moby / **hyperkit**

A toolkit for embedding hypervisor capabilities in your application

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.circleci	tests: wait for hyperkit to exit before examining the disk image	May 10, 2018
dtrace	dtrace: Add a script to trace all block device accesses	Dec 3, 2017
go	go: Only check for initrd if specified	Apr 16, 2018
repo	AUTO: Update upstream packages	Dec 7, 2017
src	Merge pull request #225 from djs55/bytes	Jul 17, 2018
test	test: sync after vm has exited.	May 10, 2018
.gitignore	test: if we have qcow support, test we can attach a .qcow2 file	Dec 9, 2016
CODINGSTYLE.md	doc: update link to freebsd uncrustify's config file	Apr 10, 2018
CONTRIBUTING.md	Tailor documentation for Hyperkit	Apr 29, 2016
MAINTAINERS	Update Rolf Neugebauer's and my own github ids	Jun 9, 2017
Makefile	Offer a means to send the tty to the logs	Apr 10, 2018
README.md	Change references of OS X to macOS	Feb 25, 2018
README.xhyve.md	Tailor documentation for Hyperkit	Apr 29, 2016
TESTING.md	Introduce simple boot cycle test for hyperkit.	Jun 9, 2016
config.mk	build: add -Wno-packed to CFLAGS and remove pragmas from source code	Nov 3, 2016
hyperkit.1	hyperkit: do not require trailing commas for firmware definition	Apr 28, 2017
hyperkit.opam	ocaml: use mirage-block-unix.2.9.0 with locking support	Dec 7, 2017
hyperkitrun.sh	Rename com.docker.hyperkit to hyperkit	Feb 27, 2017
xhyve_logo.png	xhyve	Jun 10, 2015

README.md

HyperKit

circleci | passing

HyperKit is a toolkit for embedding hypervisor capabilities in your application. It includes a complete hypervisor, based on xhyve/bhyve, which is optimized for lightweight virtual machines and container deployment. It is designed to be interfaced with higher-level components such as the VPNKit and DataKit.

HyperKit currently only supports macOS using the Hypervisor.framework. It is a core component of Docker For Mac.

Requirements

- OS X 10.10.3 Yosemite or later
- a 2010 or later Mac (i.e. a CPU that supports EPT)

Reporting Bugs

If you are using a version of Hyperkit which is embedded into a higher level application (e.g. Docker for Mac) then please report any issues against that higher level application in the first instance. That way the relevant team can triage and determine if the issue lies in Hyperkit and assign as necessary.

If you are using Hyperkit directly then please report issues against this repository.

Usage

```
$ hyperkit -h
```

Building

```
$ git clone https://github.com/moby/hyperkit
$ cd hyperkit
$ make
```

The resulting binary will be in `build/hyperkit`

To enable qcow support in the block backend an OCaml OPAM development environment is required with the qcow module available. A suitable environment can be setup by installing `opam` and `libev` via `brew` and using `opam` to install the appropriate libraries:

```
$ brew install opam libev
$ opam init
$ eval `opam config env`
$ opam install uri qcow.0.10.3 conduit.1.0.0 lwt.3.1.0 qcow-tool mirage-block-unix.2.9.0 conf-libev
logs fmt mirage-unix prometheus-app
```

Notes:

- `opam config env` must be evaluated each time prior to building hyperkit so the build will find the ocaml environment.
- Any previous pin of `mirage-block-unix` or `qcow` should be removed with the commands:

  ```
  $ opam update
  $ opam pin remove mirage-block-unix
  $ opam pin remove qcow
  ```

Tracing

HyperKit defines a number of static DTrace probes to simplify investigation of performance problems. To list the probes supported by your version of HyperKit, type the following command while HyperKit VM is running:

```
 $ sudo dtrace -l -P 'hyperkit$target' -p $(pgrep hyperkit)
```

Refer to scripts in dtrace/ directory for examples of possible usage and available probes.

Relationship to xhyve and bhyve

HyperKit includes a hypervisor derived from xhyve, which in turn was derived from bhyve. See the original xhyve README which incorporates the bhyve README.

We try to avoid deviating from these upstreams unnecessarily in order to more easily share code, for example the various device models/emulations should be easily shareable.

Reporting security issues

The maintainers take security seriously. If you discover a security issue, please bring it to their attention right away!

Please **DO NOT** file a public issue, instead send your report privately to security@docker.com.

Security reports are greatly appreciated and we will publicly thank you for it. We also like to send gifts—if you're into Docker schwag, make sure to let us know. We currently do not offer a paid security bounty program, but are not ruling it out in the future.

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