

Make Open Source Suck Less in 2024

Remove the Pains of
Package & Environment Management



Agenda

- What makes open source suck?
- Software supply chain security implications
- How to manage dependencies without swearing
- Juggling virtual environments at scale
- Creating reproducible environments across operating systems

Introductions



Pete Garcin

Director of Product
ActiveState



Shane Warden

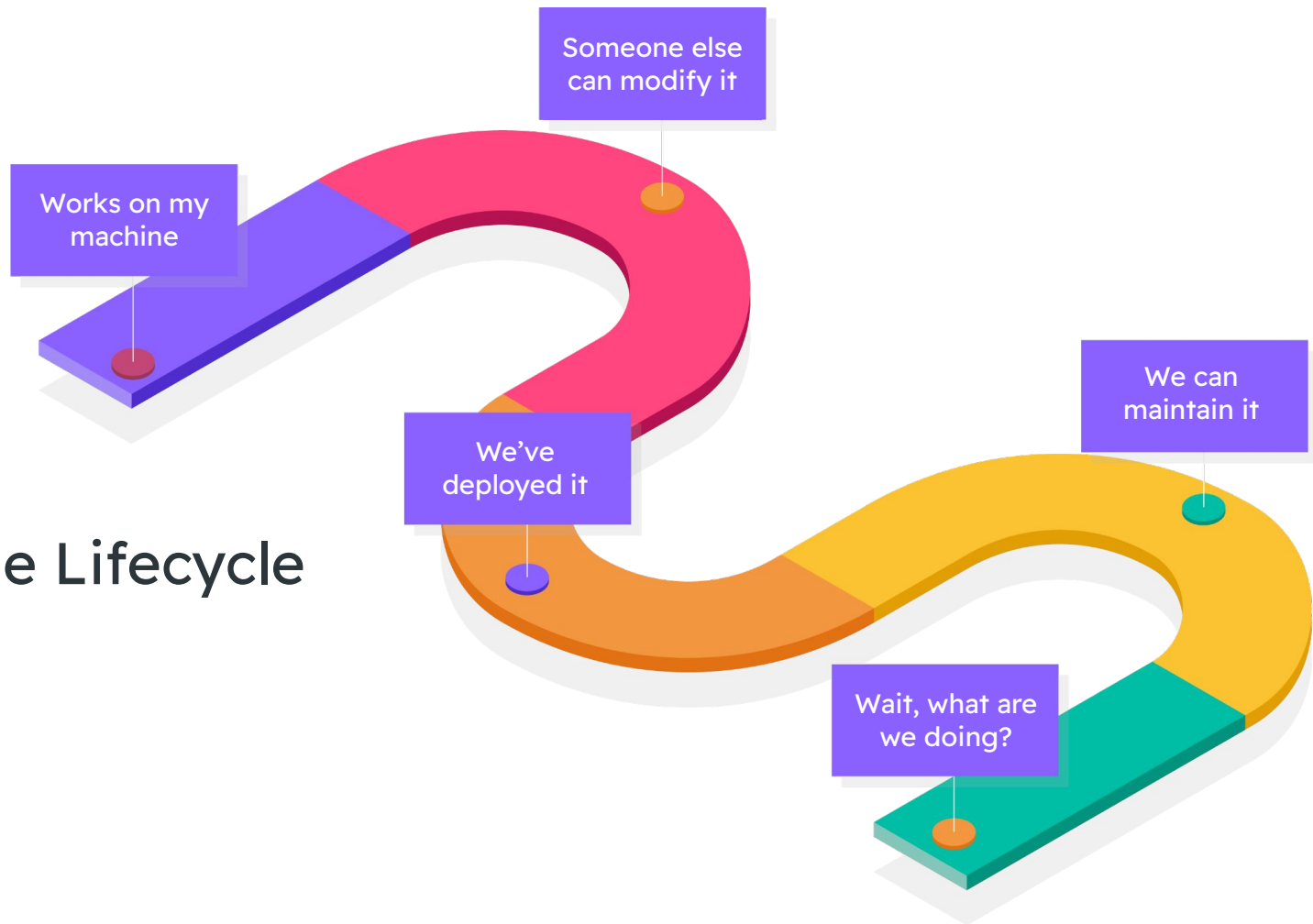
Director of Engineering
ActiveState

How Code Gets Written

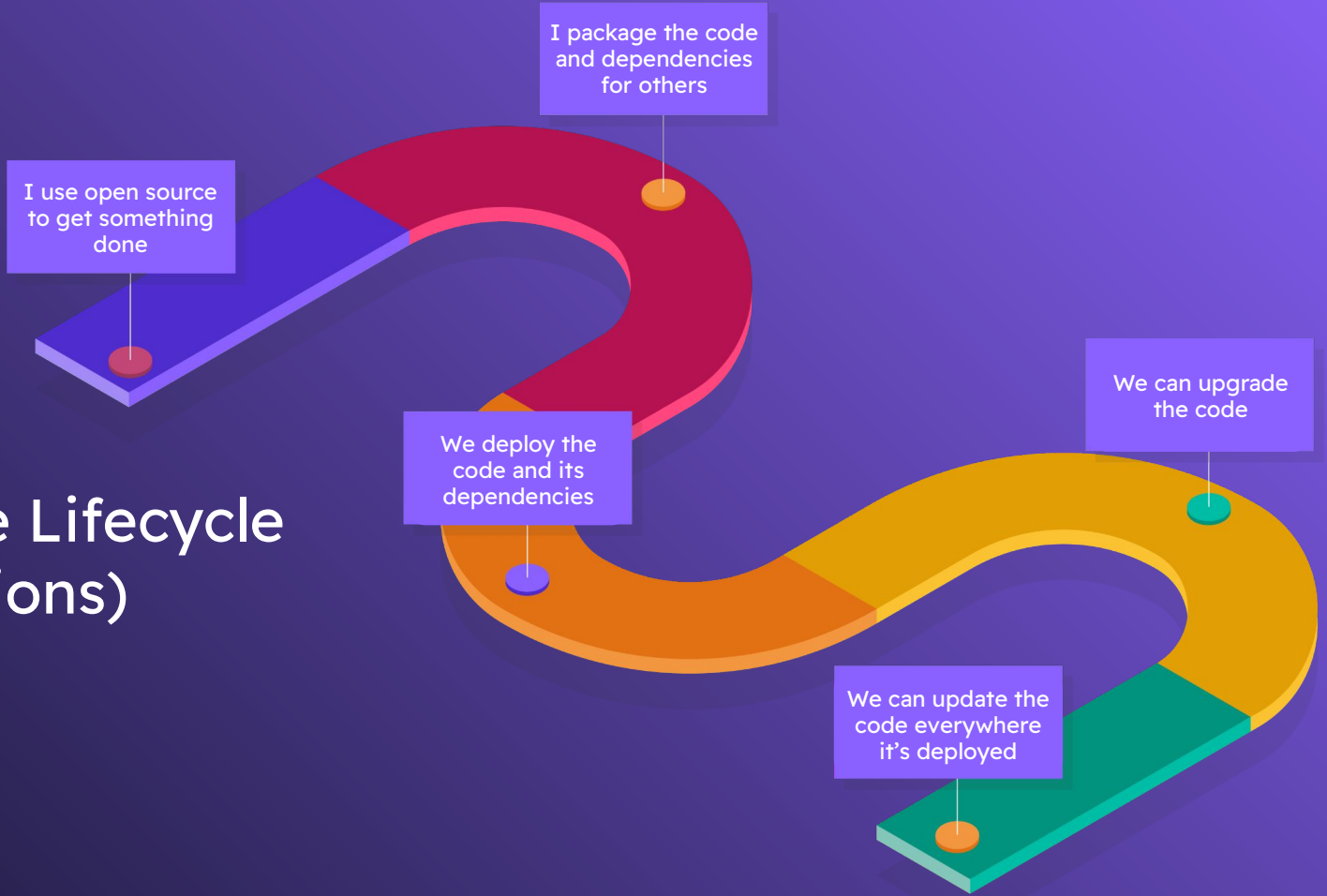
A Small Example
That (mostly)
Really Happened



