



Caitlin Cabrera

# **The Power of Open-Source: How To Contribute To and Manage Communities**



## About Me

- First of all thank you!
- Came here all the way from Omaha, NE.
- Software Engineer
- Writes a lot of Ruby on Rails in the information security space
- Writes a lot ABOUT Ruby on Rails and the information security space
- Probably lifting weights when I'm not writing code

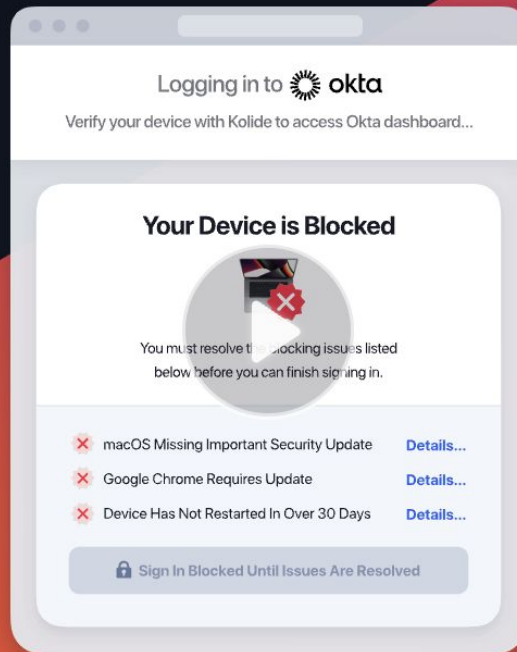


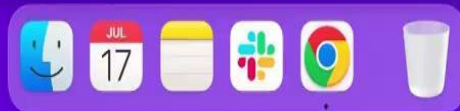
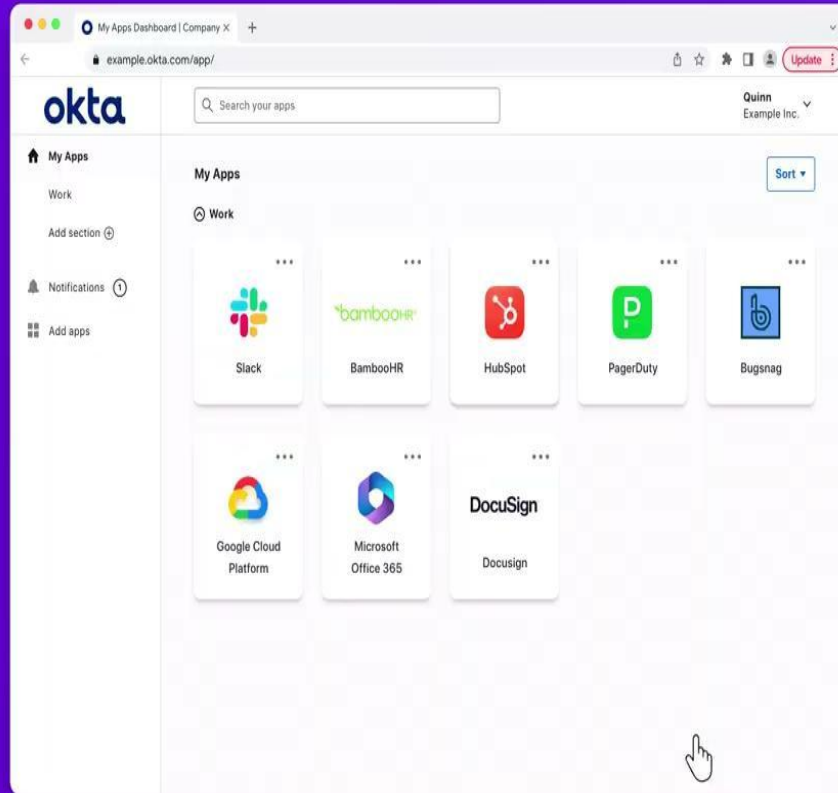
# Open source



# Kolide ensures that if a device isn't secure, it can't access your apps.

- Achieve Zero Trust Access
- Designed for Okta
- Works on Mac, Windows, Linux, iOS, and Android

[Watch On-Demand Demo](#) databricks octopusenergy Robinhood Clio ANDURIL MERCURY LaunchDarkly JOBBER





