



OPEN SWITCH

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HPE

- ▶ OpenSwitch Project – motivation and goals
- ▶ Open Community Enablement
- ▶ Design Principles
- ▶ Architecture
- ▶ Status
- ▶ Getting your hands dirty

- ▶ Open and community driven
- ▶ Support common network use-cases - HA, ISSU, L2, L3, ...
- ▶ Consistent configuration, monitoring, troubleshooting
- ▶ Programmatic interfaces and CLI / GUI
- ▶ Aligned to and an extension of OVS

- ▶ Active mailing list with an average of 25 mails per day
- ▶ Weekly + frequent on-demand IRC chats
- ▶ All code/ design reviews are public using Gerrit
- ▶ All new code is mostly Apache 2.0, hosted on `git.openswitch.net` and mirrored to GitHub
- ▶ Defined releases and schedules
- ▶ Yocto for image building and development environment
- ▶ Advanced virtual/ physical test framework

CORPORATE PARTICIPANTS



▶ Aggressive modularization / high availability

- OVSDB for configuration, statistics, status and all inter-module communications
- No direct messaging between modules – pub/ sub through the database only
- Isolated fault domains – modules wouldn't know about other modules failures

▶ Portability

- Keep all hardware specific code separate and replaceable

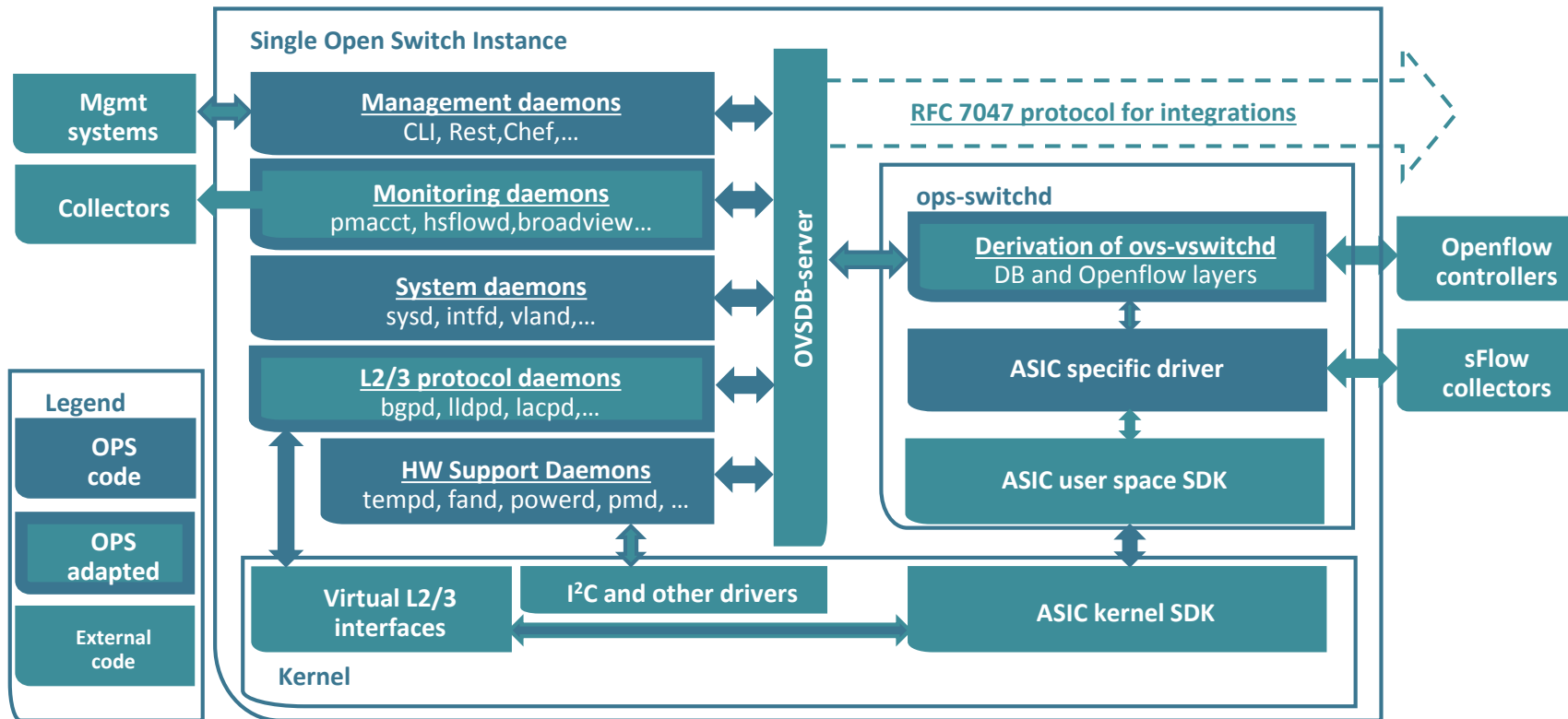
▶ Extensibility

- Users and third-parties should be able to extend the system

▶ Good open source citizenship

- Reuse and contribute
- Minimize forking, stay on the edge
- Enable upstreaming by providing value to other projects – Linux, OCP, OVS, Quagga, etc.

ARCHITECTURAL VIEW



- ▶ Almost all the basics are in place – vlans, lags, routing, ECMP, BGP, OSPF, sFlow, NTP, DHCP, SVI, CLI, REST etc.
- ▶ ACLs, QoS, MLAG, mirroring, MSTP and many others are coming in the next couple of months.
- ▶ Broadcom Trident II is supported (Accton 5712/ 6712), Tomahawk (Accton 7712) is on the way.
- ▶ Broadcom contributes Broadview monitoring support and develops OpenFlow support in its plugin.
- ▶ Barefoot contributes P4 plugin and emulator which runs inside VM and Docker containers.
- ▶ Cavium enables OPS on XPliant platforms.
- ▶ Mellanox enables OPS on Spectrum by creating SAI plugin.
- ▶ Code is in Alpha quality - features are being rapidly added
- ▶ Most developers will switch from feature development to hardening by end of March, with the goal of having operational system in June/ July timeframe.

▶ Development environment

- Based on Yocto
 - Provides the developer environment and build system
 - Fast build times thanks to tight couple of infrastructure with build system
 - Systemd based
 - Full feature debug tools

▶ Component design enables porting to other Linux Distro

▶ Development workflow

- Inspired on OpenStack development workflow
 - Gerrit
 - Jenkins
- Continuous Integration
 - Virtual testing environment

WWW.OPENSWITCH.NET



Open
Switch