

# Report on Burnout in Open Source Software

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This report explores the phenomenon of burnout in the open source software (OSS) community, and what could be done to effectively address it.

In Section 1, I draw on the psychological literature to describe what burnout is. In section 2, I outline the methodology used in the research that informed this report. In section 3, I examine evidence of burnout among OSS engineers, concluding burnout is a problem in OSS.

In section 4, I describe the causes of burnout among OSS developers, drawing on academic literature and OSS community discussions. I identify 6 causes: difficulty getting paid, workload and time, maintenance work as unrewarding, toxic communities, hyper-responsibility and pressure to prove oneself.

In section 5, I consider what could be done to reduce burnout in OSS, outlining 4 directions: pay OSS engineers, foster a culture of recognition and respect, grow the community and advocate for maintainers.

I conclude by emphasising the real harm that failing to address burnout in OSS poses, both to OSS engineers, and to those of us—and this constitutes an *the vast majority of us*—that routinely rely on open source software.

## 1. What is Burnout?

Burnout is a syndrome typically associated with work. It has three components united by one common thread: an exhaustion of physical and mental energy (Maslach et al., 2001; Schaufeli et al., 2023).

1. **Motivational component:** an intolerance of effort. Burnout is associated with fatigue and an inability to motivate oneself to attend to and act on things that need doing. This makes it difficult to engage with and effectively manage work.
2. **Affective component:** feeling emotionally drained and a reduced ability to regulate emotions—a person with burnout may be easily frustrated, irritated or emotionally overwhelmed.

3. **Cognitive component:** a change in how one thinks about work. For example, mentally distancing oneself from it and expressing negativity and cynicism towards it.

Some working conditions are more likely to lead to burnout than others. The risk of burnout is thought to increase with **job demandingness** (e.g, excessive workload, difficulty of work and conflict) and decrease with **job resources** (e.g., support from colleagues or bosses, fair pay, opportunities for learning and development, rewarding work and autonomy over how work gets done) (Demerouti et al., 2001).

## 2. Method

To inform and guide this report, I undertook two pieces of original research.

1. **Rapid Literature Review:** I conducted a rapid review of the academic literature on burnout among software engineers. I did not limit this to OSS engineers, as there were few articles looking at burnout in OSS specifically. Articles were discovered using a keywords database search and by checking the reference lists of discovered literature. I used the keywords ‘open source, software, maintainer, burnout’, and searched in the databases PsychInfo and ExLibris DiscoverEd. This returned 27 articles.
2. **Rapid Thematic Analysis:** To supplement the lack of research on burnout in OSS engineers, I also conducted a rapid thematic analysis of non academic materials discussing burnout in OSS, created by people within the OSS community, reporting on the OSS community, or with an interest in OSS. Materials were discovered by keywords search, following links in discovered materials and following recommendations by open source community members. As in the rapid literature review, I used the keywords ‘open source, software, maintainer, burnout’. The search was conducted using Google. After 45 items I judged that I had achieved adequate data saturation (i.e., it seemed no new themes were emerging) and stopped searching. The breakdown of materials analysed by type was as follows:

Material Type	Quantity
Original articles by OSS engineers	18
Conference talks by OSS engineers	3
Video and podcast interviews with OSS engineers	3
Articles published by OSS advocacy bodies (e.g., Tidelift)	9
Articles published by tech news sites	4
Forum and email discussion by OSS community members	4
Guides for OSS engineers	1
Reports on burnout in OSS	3

Thematic analysis entails a close reading of materials to identify common themes and subthemes. The causes of burnout identified in section 4 are informed by the themes that emerged from the rapid thematic analysis. Illustrative quotes pertaining to each theme and insights from the rapid review of the academic literature are interwoven throughout.

A full list of articles discovered in the rapid literature review is presented in appendix A. The full table of themes and subthemes with illustrative quotes, plus a list of all the materials included in the rapid thematic analysis, sorted by type, is presented in appendix B.

### 3. Evidence of Burnout in OSS

Burnout is a problem in the OSS community. This was noted both in the academic literature (Raman et al., 2020) and by OSS community members.

OSS community discussion showed that OSS engineers were experiencing the three components of burnout. Motivation was affected, with OSS engineers describing a loss of joy in coding, avoiding work and even eventually quitting OSS entirely.

*‘I don’t feel like working on [it] anymore. It went from being one of the most fun experiences in my life to making me feel terrible everyday.’—Kyle, n.d.*

OSS engineers showed a change in affect, describing a shift from love for the OSS community to anger and ruder and more perfunctory responses to OSS users. Feelings of guilt, low self-worth and depressed mood were also cited.

*‘I’m tired and I’m angry, and I’ve done a reality check and found reality wanting.’—MacIver, 2015*

Finally, OSS engineers exhibited the cognitive component of burnout. They described how they had become negative and cynical about open source. There was a culture of using dark humour as a means of coping (e.g., the ‘three F’s of open source’: fix it, fork it, fuck off). Some also had a sense of directionlessness and loss of meaning in their OSS work.

*‘At a certain point I had to change what my value system was to accommodate my increasing disconnect from the work that I was doing and I somehow made it about like, “if I can just do this more and make it better this will help me get a higher paying job and then I’ll have more money and then I can retire and not work anymore” ... I can’t even really summon why I thought that that was a good plan but it seemed really good at the time’—Kaplan-Moss, 2015.*

## 4. Causes of Burnout in OSS

From my rapid review of the literature and analysis of OSS community resources, I identified 6 factors that play an important role in burnout among OSS engineers:

1. Difficulty getting paid
2. Workload and time
3. Maintenance work as unrewarding
4. Toxic communities
5. Hyper-responsibility
6. Pressure to prove oneself

Troublingly, these factors also appear to be inter-related and mutually reinforcing. For example, difficulty getting paid for OSS can mean having to work a concurrent full-time job, increasing one’s workload. I will now discuss each factor in turn and highlight where they reinforce each other.

