WIP/CFT: OccamBSD

BY TOM JONES AND MICHAEL DEXTER

WIP/CFT is a new column shepherded by Tom Jones that will cover interesting, long-running projects and work in progress you might like to know about and/or contribute to. This first installment features Tom in conversation with OccamBSD author, **Michael Dexter**.

What is OccamBSD?

FreeBSD can be compiled many different ways—the FreeBSD operating system has many components that can be built conditionally. Optionally built components are very powerful, they help keep the operating system modular and make it easy to remove features that are not required for a build, whether this is embedded or not.

OccamBSD is a tool for building small, embedded FreeBSD images. Rather than copying individual tools to make custom images or relying on external specialized build tools, OccamBSD is a shell script that uses FreeBSD's build infrastructure to create minimal images with three boot targets in mind—jails, and the bhyve and Xen Hypervisors.

The resulting minimal system contains approximately 400 files in three-dozen directories, and rather than being unrecognizable, provides a glimpse of what 4.4BSD-Lite2 looked like before the modern BSDs were born.

With OccamBSD, we have a unique opportunity to see the majority of build options in action and to explore what a "world" without "buildworld" looks like, providing a minimum userland that allows for a successful login using a bhyve virtual machine.

The minimum files required to boot under bhyve, with the exception of the VirtIO drivers, largely represent the code used by all FreeBSD users at all times. This narrow scope is where all auditing, documentation, and computer science education efforts should arguably begin. FreeBSD is otherwise overwhelming to a new student or user.

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Why it is interesting?

If you use FreeBSD, this highlights the code you use and is a rewarding exercise.

For a FreeBSD user, OccamBSD gives you an example of a very stripped-down system and

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the opportunity to consider if a smaller system works for you. OccamBSD creates a learning environment that is smaller and thus easier to read and reason about compared to a full FreeBSD environment, which might be a great starting point for a course or academic work.

How can I contribute?
OccamBSD is developed on GitHub. Contributions are welcome and you can get involved by testing the tools, writing documentation, or submitting patches.

OccamBSD is happy to take new issues on github, bug fixes by pull request, and reports of success wherever you can find the developers.

https://github.com/michaeldexter/occambsd
https://github.com/michaeldexter/occambsd/issues

TOM JONES wants FreeBSD-based projects to get the attention they deserve. He lives in the North East of Scotland and offers FreeBSD consulting..

MICHAEL DEXTER is an OpenZFS support provider in Portland, Oregon loves to talk about the bhyve hypervisor and OpenZFS.

Pluggable Authentication Modules: Threat or Menace?
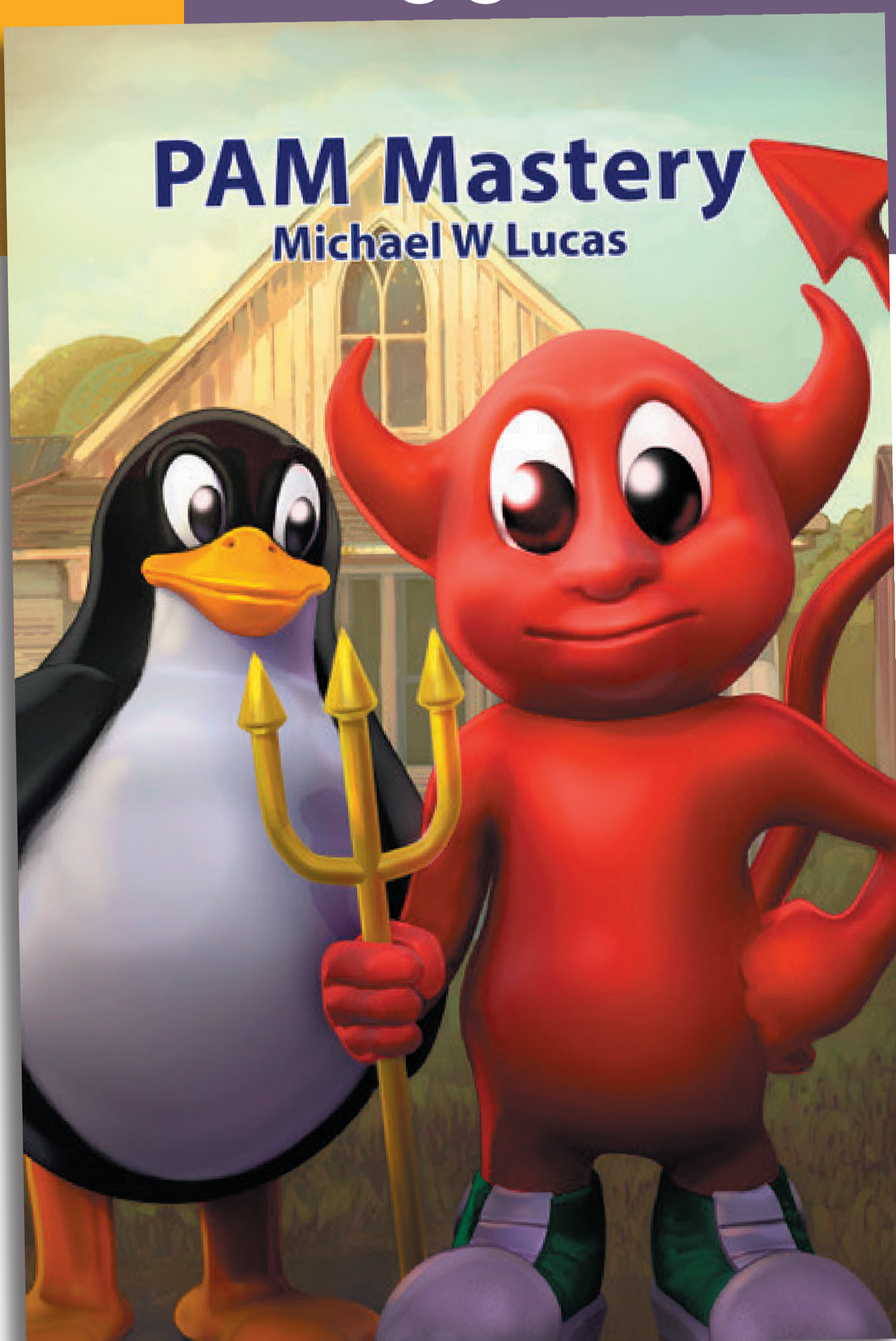
PAM is one of the most misunderstood parts of systems administration. Many sysadmins live with authentication problems rather than risk making them worse. PAM's very nature makes it unlike any other Unix access control system.

If you have PAM misery or PAM mysteries, you need PAM Mastery!

"Once again Michael W Lucas nailed it." — nixCraft

PAM Mastery by Michael W Lucas
https://mwl.io