



## Introducing the Haiku Operating System

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**Michael Phipps, Haiku President**  
**Axel Dörfler, Kernel Team Lead**  
**Bruno G. Albuquerque OpenBFS Team Lead**

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**What is it all about?**

**HAIKU**

The word 'HAIKU' is written in a bold, black, sans-serif font. The letter 'H' is partially obscured by a green leaf. The letter 'A' is partially obscured by an orange fish. The letter 'I' is partially obscured by a yellow leaf. The letter 'K' is partially obscured by a yellow leaf. The letter 'U' is partially obscured by a yellow leaf.

# What is Haiku?

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- **New OS focused on the desktop**
  - First release will be a binary compatible reimplementation of BeOS R5
- **Custom kernel designed for responsiveness**
- **Unified, cohesive interface integrated**
- **Best defaults, not maximum configurability**
- **Open Source (MIT licensed)**



# How does Haiku compare to BeOS R5?

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- **Implements entire R5 public API**
  - Extensions like UI layout, disk device API
- **Drivers for current hardware**
  - Added complete USB 1.1 and 2.0
  - SATA
  - ATI, nVidia, Via, Intel Extreme video drivers
  - AC97 Audio
- **Networking in the kernel**
- **File caching integrated with virtual memory**
- **Vector Icons**
- **Support for modern hardware**
  - Improved memory map to remove 1 GB limitation
- **Improved POSIX compatibility**
  - Mmap, POSIX threads



# Why Haiku?

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- **Simplicity is the key**
- **Multi-core/multi-processor is the future**
  - Inherent threaded design
- **Desktop focus**
  - Increases responsiveness and usability
  - With focus comes a clear set of tradeoffs and priorities
- **Small footprint, fast boot**
- **Integrated approach brings many benefits**
  - One operating environment allows maximum platform features
  - Fewer cases to test and debug



# History and Progress

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- **Started the day that Be announced the end of BeOS – August 18, 2001**
- **Dozens of contributors**
- **Nearly feature complete**
- **Many bugs to find and fix**
- **Over 7 million lines of code!**



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# Philosophy

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# Unity of Direction

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- **Proprietary OS's force you to follow the manufacturer's direction**
- **Many OSS projects encourage forks and alternate projects**
- **Haiku encourages you to guide from within**
- **One desktop, one UI, one Media Kit, etc.**





# Do The Right Thing

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- **Human Interface design**
  - Easy enough that your Mom can use it, powerful enough that you want to!
- **One common look makes documentation, support and QA easier**
- **Most common case as defaults**
- **Hide as much Inner workings as possible**
  - Figure out, don't ask
  - Assume the normal, allow the unusual



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## Technical Stuff

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# Small Footprint, Fast Boot

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- **Haiku is around 60 meg, uncompressed**
- **Small enough to fit on Flash**
- **PXE boot support is in progress**
- **Applications start quickly**
- **Smaller footprint means faster boot**
  - Less need to leave computer on



# C++ Native

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- **C++ is the best option for writing an OS today**
- **Best balance between performance and readability**
- **Lots of code available for virtually any tasks**
- **OO API allows faster development**
- **Low level C++ is possible if you are careful!**
- **Low overhead and no VM needed**



# OpenBFS

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- **Fully buzzword enabled**
  - 64 bit, journaled, attributes, indexes, live updates, multi-threaded, object-oriented
- **Built for large files, like movies and MP3s**
- **Database like queries make Gmail style labels work on the desktop**
- **Files MIME typed – no tla's needed!**



# Kits

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- **A kit is a complete API centered around a concept**
  - Networking, Interface, Media, Print for example
- **Rich API built into the OS**
  - Fewer libraries required means fewer dependencies
  - Easier to build apps
  - More productive coding
- **Example**
  - Building an application that reads bitmaps can leverage our Translator Kit instead of coding against and linking with libgif, libjpeg, etc.



# Replicants

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- **Replicants are serialized instances of a Haiku application**
- **Around since 1998**
- **Uses native serialization & messaging technology**
- **Other platforms call these Gadgets or Widgets**
  - But Haiku Replicants are embeddable into applications!



# Files Are Power!

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- **Contacts and Emails are saved as files with attributes**
  - Standard format means never converting
  - Any application, including Tracker, can view
  - Attributes give database-like functionality
- **More filetypes easily definable/extensible**
- **Easily build mini apps**
  - Applications can manage the file format and leave managing the files to the desktop





# Add-Ons

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- **Add-ons are an enhanced library loading interface**
- **Makes it easy to extend apps and the OS**
- **Built-up, not built-in**
- **The original author can't think of everything**
- **Apps don't have to be monolithic**



# Scripting

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- **Applications are fully scriptable**
- **OS standard scripting mechanism easily implemented in any language**
- **Adding more scripting nouns to your app is easy**
- **Allows for inter-application interaction in new ways**



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# Virtual Memory Subsystem File System Cache

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# Virtual Memory Subsystem

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- **BSD-like design:**
  - Cache object stack
  - Reverse page mappings
- **Integrated file system cache**



# File System Interface

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- **Transaction API**
  - Subtransaction support
- **Block Cache**
- **File Cache**
- **A file system is free to choose its cache implementation**



# File Cache

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- **Add-ons for cache notifications**
  - Launch speedup
  - Rule based, ILP
- **Stackable**
  - Logging



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**OpenBFS**

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**And finally...**

**HAIKU**

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## More Info

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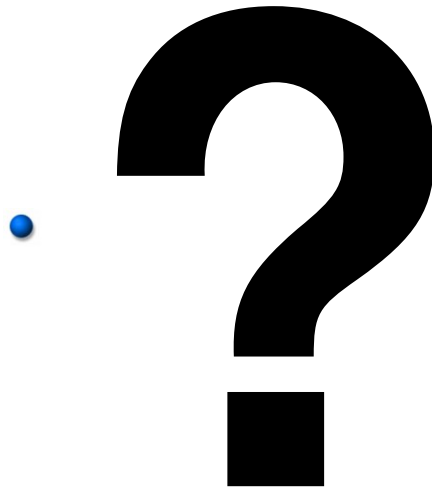
- <http://www.haiku-os.org>
- IRC channel on [#haiku](http://irc.freenode.org)
- Mailing list is still “openbeos” on [www.freelists.org](http://www.freelists.org)

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# Questions?

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