### 4.1. Difficulty getting paid

Difficulty getting paid for OSS work was often cited as a cause of burnout in OSS community discussion. The reasons for this were twofold.

Firstly, perception of a lack of fair reward for work is associated with burnout. In the academic literature, this relationship has been observed specifically in IT professionals, including software engineers (Shih et al., 2013). In OSS community discussion, the fact

that so many engineers are scarcely if ever financially rewarded for their work was often perceived as unfair. Some OSS engineers characterised their work as ‘free labour’. Others felt exploited by the proprietary software companies that profit from their code, rely on them to maintain it for free and give nothing in return. Some were additionally worried about ‘self-exploitation’ (i.e., the compulsion to do free labour in OSS to build a portfolio and improve career prospects).

Despite the fact that the software industry is enormously profitable, getting paid for OSS was generally considered to be an unrealistic prospect for the majority of OSS engineers—one that requires jumping through hoops, compromising on the kind of work one would like to do, and sheer luck. Some OSS engineers saw this as an injustice indicative of market failure.

*‘Unfortunately, many big companies take and take without giving back in proportion to the value they receive, and these problems aren’t just fixing themselves under capitalism. If you put purely economics first and aren’t conscious of the things that have enabled your success, then you end up just hurtling towards darkness.’—Grabanski, 2019*

Secondly, high workload is predictive of burnout among software engineers (Kuuttila et al., 2018; Moore, 2000; Sarker et al., 2019; Shih et al., 2013; Sonnentag et al., 1994; Van Oorschot et al., 2018). Given the difficulty of getting paid for OSS work, engineers without independent means described having to take a concurrent full-time job, essentially doing a ‘double-shift’ to support their work in OSS.

*‘I wasn’t getting paid to do the work that I felt like I had to do, and I had to do the work that I was getting paid to do because like mortgages and bills and car payments and that sort of stuff, so I had to do like double work, one out of a feeling of obligation and one out of a feeling of like, we live in a capitalist society and I need money’—Kaplan-Moss, 2015*

This led to a lifestyle of long shifts and all nighters to cope with this increased workload, affecting OSS engineers’ physical and mental health. It also reduced the time they could spend with family and friends and limited their capacity for personal relationships. Indeed, loneliness is recognised as a significant challenge in the OSS community, (Pagano, 2014), and is itself a risk factor for burnout (Bryan et al., 2024).

Some OSS engineers expressed the desire to be paid to do OSS work as a means of freeing up time. Perhaps given the perceived difficulty of getting paid for OSS work discussed above, others saw quitting OSS as the only solution.

*‘If and when we decide to start having kids, I will probably quit open source for good. I just can’t see how I’ll be able to make the time for both raising a family and doing open source.’—Lawson, 2017*

Despite the widespread recognition that not being paid for OSS work contributes to burnout, requesting payment for OSS seemed somewhat taboo in the OSS community. Most conversation around the importance of paying OSS engineers was led by advocacy bodies (e.g., [Tidelift](#) and [Open Collective](#)) rather than OSS engineers themselves. Identity, community norms and values motivate participation in OSS (Krishnamurthy, 2006). Perhaps expressing a desire to be paid for OSS challenges engineers’ identity as OSS community members, goes against OSS community norms, and grates with their social and political beliefs about the importance of open source. Indeed, one influential community member wrote polemically on the dangers of introducing payment for OSS (Hansson, 2021). Silence around working conditions is a risk factor for burnout (Lainidi et al., 2025), so the taboo around payment for open source may *itself* contribute to the problem of burnout in OSS.

## 4.2. Workload and time

The stress caused by a high workload and associated lack of free time is a significant risk factor for burnout. The workload for OSS engineers was notably high for two reasons.

Firstly, as discussed in section 4.1, many OSS engineers are obligated to undertake additional work alongside their OSS work in order to make a living, tying high workload as cause of burnout to difficulty getting paid for OSS.

Secondly, OSS work on its own can come with a very high workload. Maintainers of popular packages described being swamped with requests and emails from users for support, fixes and features. This was compounded by the fact that many were the sole maintainer on a project, and found it difficult to attract new contributors capable of high quality work. ‘Email overload’ has been singled out specifically in the academic literature as playing a role in burnout (Reinke and Chamorro-Premuzic, 2014).

*‘I was doing nights and weekends, it was wrecking my health and I was just devastated, so after a while, enough issue follow-ups, like, ‘is this maintained?’, ‘Are you gonna fix my issue?’ I had to say that I had to give it up.’*

### 4.3. Maintenance work as unrewarding

Work is less likely to lead to burnout if it is intrinsically motivating, i.e., inherently rewarding (Gaines and Jermier, 1983). Software engineers have been shown to be highly intrinsically motivated (Rubin and Hernandez, 1988), and a love of the creative process of coding was clearly apparent in OSS community discussion.

However, OSS engineers noted that software maintenance is a very different kind of work to software development, requiring less creative coding, more repetition and drudgery, and more communication and people management skills—skills not all OSS engineers possess or enjoy exercising.

*‘I would rather be remembered as a bad artist than a good programmer. ... now I’m asked more and more... to express myself less and to maintain the project more.’—*

Asay, 2020

Echoing concerns about the high workload associated with software maintenance, maintenance work was often described as taking up time engineers would rather spend doing coding that they actually enjoyed and could learn something from. Software engineers are at greater risk of burnout when they have a lack of autonomy over their work (i.e., the ability to choose what to work on, when and how) (Shih et al., 2013), and a lack of opportunity to learn (Trinkenreich, Santos, and Stol, 2024).