### ARP Cache Entries

network



### Atom Packages

software, extensions, developers, ide



### BIOS Platforms

hardware, operating-system



### Certificates

identity, security, trust



### Chrome Extensions

google, software, web-browsers, extensions



### Crontab Entries

unix, scripts, autoruns



### /etc/hosts Entries

network, dns



### Firefox Add-ons

mozilla, software, web-browsers, extensions



### Linux Debian Packages

debian, software, packages



### Linux RPM Packages

centos, rpm, software, packages



### Mac Active Directory Options

active-directory, enterprise



### Mac App Schemes

apps, network, default-software



### Mac Apps

apps, software



### Mac Battery Status

batteries, hardware



### Mac Crashes

operating-system, hardware, stability



### Mac Firewall Settings

firewall, operating-system, security



### Mac Homebrew Packages

software, packages, developers



### Mac Kernel Extensions

kernel, security, stability, extensions



### Mac Launchd Entries

autoruns, daemons, software



### Mac Location Services Authori...

location, privacy, tcc



### Mac Location Services Status

location, privacy, tcc



### Mac Package Install History

software, apps, install-history, updates



### Mac Profiles

mdm, device-management, policies



### Mac Safari Extensions

apple, software, web-browsers, extensions





### Mac Screenlock Status

screenlock, security, privacy



### Mac SIP Settings

security, integrity, boot-security, operating-...



### Mac Startup Security Settings

security, startup, boot-security, operating-...



### Mac System Extensions

operating-system, kernel, extensions, stabi...



### Mac XProtect Reports

anti-virus, threats, security



### Microsoft Office Add-ins

microsoft, extensions, software, productivity



### NPM Packages

developers, software, packages



### Operating Systems

operating-system, updates



### Python Packages

developers, software, packages



### SSH Keys

developers, identity, security, trust



### TPM Chips

tpm, hardware-security, integrity, hardware



### Users

operating-system, identity, login, access



### VSCode Extensions

software, extensions, ide, developers



### Windows Chocolatey Packages

software, packages, developers



### Windows Defender Settings

defender, anti-virus, security



### Windows Defender Threat Det...

defender, anti-virus, security, threats



### Windows Drivers

hardware, drivers



### Windows Environment Variables

environment



### Windows Microsoft Licenses

software, licenses



### Windows Pending Updates

updates, operating-system, security



### Windows Programs

software



### Windows Screenlock Status

screenlock, security, privacy



### Windows Update Settings

updates, operating-system, security





**osquery**



## osquery

- Created by engineers at Facebook
- Open-source framework
- Provides a way to get structured data back from an endpoint
  - Enables a user to write queries to gather information about a machine or a fleet of machines
- This data can then be queried using SQL



## Osquery goals

- Operating system support
  - Windows
  - macOS
  - Linux
- Provide reliability while using few system resources (CPU, RAM, etc.)
- Consistent access to data across multiple platforms, making it easy to expose and correlate structured data

~ osqueryi

osquery> SELECT \* FROM time;

weekday = Friday

year = 2023

month = 7

day = 14

hour = 19

minutes = 4

seconds = 54

timezone = UTC

local\_timezone = CDT

unix\_time = 1689361494

timestamp = Fri Jul 14 19:04:54 2023 UTC

datetime = 2023-07-14T19:04:54Z

iso\_8601 = 2023-07-14T19:04:54Z

~ osqueryi

```
osquery> SELECT * FROM battery;  
      model = bq40z651  
serial_number = AF8Y1419703LNM0J9TAY  
  cycle_count = 112  
      health = Good  
      state = Battery Power  
   charging = 0  
   charged = 0  
designed_capacity = 8694  
   max_capacity = 100  
current_capacity = 71  
percent_remaining = 71  
      amperage = -695  
      voltage = 11826  
minutes_until_empty = 483  
minutes_to_full_charge = 35
```

