

GOLD: A New Operating System Paradigm.

Why everything you thought you knew about operating systems is wrong.

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What is Gold?

- Kernel Component - LSD
- Userland Library - libSystem and “Gold”
- GUI Library - Golem
- A precious metal

Brief History

- 1999 - 2002: Build-an-OS idea
- 2002 - 2004: Exploration of new concepts
- 2004 - present: Implementation and evolution of ideas thus far.

Motivation for a new Paradigm

- Problem: UNIX is broken
 - Solution: Fix it
 - Better solution: Redesign it
 - Best solution: Toss it out and start again, backwards compatibility gave us i386 brain-damage.
- Modern hardware requires modern techniques.

Life after UNIX

- Asynchronous system calls
- Message passing (Not your daddy's mach!)
- Object oriented system library
- Truly event driven interface

- And: No more file system!

The Kernel

- Object Oriented design and implementation
 - OOPC: Object Oriented Preprocessor for C
- Minimize context switches
 - Asynchronous system calls
 - Synchronous process state change calls
- All system resources accessed by GUID.
 - Devices
 - File Objects
 - Processes
 - Everything!

User Space

- Objective-C and Python
 - Class definitions are interchangeable
 - OpenStep like Object library
- URI-based object access
- Objects can be exchanged between processes
- One doesn't explicitly "save" work -- Kernel synchronizes buffers on the fly

Graphical Interface

- All interface components are Objects
 - Separation of interface and logic
- Objects can have graphical representations
 - “File” Objects are tagged with metadata to indicate handler, creator, and other useful data

Vital Statistics

- Subversion repository: `svn://svn.icculus.org/gold/trunk`
 - About 32000 lines of userland code
 - About 35000 lines of kernel code
- IRC channel: `irc.freenode.net #gold`
- Web Page: `http://icculus.org/gold/`
 - WebSVN of whole repository is available