For work that is not inherently rewarding, an imbalance of effort put in to extrinsic reward received in return is a noted risk factor for burnout (Van Vegchel et al., 2005). As noted in section 4.1, most OSS maintainers are not financially rewarded for their work. Moreover, as will be discussed further in section 4.4, maintenance work can feel thankless and emotionally unrewarding due to entitled and uncivil behaviour in the OSS userbase.

In sum, maintenance work likely comes with a higher risk of burnout than software development, as OSS engineers tend to find it less inherently rewarding, and it is insufficiently externally rewarded to compensate for this. The more time OSS engineers feel obliged to spend doing maintenance work instead of engaging in creative coding, the greater the risk of burnout. This is compounded by the fact that many feel obligated to spend the remaining time available to them doing additional paid work to supplement their OSS work, rather than working on creative coding projects of their choosing.

## 4.4. Toxic communities

Positive, supportive relationships with colleagues and feelings of belonging tend to decrease the risk of burnout, while difficult communication and conflict tend to increase it. This relationship has been observed among software engineers and people working in OSS (Rutner et al., 2011; Shih et al., 2013; Sonnentag et al., 1994; Trinkenreich, Gerosa, et al., 2024).

Unfortunately, hostility and toxic behaviour is a significant issue in the OSS community (Cohen, 2021). In a sample of non-technical emails from the Linux kernel mailing list, a third were uncivil (Ferreira et al., 2021). Sentiment analyses have estimated the rate of toxic comments in GitHub issues at .07-1.5% (Cheriyen et al., 2021; Raman et al., 2020), and that toxicity is higher in OSS than corporate software. This is backed up by OSS community discussion, in which OSS engineers frequently reference angry responses from users demanding features and bug fixes as a factor in their burning out.

OSS engineers often felt users were acting entitled, and that their work was underappreciated and thankless. Good work was thought to go unnoticed, while mistakes incited anger or even public shaming. Several pointed out that users probably do not realise projects are often maintained by a single unpaid engineer, and felt they might act differently if they knew. Others noted that demands for features and fixes often came from proprietary software companies, leaving them feeling exploited by those with the capacity to pay them for their work.

*‘I just gave up, because what’s the point when all you get is constant issues? You give and give and give, and people just take and take and take.’—Grabanski, 2019*

Emotional dissonance (i.e., having to act differently towards people than you actually feel) is associated with burnout. After a while, it seemed some OSS engineers could no longer keep up the pretense, describing become ruder to users the more burnt out they felt. This suggests the existence of a positive feedback loop in which rudeness from users begets burnout in OSS engineers, which begets rudeness from engineers, which begets further rudeness from users.

*‘I started identifying [my burnout] as other people’s problem, “if only these these idiots would stop submitting bad code that I would have to review”, “if only these these jerks would stop asking for help”, like, it wasn’t my fault that that I couldn’t muster the energy to work on this, it was all these these stupid people out there.’—Kaplan-Moss, 2015*

The combination of great expectations and little recognition, respect or reward from the OSS community contributes to the effort-reward imbalance associated with maintenance work that puts OSS maintainers at risk of burnout.

#### 4.5. Hyper-responsibility

While intrinsically motivating work is generally associated with a decreased risk of burnout, it is *more* likely to lead to burnout under conditions of high stress, since when one really cares to get the job done well, one might willfully miss signals that they are overstretched and need to slow down (Sonnentag et al., 1994).

OSS engineers are not only highly intrinsically motivated by the joy of coding, they are also motivated by a desire to benefit others, their membership in the OSS community, and social and political beliefs about the value of open source (Hertel et al., 2003). Accordingly, OSS engineers described having an enormous sense of responsibility or even obligation to be good stewards of their projects: on behalf of its users, the community, and the principal of open source itself. This puts engineers at greater risk of burnout, as they are more likely to persist with work beyond a point that is healthy when under stress (for example, from high workloads discussed in 4.2, or maltreatment by the community discussed in 4.4).

Engineers often described their software gaining popularity as a curse disguised as a blessing, owing to the extra responsibility that comes with having so many people depend on them.

*‘My open source success went from a major blessing to a great curse. It was one of the darkest times in my life. Something that started out with such hope and light ended up just being about getting thousands of emails. People told me their whole life stories and how it’s all been leading up to this one feature they really need me to add.’—Grabanski, 2019*

Additionally, many felt *solely* responsible for their project, and that it would ‘die’ without their work, since it is so hard to attract new quality contributors.

*‘I’m the only person holding this together, if I leave who will do this?’—Rogers, 2017*

The responsibility for often singlehandedly ensuring their software is compliant with security regulations and legislation was also a noted source of stress for OSS maintainers. This can be worsened by the form that security legislation takes, for example, if it insufficiently protecting OSS engineers from liability for security issues relating to their code.

## 4.6. Pressure to prove oneself

External pressures can make work more stressful, increasing the risk of burnout (Sonnen-  
tag et al., 1994). OSS engineers described feeling pressure to constantly prove themselves,  
both to the community and to prospective employers to whom their OSS work could serve  
as a portfolio.

They felt pressure to constantly skill-up to keep pace with an increasingly complex  
software development landscape. The high learning requirements of software develop-  
ment are a noted risk factor for burnout (Sonnen-  
tag et al., 1994). They felt pressure to  
show their worth as an engineer and to the OSS community through their contributions,  
sometimes calling out GitHub for gamifying work in OSS.

| *‘It’s all in the numbers — followers, contributions, comments, stars.’—Szczur, 2015*

They also felt pressure to stay beyond the point of burnout to maintain the reputation  
they had built for themselves.

| *‘it becomes your identity, you rub shoulders with really influential people in the in-  
dustry, and I don’t want to get kicked out of the github organisation so I gotta  
keep going—that’s how bad it gets ... one day I was like, ‘I can’t do this anymore’—  
Stacoviak and Santo, 2018*

The pressure to prove oneself was tied up with OSS engineers’ sense of self-worth  
and identity, making it extraordinarily difficult to take a step back from work when  
overburdened. As such, it may be a particularly pernicious source of burnout.

