Introducing OpenBSD's new httpd

Abstract for BSDCan 2015

Reyk Floeter (reyk@openbsd.org)

January 15, 2015

About the Talk

OpenBSD includes a brand new web server that was started just two weeks before the 5.6[7] release was finished. Work is in active progress and significant improvements have been done since its initial appearance. But why do we need another web server? This talk is about the history, design and implementation of the new httpd(8). About 17 years ago, OpenBSD first imported the Apache[3] web server into its base system. It got cleaned up and improved and patched to drop privileges and to chroot itself by default. But years of struggle with the growing codebase, upstream, and the inacceptable disaster of Apache 2 left OpenBSD with an unintended fork of the ageing Apache 1.3.29 for many years. When nginx[5] came up, it promised a much better alternative of a popular, modern web server with a suitable BSD license and a superior design. It was patched to drop privileges and to chroot itself by default and eventually replaced Apache as OpenBSD's default web server. But history repeated itself: a growing codebase, struggle with upstream and the direction of its newly formed commercial entity created a discontent among many developers. Until one day at OpenBSD's g2k14 Hackathon in Slovenia, I experimented with relayd[2] and turned it into a simple web server. A chain of events that were supported by Bob Beck and Theo de Raadt turned it into a serious project that eventually replaced nginx as the new default. It was quickly adopted by many users: "OpenBSD httpd" was born, a simple and secure web server for static files, FastCGI and LibreSSL-powered TLS. And, of course, "httpd is web scale".

About the Author

Reyk Floeter is the founder of Esdenera Networks GmbH[1], a company that develops OpenBSD-based networking and security products for cloud-based and software-defined networks. For more than ten years, he gained experience in creating and commercially supporting enterprise-class products based on OpenBSD, like most recently the Esdenera Firewall. Reyk is located in Hannover, Germany, but works with international customers like Internet Initiative Japan Inc. (IIJ) in Tokyo[4]. He is the author of the popular relayd load balancer and a hacker in the OpenBSD[6] project, where he contributed various features, fixes, networking drivers and daemons since 2004, like OpenBSD's ath, trunk (a.k.a. lagg), vic, hostapd, relayd, snmpd, iked, and httpd.

References

[1] Esdenera, *Esdenera Networks GmbH*, `http://www.esdenera.com/`.

[2] Reyk Floeter, *relayd*, `http://bsd.plumbing/`.

[3] The Apache Software Foundation, *The Apache HTTP Server Project*, `http://httpd.apache.org/`.

[4] IIJ, *Internet Initiative Japan Inc.*, `http://www.iij.ad.jp/`.

[5] Nginx Inc., *NGINX*, `http://nginx.com/`.

[6] OpenBSD, *The OpenBSD Project*, `http://www.openbsd.org/`.

[7] The OpenBSD Project, *OpenBSD 5.6*, `http://www.openbsd.org/56.html`.