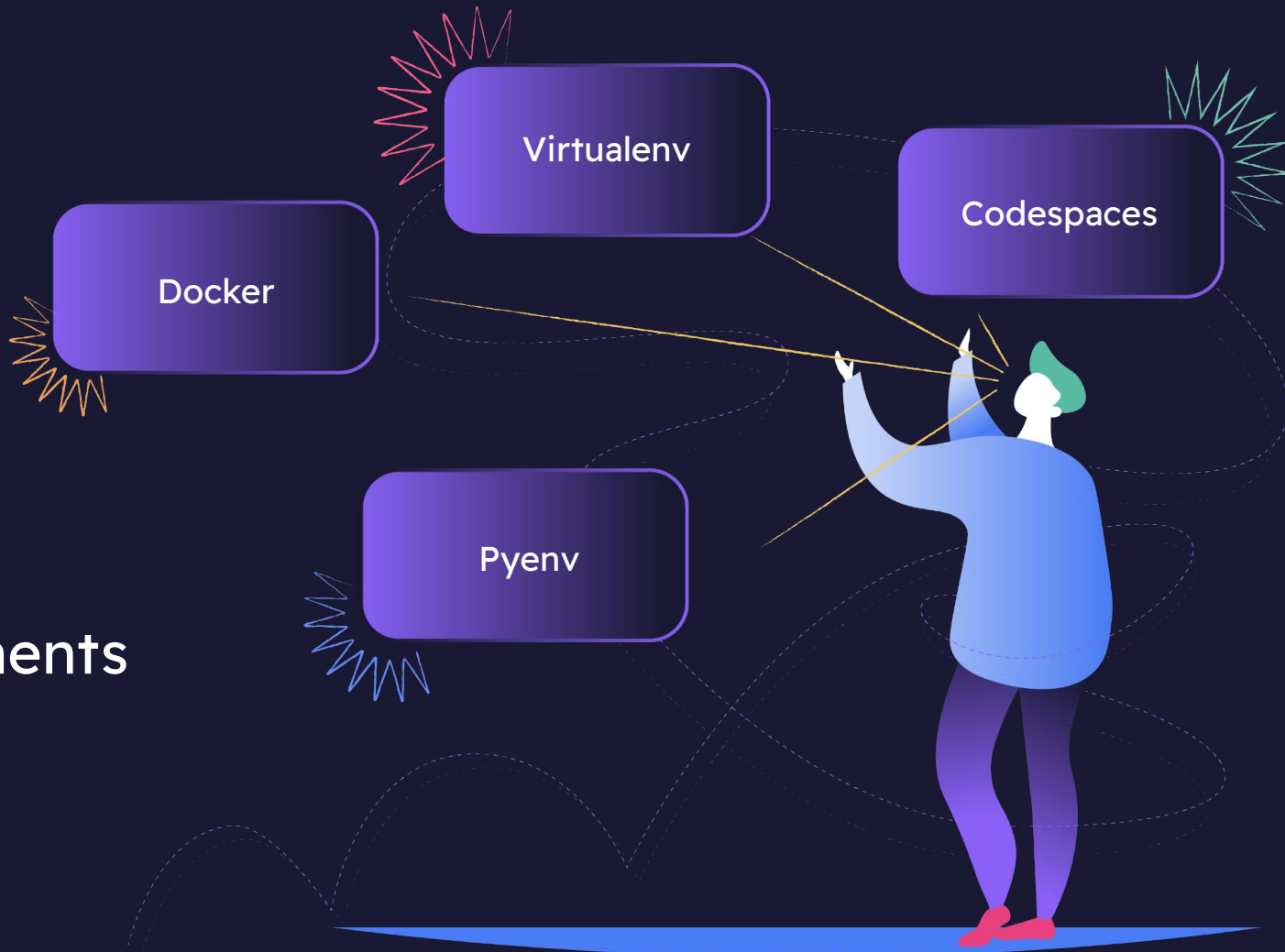
The Code Lifecycle



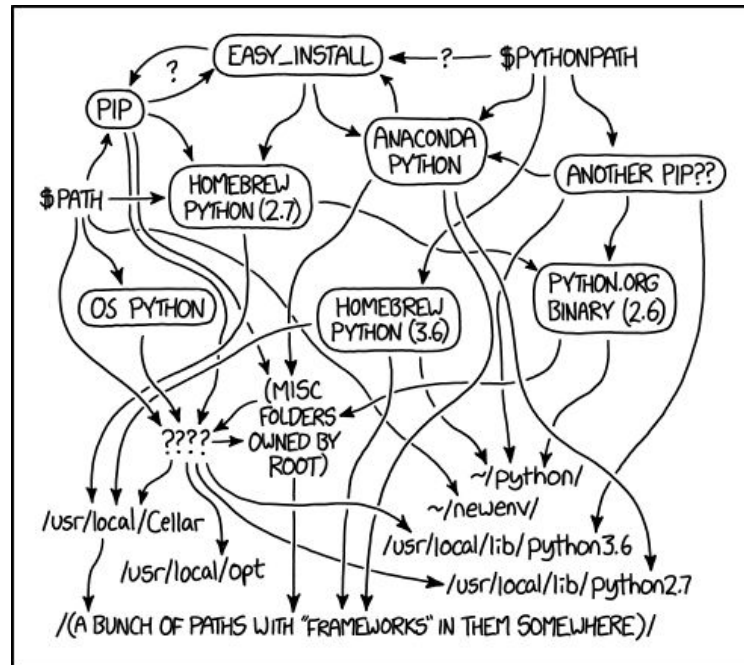
The Code Lifecycle (implications)



Virtual Environments



Python Dependency Management



What do we want?

Ease of adoption

Project isolation and independence

Consistent tooling through deployment

Ease of debugging/history management

Manage deployments everywhere

How do these manifest?

- ✓ I can get started easily
- ✓ I can share my code with others
- ✓ We can develop together, branching and merging
- ✓ We can test and deploy in shared environments
- ✓ We comply with our obligations
- ✓ We can update without fear
- ✓ We can manage all of our deployments

Poll

What tools are you (or your developers) currently using to handle dependency & environment management?

Check all that apply:

- Source Control
- Dedicated Package Manager (npm, pip, poetry, etc.)
- Containers
- Cloud Based Environments
- Vendoring Dependencies Locally
- Nothing (we just YOLO it)

ActiveState Platform Benefits

- Embedded virtualization
- Universal cross ecosystem and OS w/ enhanced solving and catalog
- Change management history
- Vulnerability information
- Runtime metrics

A Small Script Gets Reused

```
from PIL import Image, ImageDraw, ImageFont
import click

@click.command()
@click.option('--top-text', default='Top Text', help='Top line
of image text')
@click.option('--bottom-text', default='Bottom Text',
help='Bottom line of image text')
def draw_image(top_text, bottom_text):
    i = Image.open('disaster-girl.jpg')
    draw = ImageDraw.Draw(i)
    draw.font = ImageFont.truetype('Comic.ttf', 36)
    draw.text((15,15), top_text, (255,255,255))
    draw.text((15,300), bottom_text, (255,255,255))

    filename = top_text + ".png"
    i.save(filename)
    print(f'Saved {filename}')

if __name__ == '__main__':
    draw_image()
```