## 5. Recommendations

There is an upside to the causes of burnout in OSS being inter-related and mutually rein-  
forcing: addressing burnout on one front could go some way towards addressing it on  
others, leading to improvements that cascade throughout the system.

Having explored both the academic literature and OSS community discussion on  
burnout among OSS engineers, I propose 4 directions that could be pursued to address  
the problem of burnout in OSS. Each undoubtedly comes with its own unique set of  
challenges and could be realised in multiple ways; for the purposes of this report, I keep  
my suggestions broad and am not dictatorial about the best way to implement them in  
practice.

In recognition of the fact that the problem of burnout in OSS is structural and sys-

temic, my recommendations will focus on change at the system level, not on how individual OSS engineers can change their behaviour to avoid burning out.

1. **Pay OSS engineers:** Financially compensating OSS engineers could reduce the risk of burnout by decreasing their perception that they are being unfairly rewarded and altering the effort-reward imbalance associated with maintenance work.

It could reduce burnout by eliminating the necessity for OSS engineers to have a concurrent full-time job to make a living, lessening their workload and freeing up time for them to spend with friends, family and working on projects they love.

It could reduce burnout by both making it possible for more people to participate in open source and motivating more people to participate in open source. This would create a wider pool of potential contributors for OSS maintainers to share their workload and responsibilities with, granting them more free time and reducing pressure on them.

Finally, if OSS engineers were paid for their work at they do it, it could reduce burnout by decreasing the pressure they feel to continuously prove themselves and remain competitive in the hope of getting work that pays in the future.

It is, however, important to note that the form payment for OSS work takes would ideally not compromise OSS engineers' autonomy over their work (i.e., their ability to choose what to work on, when and how), as lower autonomy is associated with burnout in software engineers (Shih et al., 2013, Whitacre, 2013).

2. **Foster a culture of recognition and respect:** A shift in the OSS community from entitlement and toxicity towards a culture of recognition and respect would likely go a long way in reducing OSS engineer burnout. While this is easier said than done, there are some promising avenues one could pursue.

Firstly, community leaders—people the community looks up to—can help shape group identity, norms, values and behaviours (Steffens, Haslam, Reicher, et al., 2014). Moreover, groups with leaders who successfully foster a sense of shared identity are less prone to burnout (Steffens, Haslam, Kerschreiter, et al., 2014; van Dick et al., 2021). This suggests respected OSS community members could play an important role in establishing norms of polite, helpful and respectful communication in OSS communities. Promisingly, some respected community members are already beginning to engage in this kind of positive identity leadership (Czaplicki, 2018; Mastery Learning, 2024).

Secondly, raising awareness about the nature of OSS work and managing user ex-

expectations in light of it could help reduce toxic behaviour. Several OSS community members suggested GitHub could contribute to user education and expectation management—for example, by highlighting when a project is maintained by one person their free time (Sapegin, 2023).

Thirdly, practical measures to address how we act towards OSS engineers could be supplemented by theoretical work that considers what we owe them ethically. This could entail framing OSS as a gift for which gratitude or future reciprocation is appropriate (Whitacre, 2025), or applying ethical principles such as the ethic of care to OSS maintenance (Harbuz, 2024; Maintainers et al., 2021).

Finally, as burnout in OSS decreases, community toxicity is likely to decrease too, as OSS engineers will have more cognitive and emotional bandwidth to respond to users helpfully and politely.

3. **Grow the community:** Encouraging more people to participate in or remain in open source could help reduce burnout, as there would be more people to share in the workload and the responsibility for existing projects

As noted in suggestion 1, this could be achieved by paying people who work in open source. People may also be more inclined to join or remain in OSS if community toxicity were decreased (Jensen et al., 2011; Soelton et al., 2020; Steinmacher et al., 2013) as discussed in suggestion 2.

It is also possible that access to education needs to be expanded in order that more people are able to gain the skills necessary to make quality contributions to OSS (Rogers, 2017). This could include both programming skills in general, and skills that are particularly relevant to open source, such as collaborative coding and getting orientated with new codebases.

4. **Advocate for maintainers:** Advocacy work on behalf of OSS engineers could provide an avenue for addressing the issues that lead to burnout.

As noted in suggestion 2, organisations like GitHub could support maintainers by using their position of power in the OSS ecosystem to educate people about the realities of working OSS and manage their expectations. GitHub also has the power to advocate by though its design, by including features that empower and protect OSS engineers and removing features that put them under increased pressure. Indeed, OSS engineers seem to be more positive when GitHub implements structural changes that address the causes of burnout—like the inclusion of triage and maintenance roles, or the ability to block users—than when it promotes individual changes

maintainers themselves can make to avoid burning out (Sapegin, 2023; swyx, n.d.).

Advocates could represent the interests of OSS engineers when security legislation is being drawn up, to make sure they are not held disproportionately liable for security issues.

Encouragingly, there are already various bodies advocating for payment for OSS engineers, as outlined in suggestion 1, (e.g., [thanks.dev](#), [Open Source Pledge](#), [Open Source Endowment](#), [Github Sponsors](#), [Open Collective](#), [Tidelift](#) and [Liberapay](#)).

#### A NOTE ON DIVERSITY

A noted limitation of the methodology of this report is that the majority of OSS community discourse analysed in the rapid literature review was authored by men, and people who are ethnically white. While this may be representative of the field—gender and racial diversity is lower in OSS than in programming as a whole (Finley, 2017)—it is important to include the experiences of marginalised groups if we are to understand and address the barriers to participation that uphold this disparity.