## 275 Tables

### account\_policy\_data

acpi\_tables

ad\_config

alf

alf\_exceptions

alf\_explicit\_auths

app\_schemes

apparmor\_events

apparmor\_profiles

appcompat\_shims

apps

apt\_sources

arp\_cache

asl

atom\_packages

augeas

authenticode

authorization\_mechanisms

authorizations

authorized\_keys

autoexec

azure\_instance\_metadata

azure\_instance\_tags

background\_activities\_modera

battery

bitlocker\_info

block\_devices

bpf\_process\_events

bpf\_socket\_events

browser\_plugins

carbon\_black\_info

carves

certificates

chassis\_info

chocolatey\_packages

chrome\_extension\_content\_sc

chrome\_extensions

connectivity

cpu\_info

cpu\_time

cpuid

crashes

crontab

cups\_destinations

cups\_jobs

curl

curl\_certificate

deb\_packages

default\_environment

device\_file

device\_firmware

device\_hash

device\_partitions

disk\_encryption

disk\_events

disk\_info

dns\_cache

dns\_resolvers

docker\_container\_envs

docker\_container\_fs\_changes

docker\_container\_labels

docker\_container\_mounts

docker\_container\_networks

docker\_container\_ports

users

video\_info

virtual\_memory\_info

wifi\_networks

wifi\_status

wifi\_survey

winbaseobj

windows\_crashes

windows\_eventlog

windows\_events

windows\_firewall\_rules

windows\_optional\_features

windows\_security\_center

windows\_security\_products

windows\_update\_history

wmi\_bios\_info

wmi\_cli\_event\_consumers

wmi\_event\_filters

wmi\_filter\_consumer\_binding

wmi\_script\_event\_consumers

xprotect\_entries

xprotect\_meta

xprotect\_reports

yara

yara\_events

ycloud\_instance\_metadata

yum\_sources



<https://honest.security/>

# Honest Security v 1.0

A guide to endpoint security and device management that doesn't erode your values.

**Start Reading →**

**Get the PDF** 

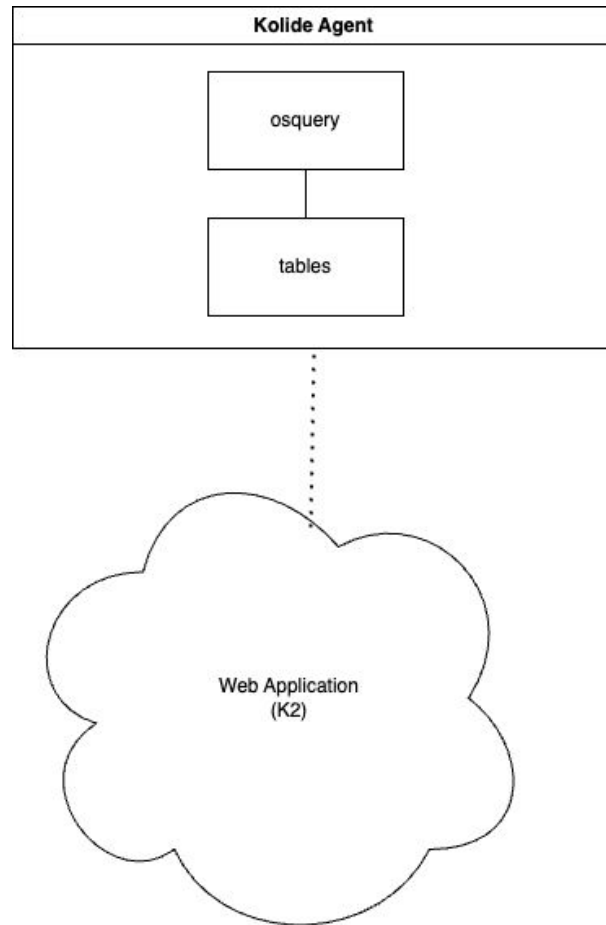
## THE TENETS OF HONEST SECURITY

1. The values your organization stands behind **should be well-represented in your security program.**
2. **A positive working relationship** between the end-user and the security team is incredibly valuable and worth fostering.
3. This relationship is built on a foundation of trust that is demonstrated through **informed consent and transparency.**
4. The security team should **anticipate and expect that end-users use their company owned devices for personal activities** and design their detection capabilities with this in mind.
5. End-users are capable of making **rational and informed decisions about security risks** when educated and honestly motivated.



