

HAIKU

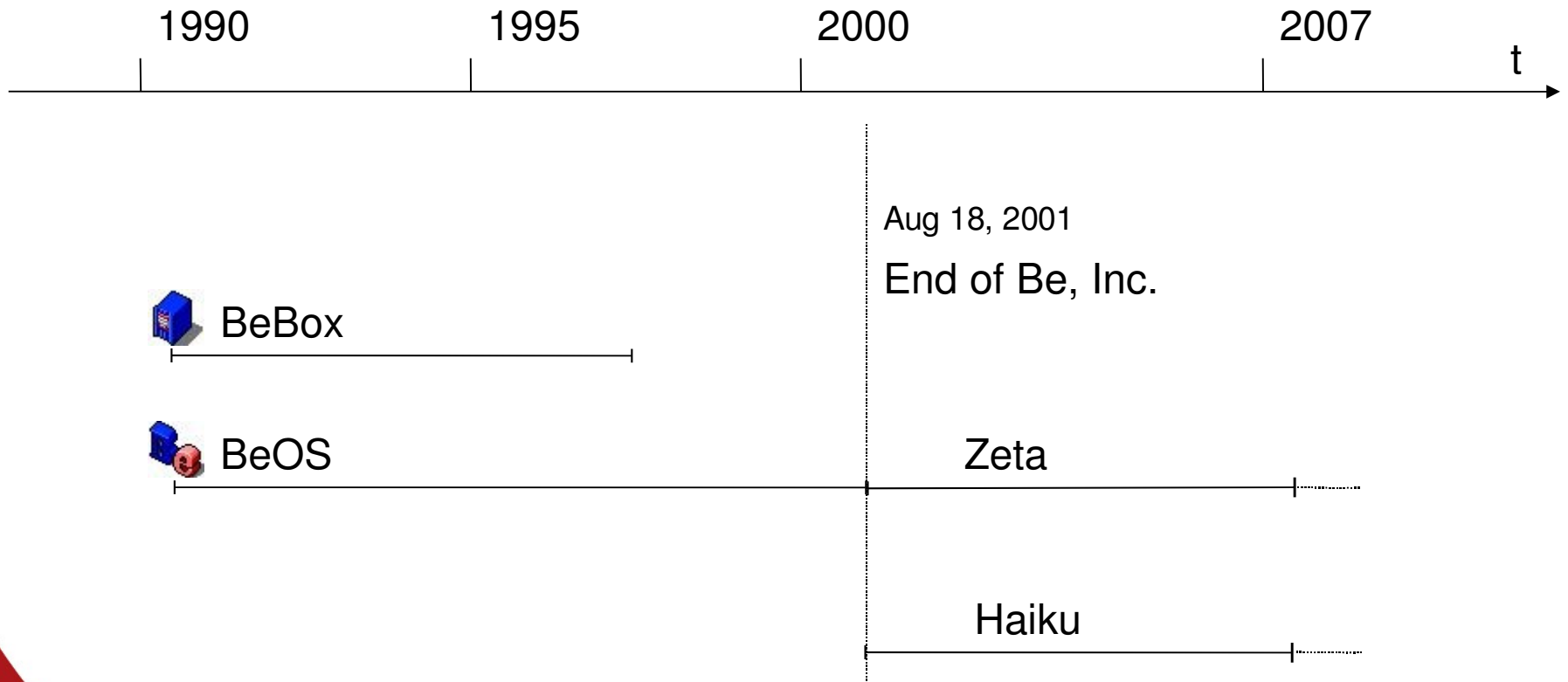
The Haiku Operating System

François Revol - March 10, 2007

Introduction

- Timeline
- Goals

Timeline



Goals

- Same as BeOS
- Principles
 - KISS: Keep It Smart and Simple
 - Architecture
 - UI
 - Smart defaults
 - Focus
 - Don't do everything; do one thing and be good at it.
 - Modular yet Extensible
 - Factor out reusable code.

Technical Features

- Kernel
- Modules & Drivers
- OpenBFS
- Queries
- File System Layout
- Kits
- BMessage
- Add-ons
- Replicants
- UI

Kernel

- Fork of the NewOS kernel
- Preemptive Multithreading
- Modular design
- Native IPC
 - Semaphores
 - Ports
 - Areas (shared memory)

Modules & Drivers

- Busses
- Module Hierarchy
 - `get_module("bus/usb/v1", &m)`
- Auto probing
 - `Open("/dev/input/foo/1")` -> rescan input drivers
- If it's supported, it just works!

OpenBFS

- 64 bit
- Journalled
- Built for large files (multimedia)
- Extended Attributes (Meta-Data)
 - Typed
 - Icon
 - Int
 - Float
 - String
 - Mime type
 - ...
 - Indexed = Searchable = Database-like

Queries

- Formula-based search on meta-data
- Live update from file-systems
- Used by applications
- Used in many places
 - Searching for Contacts
 - ((META:email=="*foo*@bar.com"))
 - ((IM:status=="Online"))
 - Mail files
 - ((MAIL:status=="New"))
 - MP3
 - ((Audio.Year>1990)&&(Audio.Artist=="[Ee]nigma"))
 - Finding Replicants
 - GoogleFS: $8 \cdot 10^9$ online bookmarks

File System Layout

- /boot/beos
 - etc
 - bin
 - system
 - lib
 - add-ons
 - kernel
 - input_server
 - ...
- /boot/apps
 - WonderBrush
 - lib
 - add-ons
 - Blender
- /boot/{home|users/*}
 - mail, people
 - bin
 - config
 - lib
 - add-ons
 - ...
 - settings

Kits

- Clean and Uniform C++ API
- Many Kits
 - Kernel
 - Support
 - Storage
 - Interface
 - Media
 - ...
- Inheritance:
 - BWindow
 - BDirectWindow
 - BView
 - BGLView
 - BTextView
 - ...
 - BEntryList
 - BDirectory (also a BNode)
 - BQuery

BMessage

- System-wide multi-purpose messaging
 - 'what' code defines the meaning
 - Target and sender
 - Typed, named fields
 - Int
 - Float
 - String
 - BMessage :)
 - ...
- Used everywhere: D&D, Settings...
- Even the kernel sends them.

Add-ons

- Kernel modules (bus managers, drivers)
- Graphics drivers
- Media
 - Drivers
 - Codecs
 - Nodes
- Translators
 - Pictures
 - Text (html, ...)
- Input Devices
 - Drivers
 - Methods
- ...

Replicants

- Replicants are Add-ons
- Serialized Apps inside Apps
- Code Reuse
- Task Separation

UI

- Clean
- Consistent
- Multi-threaded = responsiveness
- Still allows for foreign frameworks
 - SDL
 - NSPR (FireFox)
 - ...

Links

- This presentation
- Haiku
 -   <http://www.haiku-os.org>
 -  [#haiku](irc.freenode.org)
 -  Mailing list:
<http://www.freelists.org/list/openbeos>
- François Revol
 -   revol@free.fr

That's it!

Questions?

(Credits)

- The Numerica DTV orga team.
- Be, Inc. For creating BeOS and the BeBox.
- yellowTAB GmbH for having kept up BeOS alive and getting me a job for some time :)
- The Haiku team.
- Sound played at the demo was from:
<http://www.jamendo.com/fr/album/2964/>
- Marco Nelissen for SoundPlay (I should register someday)
- Yellowbites for WonderBrush
- The Firefox team even if we aren't allowed to call the port 'firefox' cause it's not official and it didn't work today anyway :D
- Many others but I'm running out of space...