Burnout is likely to affect marginalised groups (e.g. women, ethnic minorities, the working class and LGBT+ people) differently. For every cause of burnout, it is plausible they are at greater risk. They may be less likely to have independent means and therefore more reliant on a second job to support their OSS. They may be expected to take on extra labour such as childcare and domestic work, placing greater demands on their time. They may experience greater mistreatment by the community on the basis of their identity—indeed, harassment of women was a noted issue in OSS community discussion (Kaplan-Moss, 2015). Against this backdrop, they may feel a greater pressure to prove themselves to the OSS community, have a harder time saying no to additional work, and be uncomfortable speaking out about their working conditions.

Paying OSS engineers and fostering a culture of respect and recognition may be especially important for improving burnout among marginalised groups. Efforts to grow the community and advocate for maintainers should be sensitive to the additional barriers the marginalised face. Happily, some work is already being done in this direction, e.g., [Outreachy](#), who provide internships to under-represented groups in OSS.

## 6. Conclusion

Failing to address the problem of burnout in OSS poses the possibility of real harm to OSS engineers. Burnout is associated with worse physical and mental health among software engineers (Graziotin et al., 2017; Singh and Suar, 2013). By affecting emotional regulation, it can negatively impact their relationships. By increasing the chances of quitting, it can shape the direction of their lives (Trinkenreich, Santos, and Stol, 2024; Van Oorschot et al., 2018). Burnout is associated with a decline in quality of work and, in OSS, this can lead to potentially devastating software security issues that put engineers at risk of ruinous legal action (O’Neill, 2021; Saarinen, 2018). Burnout is associated with quitting, leaving potentially millions of users that rely on a given piece of OSS software unsupported if no one else is able to take up the mantle. The consequences of not acting to address OSS engineer burnout are both ethically, and literally, costly.

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## Appendix A: Rapid Literature Review Materials

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## Appendix B: Rapid Thematic Analysis of OSS Community Discussion of Burnout

Themes and subthemes	Illustrative quotes	Sources
<p>Payment</p> <ul style="list-style-type: none"> <li>● unrealistic for most people to rely on donations/sponsors</li> <li>● lack of money unsustainable, leads to having to give up on 'dream' OS projects, to be realistic</li> <li>● some desire to maintain as day job if paid, could only keep going if paid</li> </ul>	<p><i>'when asked "What do you dislike about being an open source maintainer?" the response, "Not financially compensated enough/at all for my work" was the second most selected reason.'</i></p> <p><i>"The next most common reason for quitting or considering quitting included not getting paid enough to make it worthwhile, which rose from 32% to 38% of maintainers citing it in this year's survey versus our previous results.'</i></p> <p><i>'This isn't a lifestyle that's available to most people'</i></p> <p><i>'This makes any attempt to get money for tooling such an uphill struggle that it's really not worth the effort. Plans which are predicated on changing the world before anyone will pay you any money are decidedly bad plans.'</i></p> <p><i>'I feel that the main goal of the article (github maintaining balance for open source maintainers) is to convince maintainers to keep doing what they are doing for as long as possible, meaning to keep working for free. The article briefly mentions sponsoring but for most maintainers it's unrealistic to rely on sponsoring or donations.'</i></p> <p><i>'At some point you need sustainability, to either hire people to help or to enable you to do open source full time. If there had been something like Open Collective back then maybe I could have kept going, but I had to find other avenues.'</i></p>	<p><a href="#">Sonar (citing Tidelift report)</a></p> <p><a href="#">Sonar (citing Tidelift report)</a></p> <p><a href="#">Remy Sharpe</a></p> <p><a href="#">David R. MacIver</a></p> <p><a href="#">Artem Sapegin</a></p> <p><a href="#">Open Collective, (quoting Marc Grabanski, founder of Frontend Masters)</a></p>

