- Further dependency resolution
- Probably many many other possibilities!
Resources

- http://www.illumos.org/
  - Website, defect tracking, source code, etc.
- developer@illumos.org
  - Developer mailing list
- discuss@illumos.org
  - General discussions
- #illumos
  - Illumos IRC channel (irc.freenode.net)
Demo!

Demonstration of the bits!!
Q&A

Ask away!
Thank you!

Thank you for listening and watching!
Come join us at http://www.illumos.org!