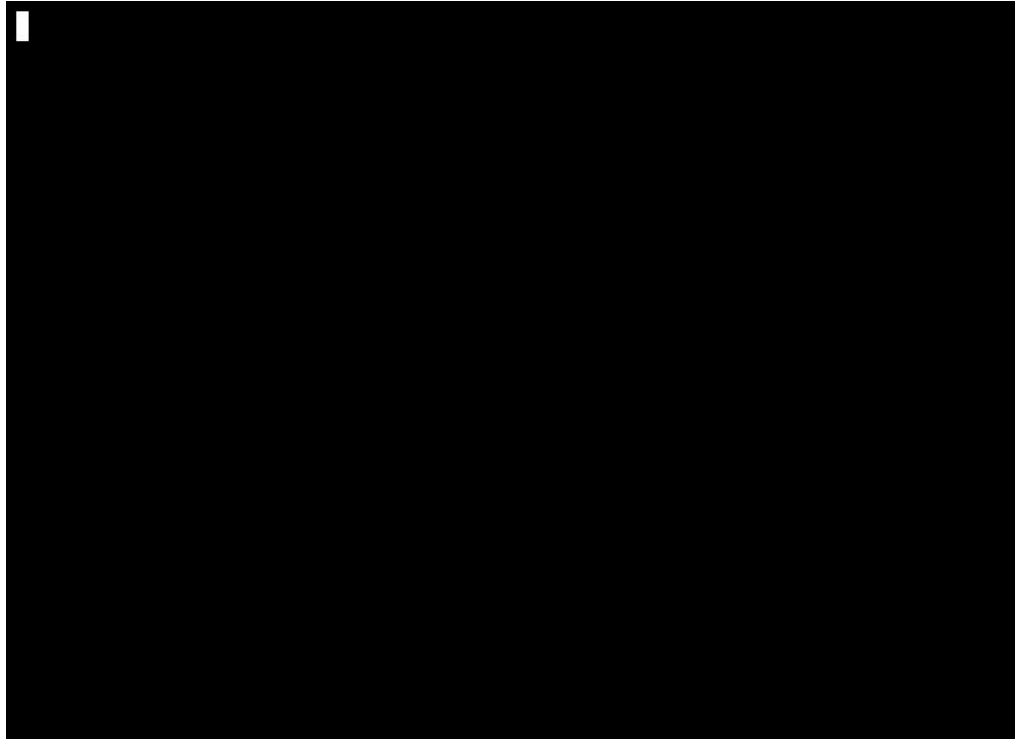
Packaging for Pete

```
pillow==9.0.0  
click
```