<ul style="list-style-type: none"> <li>uncompensated, free labour, references to exploitation by the market, software companies, market failure</li> </ul>	<p><i>'I was like, I'm going to keep this project, I'm going to keep working on this project. I fell in love with this project. But it didn't work out. I had to get a job.'</i></p> <p><i>'I think Hypothesis will make the world a better place, and I have a lot emotionally invested it ... but I've really lost all desire to continue giving away so much of my labour for free, so I won't.'</i></p> <p><i>'Somewhere in the last decade, the corporate world discovered the wealth of free labour embedded in FOSS and has capitalized heavily on it. It's no longer devs sharing code with each other. A lot of these panicked demands for more free labour come from users in corporate context. Either putting pressure on maintainers at the direct request of their boss... or trickle-down pressure to finish job X which needs open source project Y.'</i></p> <p><i>"I personally get regular demands for unpaid work (Discussions about payment for work always stall) by healthy high profit companies large and small for [my projects]. If I don't respond in a timely fashion, if I'm not willing to accept a crappy pull request, I/we get labeled a jerk. There is nothing like having core Python/PyPA maintainers working for Redhat [sic] demanding unpaid work while criticizing what they consider your project's shortcomings to ruin your day and diminish your belief in open source'</i></p> <p><i>'Open source was about sharing the code with fellow developers, learning new skills, and having fun. Somehow, it became for many a threat to their mental health, and an unpaid job. Multi-million corporations take advantage of thousands of developers working for free around the globe. And on top of this, we have a generation of</i></p>	<p><a href="#">Ashley Williams</a></p> <p><a href="#">David R. MacIver</a></p> <p><a href="#">Artem Sapegin</a></p> <p><a href="#">Nadia Eghbal, Roads and Bridges (quoting Daniel Roy Greenfeld)</a></p> <p><a href="#">Artem Sapegin</a></p>
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<ul style="list-style-type: none"> <li>• lack of compensation associated with burnout</li> </ul>	<p><i>developers who demand that open source maintainers fix their issues for free.</i></p> <p><i>'Yeah, I could probably eke out a living. Particularly if I was prepared to burn a lot of bridges and sacrifice most of what actually makes me want to work on it, but basically we've built an industry on free labour, and we've concluded that we'd much rather make people work for free in their spare time to produce adequate software and shame them into supporting it when somehow it surprisingly doesn't do exactly what we want than fairly compensate for their labour and get good software out of it.'</i></p> <p><i>'There's an immense amount of money. The problem is that it's not evenly distributed. So a lot of people don't usually think about this when they think about in a market, but the health of a market its whole purpose is to distribute resources efficiently. So when I look at how much money there is in open source, and then how much struggle there is, I can't help but think this is a failed market. So I think we need to stop using this term, "open source sustainability" and we need to start saying, this is a market failure'</i></p> <p><i>'the one that annoys me personally is Facebook buys Instagram for a billion dollars, and Instagram has not donated a cent or a line of code to Django or to python which they built that on top of. There is so much money around open source, there is not a company out there that is not directly more profitable because they're using free software and yet very very few people actually are getting paid for their work on open source.'</i></p> <p><i>'Open Source has created an economic value vacuum. Our society depends utterly on the common pool resource of Open Source</i></p>	<p><a href="#">David R. MacIver</a></p> <p><a href="#">Ashley Williams</a></p> <p><a href="#">Jacob Kaplan-Moss</a></p> <p><a href="#">Chad Whitacre</a></p>
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<ul style="list-style-type: none"> <li>• not paying maintainers is a security risk, paying maintainers as insurance</li> <li>• market failure</li> </ul>	<p><i>software, and this commons is severely underprovisioned. How do we know? The real indicator of the Open Source sustainability crisis as I define it is maintainer burnout.'</i></p> <p><i>'many also feel like it adds to their stress and that they are not financially compensated for the work'</i></p> <p><i>'There was a long time where I was doing open source almost more time than my full time job, and getting paid nothing. I just burnt out. I stopped writing and contributing to open source.'</i></p> <p><i>'I wasn't getting paid to do the work that I felt like I had to do, and I had to do the work that I was getting paid to do because like mortgages and bills and car payments and that sort of stuff, so I had to do like double work one out of a feeling of obligation and one out of a feeling of like, we live in a capitalist society and I need money'</i></p> <p><i>'In the Tidelift state of the open source maintainer survey, when asked to provide their reasons as to why they do not plan to meet industry standards, 38% of maintainers said they don't have the time, closely followed by 37% who said they weren't being paid to do it.'</i></p> <p><i>'I ultimately think--and this is maybe a little controversial--but I think most memberships in open source foundations are selling insurance.'</i></p> <p><i>'Unfortunately, many big companies take and take without giving back in proportion to the value they receive, and these problems aren't just fixing themselves under capitalism. If you put purely economics first and aren't conscious of the things that have enabled your success, then you end up just hurtling towards darkness.'</i></p> <p><i>'it's really important that an independent organization with clear thinking towards sustainability of the commons, like Open Collective,</i></p>	<p><a href="#">Chris Grams (citing Tidelift report)</a></p> <p><a href="#">Open Collective, (quoting Marc Grabanski, founder of Frontend Masters)</a></p> <p><a href="#">Jacob Kaplan-Moss</a></p> <p><a href="#">Sonar (citing Tidelift report)</a></p> <p><a href="#">Ashley Williams</a></p> <p><a href="#">Open Collective, (quoting Marc Grabanski, founder of Frontend Masters)</a></p>
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<ul style="list-style-type: none"> <li>• payment for OSS polarising topic</li> </ul>	<p><i>continues to exist and thrive. I don't want to live in a world where only one or two companies have a monopoly on where we get our goods, software and knowledge. If we don't fund smaller initiatives and decentralized software, that seems to be where we're headed.'</i></p> <p><i>'There is a polarizing reaction to money within an open source project, specifically with regards to paying for a contributor's time.'</i></p> <p><i>'The MIT license to a large extent is the anti-license. The utopia of socialized programs, one that embraces the lack of marginal cost for software goods. It's an explicit rejection of the strong-property rights approach taken by both Gates and Stallman at their respective ends of the libertarian spectrum. It's the language of giving without expecting anything in return. It's the language of sincere charity. A charity without strings attached, neither commercial nor reciprocal. With the risk of sounding sanctimonious, I read it as a pure projection of altruism'</i></p> <p><i>'I'm sharing details about my progress to hopefully popularize the model, and eventually help other maintainers adopt it, although I'm not quite ready to recommend anyone else drop everything to try this just yet.'</i></p>	<p><a href="#">Open Collective, (quoting Marc Grabanski, founder of Frontend Masters)</a></p> <p><a href="#">Pia Mancini</a></p> <p><a href="#">David Heinemeier Hansen</a></p> <p><a href="#">Filippo Valsorda</a></p>
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<p>Workload and time</p> <ul style="list-style-type: none"> <li>• unable to enjoy free time, time with family and friends, time to choose direction of own life</li> <li>• balancing time with other projects, time off now is more work later, desire to do OSS as day job</li> <li>• lack of sleep, all nighters, long shifts</li> </ul>	<p><i>‘The top reason why maintainers considered quitting was that other things in their life and work took priority (mentioned by 54% of respondents).’</i></p> <p><i>‘I’ve already told my partner that, if and when we decide to start having kids, I will probably quit open source for good. I just can’t see how I’ll be able to make the time for both raising a family and doing open source. I anticipate that ultimately this will be the solution to my problem: the nuclear option. I just hope it comes in a positive form, like starting a new chapter of my life, and not in a negative form, like unceremoniously burning out.’</i></p> <p><i>‘For me, my family comes first. Work and code isn’t even a distant second. It’s taken me many years of working silly hard and silly hours to work that out. Now that I understand that, life is better.’</i></p> <p><i>‘You’ve considered doing open source as your day job, but from talking with folks who actually do open source for a living, you know that this usually means permission to work on a specific open-source project as your day job. That doesn’t help you much, because you have dozens of projects across various domains, which are all vying for your time.’</i></p> <p><i>‘The team is working around the clock ... and my 6 a.m. to 4 a.m. (no, there is no typo in time) shift has just ended.’</i></p> <p><i>‘I was doing nights and weekends, it was wrecking my health and I was just devastated, so after a while, enough issue follow-ups, like, is this maintained? Are you gonna fix my issue? I had to say that I had to give it up.’</i></p>	<p><a href="#">Sonar (citing Tidelift report)</a></p> <p><a href="#">Nolan Lawson</a></p> <p><a href="#">Remy Sharpe</a></p> <p><a href="#">Nolan Lawson</a></p> <p><a href="#">Patrick Howell-O’Neill (quoting Volkan Yazici, Log4J member)</a></p> <p><a href="#">Ashley Williams</a></p>
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	<i>'the idea of a stealth job, when the work you're doing is masquerading as a hobby you don't realise you've added on suddenly 10, 15 20 hours of work a week on-top of your full-time job'</i>	<a href="#">Kathleen Danielson</a>
<p>Nature of work</p> <ul style="list-style-type: none"> <li>● maintaining different type of work to coding, different skill</li> <li>● responding to issues not creating</li> <li>● repetitive and needless</li> <li>● increasingly complex (JavaScript, tooling incompatibilities)</li> <li>● lack of creativity/complexity unrewarding</li> </ul>	<p><i>'people are hard, code is easy to write, code you have a right answer and you have a wrong answer. People, relationships are hard and being able to work with other developers and work with other maintainers ... can be very stressful'</i></p> <p><i>'I would rather be remembered as a bad artist than a good programmer. ... now I'm asked more and more... to express myself less and to maintain the project more.'</i></p> <p><i>'I have so much work to do and I just need to focus on one thing and I need to not code. I need to focus on maintaining the project rather than coding the project.... It burns you out really, really easily.'</i></p> <p><i>'When you do too much of what you don't like, work gets depressing very fast.'</i></p> <p><i>'I only hope to have more time because I really like to build open source software.'</i></p> <p><i>'Open source maintainer burnout is a huge problem for any developer community. If the community is truly fatigued by a new set of tools every couple of years, then they need to help us fight this problem. Because in the end, this kind of criticism only ends up hurting the community.'</i></p>	<p><a href="#">Linus Torvalds</a></p> <p><a href="#">Mat Asay (quoting Salvatore Sanfilipo, Redis founder)</a></p> <p><a href="#">Mat Asay (quoting Jim Bailey, OBS Project founder)</a></p> <p><a href="#">Artem Sapegin</a></p> <p><a href="#">Nolan Lawson</a></p> <p><a href="#">James Kyle</a></p>