## osquery + Kolide

- Kolide's launcher agent runs on osquery to gather ground truth from devices so that we can determine device compliance
  - <https://github.com/kolide/launcher>
- Our launcher itself is also open source, and it offers a few extra elements on top of osquery such as automatic updating
- Osquery is essential for our product





## Checks

6 New Checks

[Add New Checks](#)☐ 88 Active Checks 18 Paused

- ☐



40%

 **macOS Software Update - Ensure OS Is Up-to-Date** 

Blocks after **7 days**

22 Devices Failing (5 Blocked)
- ☐



75%

 **Windows Update - Ensure Important Updates Are Installed** 

Blocks after **14 days**

3 Devices Failing (2 Blocked)
- ☐

75%

 **Windows Screenlock - Require Secure Screenlock Config** 




COMPLIANCE

CRITICAL

Blocks **immediately**

3 Devices Failing (3 Blocked)
- ☐

77%



 **EFI SecureBoot Should Be Enabled**  

Reporting Only

Configure Blocking

4 Devices Failing
- ☐

83%



 **Windows Explorer - Require File Extensions Be Visible** 

Reporting Only

Configure Blocking

2 Devices Failing
- ☐



83%

 **Bitlocker - Require Bitlocker Encryption on Primary Disk** 

Blocks after **14 days**

2 Devices Failing (2 Blocked)
- ☐

83%


 **Linux Firewall - Require Uncomplicated Firewall (UFW) To Be Enabled** 

INFO

Reporting Only

Configure Blocking

1 Device Failing

- 
- We just learned what osquery is and how it works with Kolide
  - Let's talk about making a contribution
  - The fun part: coming up with an idea and shipping it!

n8felton commented on Feb 25, 2022

Contributor



## Feature request

---

### What new feature do you want?

Expand the `video_info` table to macOS. Example of where the information available is in `system_profiler -json`  
`SPDisplaysDataType`

### How is this new feature useful?

This would allow collecting information available in the `video_info` table for macOS hosts.

### How can this be implemented?

I haven't dived deep into how this is possible yet, however, Core Graphics may be involved.



## video\_info

Retrieve video card information of the machine.

[Improve this Description on Github](#)



COLUMN	TYPE	DESCRIPTION
color_depth	INTEGER	The amount of bits per pixel to represent color.
driver	TEXT	The driver of the device.
driver_date	BIGINT	The date listed on the installed driver.
driver_version	TEXT	The version of the installed driver.
manufacturer	TEXT	The manufacturer of the gpu.
model	TEXT	The model of the gpu.
series	TEXT	The series of the gpu.
video_mode	TEXT	The current resolution of the display.



# My desk



~ osqueryi

osquery> SELECT \* FROM connected\_displays;

```
        name = ASUS PA328CGV
      product_id = 326c
    serial_number = ccb2
      vendor_id = 6b3
  manufactured_week = 44
  manufactured_year = 2021
      display_id = 2
        pixels = 2560 x 1440
    resolution = 2560 x 1440 @ 120.00Hz
  ambient_brightness_enabled = -1
    connection_type = -1
      display_type = -1
        main = 1
        mirror = 0
        online = 1
      rotation = 1

.....
```

```
.....  
        name = Color LCD  
        product_id = a050  
        serial_number = fd626d62  
        vendor_id = 610  
        manufactured_week = 0  
        manufactured_year = 0  
        display_id = 1  
        pixels = 3456 x 2234  
        resolution = 1728 x 1117 @ 120.00Hz  
ambient_brightness_enabled = -1  
        connection_type = spdisplays_internal  
        display_type = spdisplays_built-in-liquid-retina-xdr  
        main = 0  
        mirror = 0  
        online = 1  
        rotation = 0  
  
.....
```

```
.....  
        name = Hp Vh240A  
        product_id = 3499  
        serial_number = 1010101  
        vendor_id = 220e  
        manufactured_week = 0  
        manufactured_year = 0  
        display_id = 5  
        pixels = 1080 x 1920  
        resolution = 1080 x 1920 @ 60.00Hz  
ambient_brightness_enabled = -1  
        connection_type = -1  
        display_type = -1  
        main = 0  
        mirror = 0  
        online = 1  
        rotation = 1
```

.....

## What?

This table adds a `connected_displays` virtual table which produces multiple rows (depending on the number of displays) giving useful information about a Macbook's internal battery.