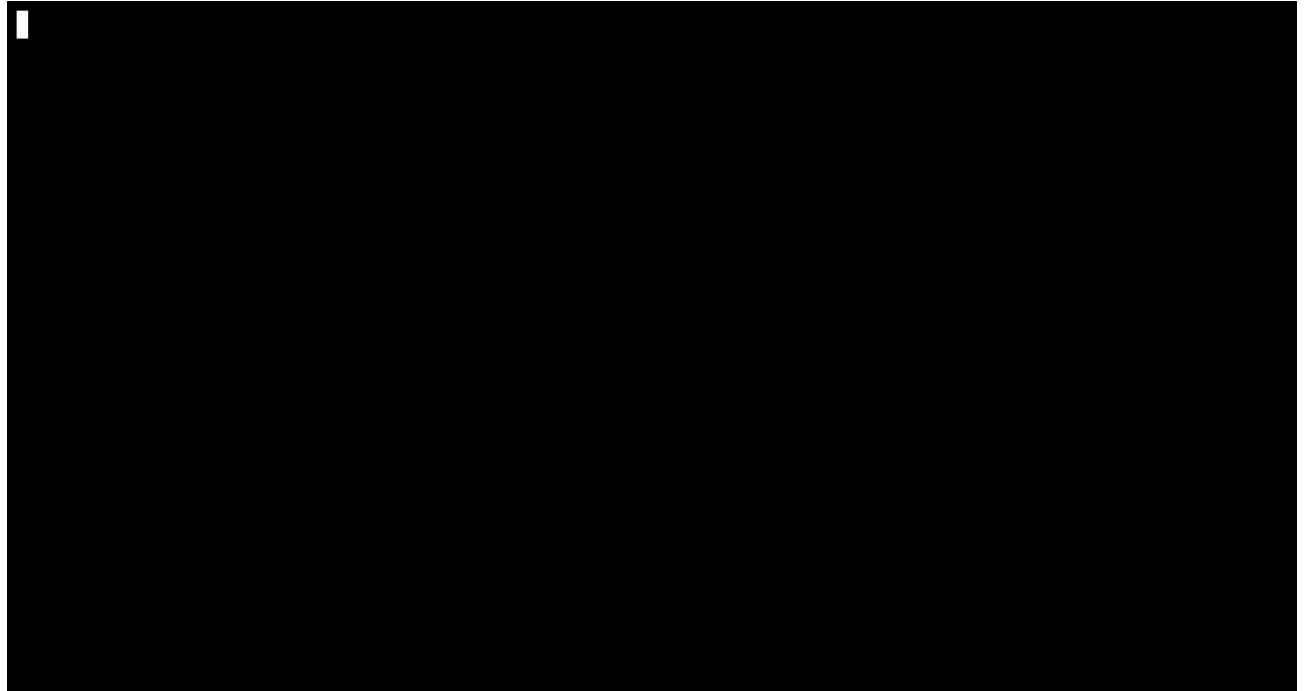
ActiveState

ActiveState Platform Demo

Shane's Checkout



Shane's Pull



Poll

What are you currently using to deploy environments or keep developers in sync?

Check all that apply:

- Standard Containers
- Cloud Environments
- README files
- Source Control
- It's Lord of the Flies...

Vulnerable Environments

The screenshot shows the ActiveState interface for a user named 'my-org' with an Admin role. The main navigation includes Dashboard, Vulnerabilities (CVEs), Members, and Settings. The Vulnerabilities section shows 16 total vulnerabilities, with a breakdown of 4 Critical (C), 6 High (H), 8 Medium (M), and 2 Low (L). A search bar and a Filters button are present. A section titled 'New since last visit' is expanded, showing a critical vulnerability (CVE-2022-24303) in the Pillow package. This vulnerability affects 5 vulnerable environments: meme-generator (5), ai-training-sandbox (2), and jupyter-starter (2). Each environment has a 'Fix' button. A 'Vulnerable Environment Summary' button is also visible.

ActiveState Support Plans & Pricing flukeout

my-org Role - Admin

Dashboard **Vulnerabilities (CVEs)** Members Settings

Vulnerabilities 16 Filters

C 4 **H** 6 **M** 8 **L** 2

New since last visit Dismiss

C Critical
[CVE-2022-24303](#)
Pillow before 9.0.1 allows attackers to delete files because spaces in temporary pathnames are mishandled.

Packages affected
Pillow 9.0.0

Project Affected	Usage	
meme-generator	5 Vulnerable Environments	Fix
ai-training-sandbox	2 Vulnerable Environments	Fix
jupyter-starter	2 Vulnerable Environments	Fix

[Vulnerable Environment Summary](#)

Summary

Package and environment management is fragmented and incomplete.

ActiveState solves this holistically from start to finish with:

- Embedded virtualization
- Universal cross ecosystem and OS w/ enhanced solving and catalog
- Change management history / rollback
- Vulnerability information
- Runtime metrics

Q&A

Next Steps

Schedule a call with our technical experts:

<https://www.activestate.com/solutions/contact-sales/>

Check out more of our Platform demo videos:

<https://www.activestate.com/resources/product-demos/>

Try the ActiveState Platform for free:

<https://platform.activestate.com/>