<p>Treatment</p> <ul style="list-style-type: none"> <li>• by community: hostile, toxic, demanding, public shaming</li> <li>• expectation without recognition: mistakes noticed but no recognition for good work</li> <li>• people don't realise maintainers are human, their workload, that they are uncompensated</li> <li>• affects self-esteem/self-worth</li> <li>• need for educating the community about the nature of maintainers' work (GitHub called out)</li> <li>• burnt out OSS engineers in turn ruder to community</li> </ul>	<p><i>'[T]he angry response has been overwhelming. Every single day I'm reading someone else rant about how awful of a job we're doing. It's been hard to stay motivated—I've practically stopped looking at issues and pull requests'</i></p> <p><i>'nothing is stopping people to bash us, for work we aren't paid for, for a feature we all dislike yet needed to keep due to backward compatibility concerns.'</i></p> <p><i>'I don't want to help corporations make millions on free code, and receive rude comments instead of any kind of recognition.'</i></p> <p><i>'almost half of maintainers feel underappreciated and like the work is thankless'</i></p> <p><i>'I just gave up, because what's the point when all you get is constant issues? You give and give and give, and people just take and take and take.'</i></p> <p><i>"That's the big thing for me. [...] It's knowing you did something for free, out of love, and there's an endless stream of people going 'more! more!' and getting angry when you won't accommodate their edge case.'</i></p> <p><i>'You may get emotional about your code. You may feel ashamed of what you did, and do. After all, your code has bugs, there are numerous issues opened at your bug tracker, and people are complaining non-stop. (Oh and, naturally, there will be someone who will try their best to put you down with that.)'</i></p> <p><i>'We want to be seen and have our work acknowledged. We're humans after all.'</i></p>	<p><a href="#">James Kyle</a></p> <p><a href="#">Patrick Howell-O'Neill (quoting Volkan Yazici, Log4J member)</a></p> <p><a href="#">Artem Sapegin</a></p> <p><a href="#">Chris Grams (citing Tidelift report)</a></p> <p><a href="#">Open Collective, (quoting Marc Grabanski, founder of Frontend Masters)</a></p> <p><a href="#">Nadia Eghbal, Roads and Bridges (quoting David Michael Ross)</a></p> <p><a href="#">George Stavrakas</a></p> <p><a href="#">Karolina Sczcur</a></p>
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	<p><i>'I started identifying it as other people's problems, "if only these these idiots would stop submitting bad code that I would have to review, if only these these jerks would stop asking for help", like, it wasn't my fault that that I couldn't muster the energy to work on this, it was all these these stupid people out there and I started you know making it about about other people's problem.'</i></p>	<p><a href="#">Jacob Kaplan-Moss</a></p>
<p>Responsibility</p> <ul style="list-style-type: none"> <li>• people depend on you, software popularity blessing that becomes a curse, long-term commitment, guilt and concern for community</li> <li>• strain of responsibility for security, maintainer burnout is a security risk</li> <li>• sole responsibility: community support a blessed relief, hard to attract new contributors, maintainers are an aging population, if maintainer stops the project dies</li> </ul>	<p><i>'but there are so many people out there that use (depend, even?) on the project for their apps, that I feel obligated to be a good steward of it.'</i></p> <p><i>'Once something gets popular, you only hear from people who are having a problem with it. If you break anything - easy to do - you'll have many people suddenly upset at you.'</i></p> <p><i>'My open source success went from a major blessing to a great curse. It was one of the darkest times in my life. Something that started out with such hope and light ended up just being about getting thousands of emails. People told me their whole life stories and how it's all been leading up to this one feature they really need me to add.'</i></p> <p><i>'He got bullied into giving maintainership to somebody else. And that person installed a backdoor into XZ, and it's so easy for that to happen.'</i></p> <p><i>'maintaining compliance with security standards and regulations adds extra pressure to the role. In the Tidelift state of the open source maintainer survey, when asked to provide their reasons as to why they do not plan to meet industry standards, 38% of maintainers said they</i></p>	<p><a href="#">Nadia Eghbal, Roads and Bridges (quoting Arash Payan)</a></p> <p><a href="#">Juha Saarinen (quoting Dominic Tarr, maintainer of the event-stream module)</a></p> <p><a href="#">Open Collective, (quoting Marc Grabanski, founder of Frontend Masters)</a></p> <p><a href="#">Ashley Williams</a></p> <p><a href="#">Sonar (citing Tidelift report)</a></p>