Here is what the table looks like for my 15" Macbook Pro 2021:

name	product_id	serial_number	vendor_id	display_week	display_year	display_id	pixels	resolution	ambient_brightness	connection_type	display_type	main	mirror	online	rotation
LC32G7xT	785a	43583645	4c2d	13	2021	2	2560 x 1440	2560 x 1440 @ 120.00Hz	0	2560 x 1440 @ 120.00Hz	spdisplays_built-in-liquid-retina-xdr	1	0	1	1
Color LCD	a050	fd626d62	610	0	0	1	3456 x 2234	1728 x 1117 @ 120.00Hz	0	1728 x 1117 @ 120.00Hz		0	0	1	0
Hp Vh248A	3499	1010101	220e	0	0	32	1080 x 1920	1080 x 1920 @ 60.00Hz	0	1080 x 1920 @ 60.00Hz		0	0	1	1
Hp Vh248A	3499	1010101	220e	0	0	33	1080 x 1920	1080 x 1920 @ 60.00Hz	0	1080 x 1920 @ 60.00Hz		0	0	1	1

osquery>

## Why?

This is meant to resolve [#7486](#). This table provides helpful insights into display age, serial numbers, and resolution.



1



1

# Easy, right?




**Add `connected_displays` table on macOS** ✓

macOS

virtual tables

#7946 by cacab was merged on May 3 • Approved

---

- 
- We all know software engineering isn't that easy
  - Time at Kolide = a little over a year
  - Ruby on Rails != C++ || Python
  - Blockers

- Research, gathering resources
  - Community written blogs, and the official documentation



## TUTORIALS

## How to Write a New Osquery Table

 Jason Meller

## Introduction

One of my favorite features of `osquery` is the delightful user experience associated with developing new virtual tables. In this guide, we will work together to implement a new high-value table from scratch that currently doesn't exist in `osquery`. Specifically, we will implement a `bluetooth` table that works on macOS.

» Development » Creating New Tables

[Edit on GitHub](#)

## Creating tables

SQL tables are used to represent abstract operating system concepts, such as running processes.

A table can be used in conjunction with other tables via operations like sub-queries and joins. This allows for a rich data exploration experience. While osquery ships with a default set of tables, osquery provides an API that allows you to create new tables.

You can explore current schema here: <https://osquery.io/schema>. Tables that are up for grabs in terms of development can be found on GitHub issues using the "virtual tables" + "up for grabs tag".

## New Table Walkthrough

Let's walk through an exercise where we build a 'time' table. The table will have one row, and that row will have three columns: hour, minute, and second.

Column values (a single row) will be dynamically computed at query time.





Caitlin Cabrera

I'm trying to compile my updated fork of osquery and I'm getting some errors in the configuration stage: anyone in this channel has have insight?

```
build git:(master)
cmake -DCMAKE_OSX_DEPLOYMENT_TARGET=10.14 -DCMAKE_C_COMPILER=clang
-DCMAKE_CXX_COMPILER=clang++...
```

---



becca

if you run `git describe --tags --always --dirty` what do you see?

---



Caitlin Cabrera

a11449053

---



becca

you'll want the git describe command to output something that looks like semver (e.g. for launcher i've got `v0.13.5-10-g40629c0-dirty`), that's how you'll know it's fixed

- There are multiple data sources to pull from to write an osquery table
  - Reading a property list (.plist) file
  - Reading an SQLite database file
  - Using a macOS API
  - Shelling out a binary (or utility)

n8felton commented on Feb 25, 2022

Contributor



## Feature request

---

### What new feature do you want?

Expand the `video_info` table to macOS. Example of where the information available is in `system_profiler -json`  
`SPDisplaysDataType`

### How is this new feature useful?

This would allow collecting information available in the `video_info` table for macOS hosts.

### How can this be implemented?

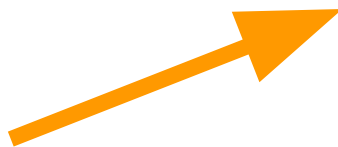
I haven't dived deep into how this is possible yet, however, Core Graphics may be involved.



```
cc@Caitlins-MacBook-Pro-3:~  
→ ~ system_profiler SPDisplaysDataType  
Graphics/Displays:  
  
Apple M1 Pro:  
  
Chipset Model: Apple M1 Pro  
Type: GPU  
Bus: Built-In  
Total Number of Cores: 16  
Vendor: Apple (0x106b)  
Metal Support: Metal 3  
Displays:  
Color LCD:  
Display Type: Built-in Liquid Retina XDR Display  
Resolution: 3456 x 2234 Retina  
Main Display: Yes  
Mirror: Off  
Online: Yes  
Automatically Adjust Brightness: No  
Connection Type: Internal  
  
→ ~ □
```

