

Open vSwitch Development Overview

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Process

- Git version control
- All development occurs on the mailing lists
 - dev: Code reviews
 - git: Change notifications
- All code is peer-reviewed
- Online gitweb:
 - <http://openvswitch.org/cgi-bin/gitweb.cgi?p=openvswitch;a=summary>

Interesting Files

- DESIGN: Design decisions used to implement OVS
- FAQ: FAQ
- INSTALL.*: Installation instructions for a number of platforms
- IntegrationGuide: Guide to integrating with new systems (e.g., new hypervisor)
- PORTING: Guide to porting OVS to new platforms (e.g., new OS or hardware platform)
- ovsdb/SPECS: JSON-RPC protocol used by OVSDDB (basis for Informational RFC)

Submitting Patches

- Described in “SubmittingPatches” file
- Use “git format-patch” with one patch per email
- The source tree should build and work after each patch is applied (run “make check”)
- Make sure to update man page and NEWS, if appropriate
- Need “Signed-off-by:”, which means agreeing to the “Developer’s Certificate of Origin”

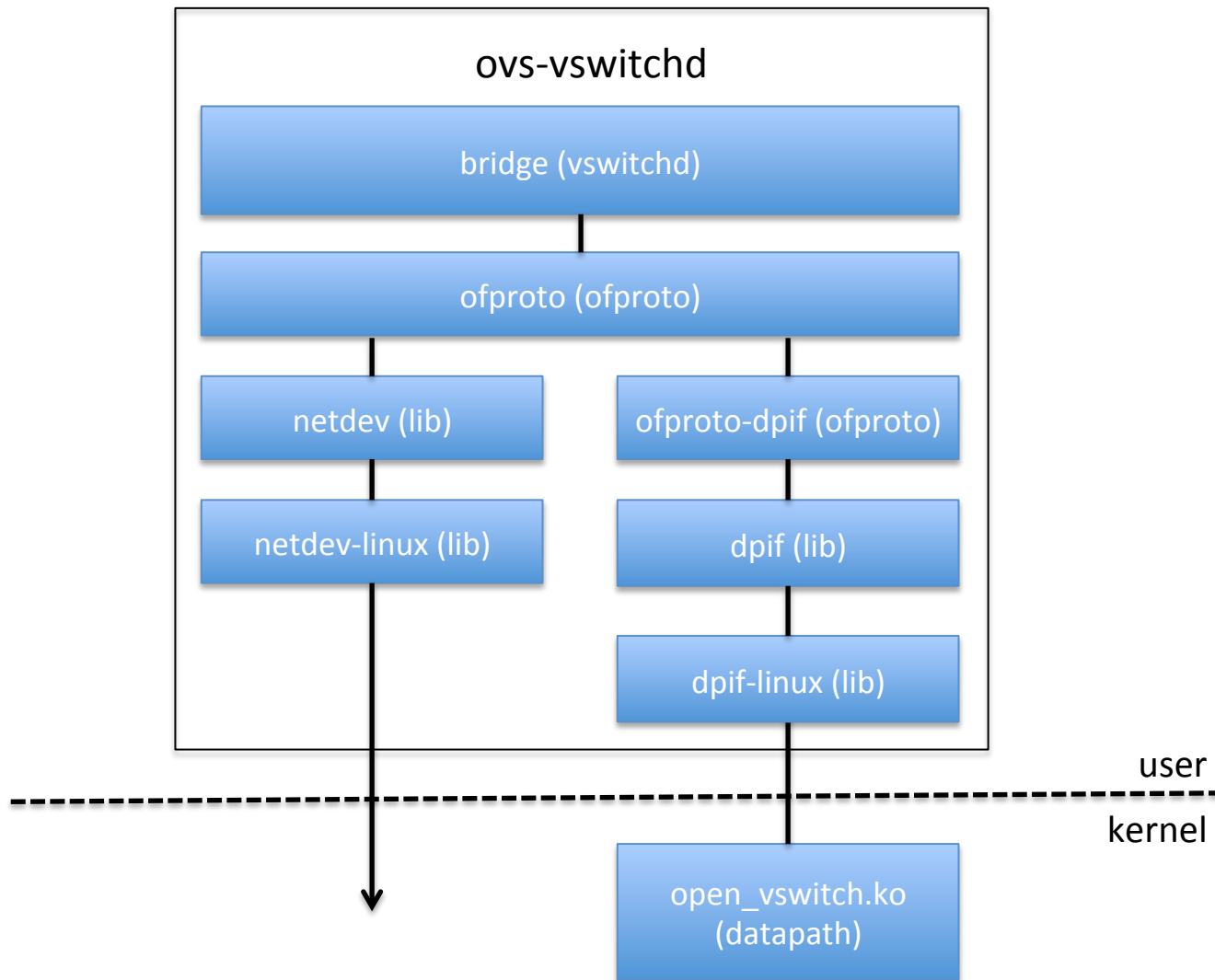
Code Layout

- datapath: Linux kernel datapath implementation
- include: Include files
- lib: Common library files (netdev, dpif)
- ofproto: OpenFlow library
- ovssdb: Database code (server and clients)
- utilities: Utilities for OVS (ovs-ofctl, ovs-vsctl)
- vswitchd: ovs-vswitchd source code

Architectural Overview

- ovs-vswitchd: Responsible for switching. Reads configuration from ovssdb-server and passes configuration down to “ofproto” library.
- ofproto: OVS library that implements an OpenFlow switch.
- dpif: Instance of an ofproto for software switches, which “explodes” wildcard entries into exact match.
- netdev: Library that abstracts interacting with network devices.

Linux Kernel Datapath Example



Integration Code

- Bulk of code is platform independent
- Distribution contains platform-specific code in the following directories:
 - xenserver
 - debian
 - rhel
- Platform-specific install instructions are in the root directory
- Includes init scripts, platform-specific daemons, and glue code

Python Bindings

- The “python” directory contains Python bindings
- Many of the C-based library functions from “lib” are available
- Read/write bindings for OVSDB available
- A number of small daemons written in Python use these bindings and ship with the distribution

Testing

- “tests” directory contains Autotest unit tests
- Run “make check”—runs over 1100 unit tests
 - Run a specific class:
make TESTSUITEFLAGS="-k ofproto" check
- If adding new functionality, please consider adding your own unit tests!