	<p><i>don't have the time, closely followed by 37% who said they weren't being paid to do it.'</i></p> <p><i>'many projects struggle to bring in new developers, limiting the project's growth and sustainability. In the same Tidelift survey, almost half of maintainers surveyed said they were a solo maintainer.</i></p> <p><i>'you can fork it if you want. And no one did. But I was incredibly sad, and the worst part about this is that it actually kinda haunted me for a while.'</i></p> <p><i>'if the projects I created lives on without me, then open source has worked.'</i></p> <p><i>'The moment I click that unsubscribe button on GitHub, the project essentially dies'</i></p> <p><i>'I'm the only person holding this together, if I leave who will do this?'</i></p>	<p><a href="#">Sonar (citing Tidelift report)</a></p> <p><a href="#">Ashley Williams</a></p> <p><a href="#">Remy Sharpe</a></p> <p><a href="#">Artem Sapegin</a></p> <p><a href="#">Mikael Rogers</a></p>
<p>External pressures and expectations</p> <ul style="list-style-type: none"> <li>● prove yourself: contribute more, work harder, know everything</li> <li>● build an OSS portfolio to be employable, OSS as internship</li> <li>● attention captured, GitHub complicit for gamifying contributions, hard to switch off, desire to go out in nature and live rustic life after burnout</li> </ul>	<p><i>'it starts kind with a compulsion to to prove oneself, I mean for me I felt like we had we had open source this thing and I wanted it to be really awesome and I needed to make this really great and the more I lost interest the harder I worked to try to like overcome it, you know, "this isn't fun anymore, but if I just do it harder I'll make it fun again"</i></p> <p><i>'There is distortion in the web community that you need to learn more, contribute more, work more, know everything, be on the latest technology, and so on'</i></p> <p><i>'Open Source often is a constant, vicious cycle of ego games. Ever-present expectations of performance and arbitrary success bring people to a breaking point. We confuse approval with love and</i></p>	<p><a href="#">Jacob Kaplan-Moss</a></p> <p><a href="#">Remy Sharpe</a></p> <p><a href="#">Karolina Szczur</a></p>

	<p><i>self-worthiness, which becomes dependent on achieving. At the lowest levels of behaviour we engage in a phenomenon called impression management — we're always thinking about how we appear to others, even when no one's around.'</i></p> <p><i>'It's all in the numbers — followers, contributions, comments, stars.'</i></p> <p><i>'It's actually pretty typical for open-source work to help build a portfolio that then leads to paid jobs. In some ways the structure resembles unpaid internships in other industries—a system increasingly seen as unethical, exploitative, and unfairly advantageous to people who can afford to take on heaps of uncompensated work at the expense of those who cannot.'</i></p> <p><i>'Then as you said, corporations making money off of free work is definitely a huge part of it. It is however, not a bad idea for building a portfolio.'</i></p>	<p><a href="#">Karolina Szczur</a></p> <p><a href="#">Patrick Howell-O'Neill</a></p> <p><a href="#">Artem Sapegin (commenter in comments section)</a></p>
<p>Trajectory of burnout</p> <ul style="list-style-type: none"> <li>• creeps up on you, boiling frog, never thought it would happen to me</li> <li>• long recovery, people don't come back</li> <li>• recognised problem in OSS and perception that it is getting worse</li> </ul>	<p><i>'I never thought it was going to happen to me, and I haven't realized when it did happen. When you're there it's hard to see how mentally damaging open source is. You're like a boiling frog: don't realize you're boiling until you became a soup.'</i></p>	<p><a href="#">Karolina Szczur</a></p>
<p>Social isolation:</p> <ul style="list-style-type: none"> <li>• work online, alone, lonely, no time to go out and socialise</li> </ul>	<p><i>when asked "What do you dislike about being an open source maintainer?" the response, "It can be lonely," was the third most selected reason.'</i></p>	<p><a href="#">Sonar (citing Tidelift report)</a></p>

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