MutekH project home

What is MutekH

?MutekH is a portable operating system for embedded platforms originally developped at the ?SoC department of the ?LIP6 Laboratory (?Université Pierre et Marie Curie in Paris).

MutekH is a set of libraries built on top of the Hexo exo-kernel. The exo-kernel can be seen as an Hardware Abstration Layer (HAL) used to address platform and processors specific implementations. MutekH is fully configurable to match every application needs.

It currently support these platforms:

- Soclib based platforms with Arm, Mips and Ppc multiprocessor support
- Pc platform with x86 multiprocessor support
- Unix processes (kernel and application run as standalone unix process)
- Simple platforms bare CPU with hardware (i.e. microcontrollers)

List of major contributors is available here.

Getting started

The following ressources are available to try MutekH easily:

- The MutekH as Unix process quick start guide is a step by step guide to run MutekH embedded in a GNU/Linux or MacOs user process.
- The MutekH quick start guide for SoCLib platform is a step by step guide to run MutekH on the Soclib multi-processor hardware simulator.
- The ?SoCLib livecd provided some sample platforms and applications based on older MutekH revisions.

More advanced topics are available:

- Using MutekH on a AT91SAM7? Arm microcontroller based platform.

Detailed features

Several modules are available:

- Native modules
  - Standard C library (libc)
  - Native Posix threads Support (libpthread)
  - TPC/IP stack networking library (libnetwork)
  - File system support library (libvfs) along with file system drivers (FAT, NFS)
  - ELF binary file format (libelf)
  - ?MutekS (libsrl), static OS for ?DSX
  - Device drivers for various peripherals
- The following library have been ported:
  - ?Lua scripting library (liblua)
  - ?Fdlibm standard math library

    - ♦ ?LibTermUI terminal driver and getline library

- The following modules are planed:
    - ♦ Unix kernel implementation library (libunix)

Some successfully ported applications:

- H264 video decoder (multi-processors)
- MJPEG and Theora multi-processor video decoder (multi-processors)
- ?Doom video game with network multiplayer support
- Various application using the ?Lua script engine

Documentation

Quickstart and tutorial documents:

- MutekH quick start guide for SoCLib platform
- Porting your application
- Using MutekH on a AT91SAM7?

Developper documentation:

- ?MutekH API reference manual
- Using the BuildSystem
- Adding a driver, or adding a new driver class
- Usage of IntegerTypes in MutekH

Getting the source

MutekH is being actively developped, now tarball releases are available yet.

Last source code can be downloaded from the svn source tree:

```
svn co https://www-asim.lip6.fr/svn/mutekh/trunk/mutekh
```