## What About Shelling Out to a Binary?

Sometimes when a user of osquery is advocating for a new table, they point to a command-line tool that produces the exact output they are looking for (in our case, `system_profiler SPBluetoothDataType` does the job). These users might expect the table to be easily developed by quickly asking the osquery process to execute the command-line tool, read its output, and produce a table.



```

table_name("connected_displays")
description("Provides information about the connected displays of the machine.")
schema([
    Column("name", TEXT, "The name of the display."),
    Column("product_id", TEXT, "The product ID of the display."),
    Column("serial_number", TEXT, "The serial number of the display."),
    Column("vendor_id", TEXT, "The vendor ID of the display."),
    Column("manufactured_week", INTEGER, "The manufacture week of the display. This field is 0 if not supported"),
    Column("manufactured_year", INTEGER, "The manufacture year of the display. This field is 0 if not supported"),
    Column("display_id", TEXT, "The display ID."),
    Column("pixels", TEXT, "The number of pixels of the display."),
    Column("resolution", TEXT, "The resolution of the display."),
    Column("ambient_brightness_enabled", TEXT, "The ambient brightness setting associated with the display. This will be 1 if enabled and is 0 if disabled or not supported."),
    Column("connection_type", TEXT, "The connection type associated with the display."),
    Column("display_type", TEXT, "The type of display."),
    Column("main", INTEGER, "If the display is the main display."),
    Column("mirror", INTEGER, "If the display is mirrored or not. This field is 1 if mirrored and 0 if not mirrored."),
    Column("online", INTEGER, "The online status of the display. This field is 1 if the display is online and 0 if it is offline."),
    Column("rotation", TEXT, "The orientation of the display."),
])
implementation("connected_displays@genConnectedDisplays")

```

---

```

#pragma clang diagnostic pop

cleanup = [&]() {
    CFRelease((__bridge CTypeRef)document);
    CFBundleUnloadExecutable(bundle);
    CFRelease(bundle);
};

NSDictionary* report = [[[document reportForDataType:@"SPDisplaysDataType"]
    objectForKey:@"_items"] lastObject];
NSArray* data = [report valueForKeyPath:@"spdisplays_ndrvs"];

for (NSString* obj in data) {
    Row r;

    if (data == nullptr) {
        return results;
    }

    if ([obj valueForKey:@"_name"]) {
        r["name"] = TEXT([[obj valueForKey:@"_name"] UTF8String]);
    }

    if ([obj valueForKey:@"_spdisplays_display-product-id"]) {
        r["product_id"] = TEXT(
            [[obj valueForKey:@"_spdisplays_display-product-id"] UTF8String]);
    }

    if ([obj valueForKey:@"_spdisplays_display-serial-number"]) {
        r["serial_number"] = TEXT([[obj
            valueForKey:@"_spdisplays_display-serial-number"] UTF8String]);
    }
}

```

Caitlin Cabrera



I'm working on setting up an integration test and running  
`cmake --build . --target test` gives the following:  
``make: *** No rule to make target test'. Stop. File has been  
added to CMakeLists.txt Running from the build dir. Any  
suggestions?`

---

Stefano Bonicatti



hum so, It's a bit weird that it has tried to reconfigure the  
compiler; I would delete the `CMakeCache.txt` file in the  
build folder, then configure again, then build all (since tests  
do not have a common target to build them, the `test`  
target only runs them), and try again.

---

Caitlin Cabrera



That worked. Thank you!



## What?

This table adds a `connected_displays` virtual table which produces multiple rows (depending on the number of displays) giving useful information about a Macbook's internal battery.

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name	product_id	serial_number	vendor_id	display_week	display_year	display_id	pixels	resolution	ambient_brightness	connection_type	display_type	main	mirror	online	rotation
LC32G7xT	785a	43583645	4c2d	13	2021	2	2560 x 1440	2560 x 1440 @ 120.00Hz	0	2560 x 1440 @ 120.00Hz	spdisplays_built-in-liquid-retina-xdr	1	0	1	1
Color LCD	a050	fd626d62	610	0	0	1	3456 x 2234	1728 x 1117 @ 120.00Hz	0	1728 x 1117 @ 120.00Hz		0	0	1	0
Hp Vh248A	3499	1010101	220e	0	0	32	1080 x 1920	1080 x 1920 @ 60.00Hz	0	1080 x 1920 @ 60.00Hz		0	0	1	1
Hp Vh248A	3499	1010101	220e	0	0	33	1080 x 1920	1080 x 1920 @ 60.00Hz	0	1080 x 1920 @ 60.00Hz		0	0	1	1

osquery>

## Why?

This is meant to resolve [#7486](#). This table provides helpful insights into display age, serial numbers, and resolution.



1



1

# Easy, right?



**Add `connected_displays` table on macOS** ✓

macOS

virtual tables

#7946 by cacab was merged on May 3 • Approved

---



## Open source projects

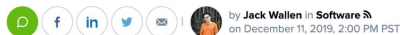
- Managing
- Approaching as a new or first time contributor
- Caveat: there are many types of different types of open source projects
  - Vendor driven
  - Sole proprietor passion project
  - Heavily community based
  - Etc.



## Managing and contributing

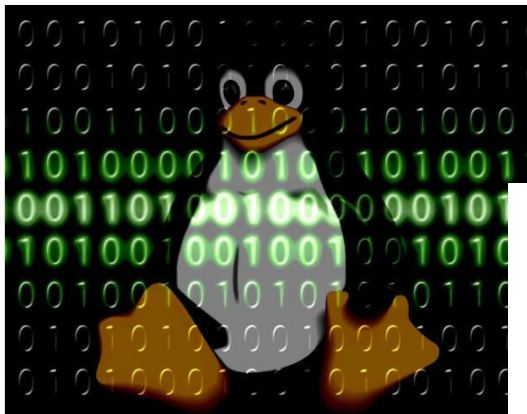
- What incentivises developers, managers and contributors?
- How can we best align our projects' mission to serve our use case?
- How can we best encourage the people who are current community members?

## 8 of the worst open source innovations of the decade



by Jack Wallen in Software on December 11, 2019, 2:00 PM PST

Open source innovations aren't all successes. Jack Wallen shares his picks for the biggest open source failures of the 2010s.



### How I Wasted Two Years In Opensource Development

The story of the side-project failure that let me grow up



Daniele Fontani · Follow

Published in Towards Data Science · 6 min read · Apr 8, 2021



288



5



I'm an open-source love. I started developing an open-source side project in 2006 and that was the secret that boosts my career. Thanks to the experiments that I have made during this trip I'm now a better developer and I give back something to the community — almost I hope.

I wrote about my vision of opensource as a driver for companies and developers growth [here](#) but that is another story 😊

In this article, I want to talk about my experience since 2018 on an open-source low-code platform called [RawCms](#).

### The most forgotten open source projects

#### Unity

While the Unity 3D engine is triumphing in the video game world, its "relative" **Unity** (Canonical's graphical shell for GNOME) is now almost disappeared in action. It was a great success when Ubuntu implemented it, most users liked it, however, now they have changed it to GNOME and few seem to miss it.

#### Mir

Another of Canonical's jewels that ended up failing miserably, along with Unity, Ubuntu Touch, Ubuntu Edge, etc. Although it is still in development, the truth is that the adoption of this **graphic server** it's void. Most distros still use X or Wayland.

#### Ubuntu Touch and FirefoxOS

Canonical also wanted to reach mobile devices with its **Ubuntu Touch**, and although it is a system that opens possibilities compared to Android, and that is still under development by UBports, the truth is that few have launched to adopt it. Their list of compatible devices is very limited.

**Firefox OS** it was also one of those wonders that seemed like they would go a long way. In this case from Mozilla, and also with the intention of conquering the mobile sector. However, now it is also conspicuous by its absence ...

#### Diaspora

**La Diaspora social network** It was intended to be a success, with a distributed system, with groups of independently owned nodes operating together, and with the idea of improving privacy and avoiding the control of large corporations. However, that good idea turned into a chimera and few remember it anymore.



## Why do open source projects fail?

- The most popular reasons for the failure of an open source project are lack of time, lack of interest, competition, and outdated/obsolete technologies ([Coelho, 2017](#))
- There are a lot of elements that can make or break a project
- Each of these elements share a common thread



# Community



# Open source communities

- Collaboration and culture
- Technology and innovation
- Processes and vision





## Open source communities: collaboration and culture

- The “people” piece
- Maintaining relationships with existing developers as well as a focus on creating new relationships with new developers
- Venues for discussion
  - Garnering feedback and discussion with developers/ core team
  - The culture associated with these venues
- Code of Conduct
- Office hours (held by core team)
- Active communities with an overall positive culture



## Open source communities: technology and innovation

- Strong, well-defined use-case
- Strong product direction (from core team)
- Emphasis on quality
- Processes in place
  - Tests, linters, straight-forward pull request process
  - CI/CD pipeline



## Open source communities: processes and vision

- Core team
- Documentation
  - Blogs (official and unofficial)
- License agreements such as Contributor License Agreements (CLAs)

**How can we implement these  
practices as maintainers  
and/or contributors?**



## Checklist (for maintainers)

- Core team with clear roles and responsibilities
  - Approving pull requests, driving product direction and maintaining a standard of quality
- Code of conduct to ensure interactions within your community are governed by a set of standards and promote inclusivity
- Clear process for CLAs (CI/CD pipeline or PR)
  - Should be easy to find, understand, and complete



## Checklist (for maintainers)

- Strong documentation, tutorials
  - Usually the first thing potential contributors see
- Formal communities- also listed in the documentation, usually moderated and managed by the core team
- Transparent process for reviewing contributions
- Office hours



## Guidelines (for contributors)

- Lurk first
- Start small
- If you have a question, search the community first
- If you can't find an answer to your question, ask!
- Lean on your coworkers and the community
- Advocate for yourself
- Is there a code of conduct? How is it written?
- Still unsure of where to start? Ask!



## Summary

- Was able to get assistance and feedback from core team, community members (collaboration and culture)
- Added a new feature to the project (technology and innovation)
- Issue the pull request resolved drove the projects main goals (processes and vision)





## Wrapping up

- If your team utilizes a piece of open source software, create a culture that encourages contribution
- Allow engineers time to devote to projects and communities they are passionate about
- Encourage mentorship and a culture of teaching and learning

**Open source is for everyone**



## Thank you / where you can find me

- [caitlincabrera.com](https://caitlincabrera.com)
- [github.com/cacab](https://github.com/cacab)
- [linkedin.com/in/caitlincabrera](https://linkedin.com/in/caitlincabrera)
- [twitter.com/cc\\_codes](https://twitter.com/cc_codes)
- [ruby.social/@cc\\_codes](https://ruby.social/@cc_codes)
- [@cacab.bsky.social](https://bsky.social/@cacab)



# Sources

- **Why you should contribute to open source**
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  - [https://greatergood.berkeley.edu/article/item/how diversity makes us smarter](https://greatergood.berkeley.edu/article/item/how_diversity_makes_us_smarter)
  - <https://cointelegraph.com/news/the-importance-of-open-source-in-computer-science-and-software-development>
- **Failed open source projects / why open source projects fail**
  - <https://www.techrepublic.com/article/8-of-the-worst-open-source-innovations-of-the-decade/>
  - <https://arxiv.org/pdf/1707.02327.pdf>
  - <https://www.linuxadictos.com/en/los-8-peores-proyectos-de-codigo-abierto.html>
  - <https://en.wikipedia.org/wiki/OpenOffice.org>
- **Guidelines for open source participation and contribution**
  - <https://www.linuxfoundation.org/resources/open-source-guides/participating-in-open-source-communities>



## Sources

- Writing an osquery table
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- How to write documentation
  - <https://open.spotify.com/episode/28jv8wYRC61IMXP1uJ02TH?si=2bfa65b611804951>
- How osquery works
  - <https://www.kolide.com/blog/osquery-under-the-hood>
- Writing and evaluating CoC's
  - <https://www.palantir.net/blog/secret-sauce-podcast-ep-10-why-codes-conduct-matter>
  - <https://confcodeofconduct.com/>
- MacOS system profiler
  - [https://apple.fandom.com/wiki/Apple\\_System\\_Profiler#:~:text=Apple%20System%20Profiler%20is%20a,on%20which%20it%20is%20running](https://apple.fandom.com/wiki/Apple_System_Profiler#:~:text=Apple%20System%20Profiler%20is%20a,on%20which%20it%20is%20running)
- Honest Security Blog
  - <https://honest.security/>