

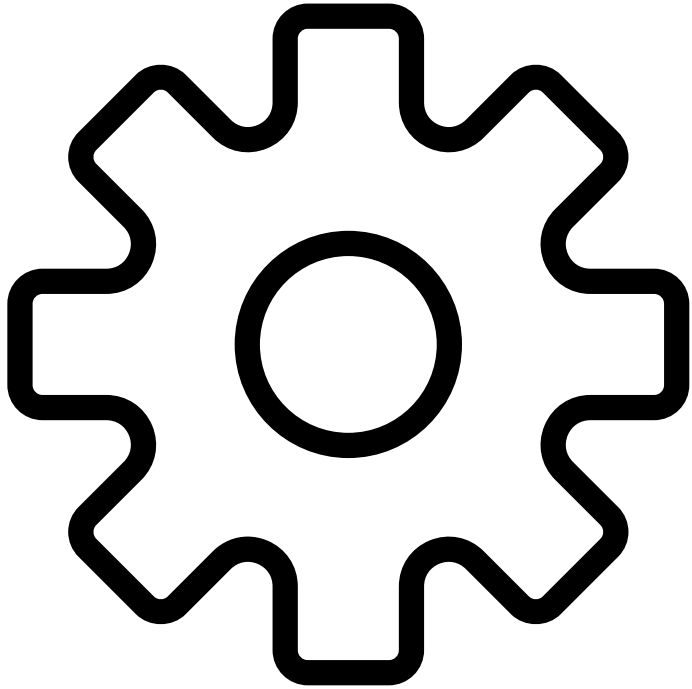
# DevOps, SRE, and other Buzzwords

Ryan Tolboom

New Jersey Institute of Technology

What does a sysadmin do?

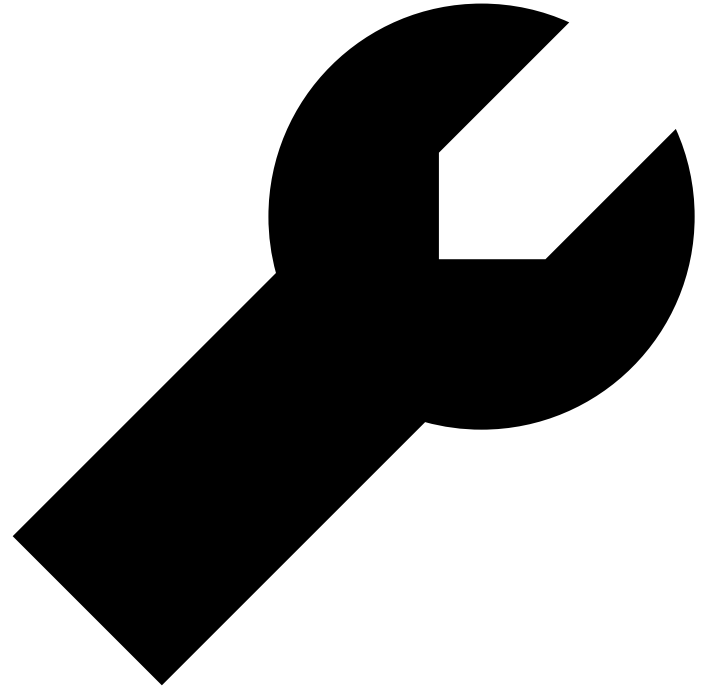
Configure



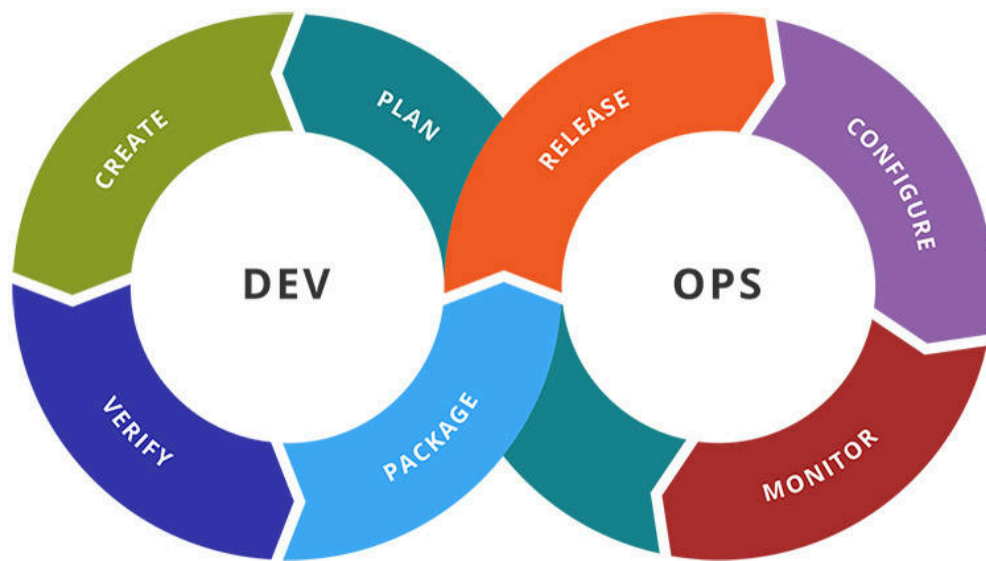
Operate



Maintain



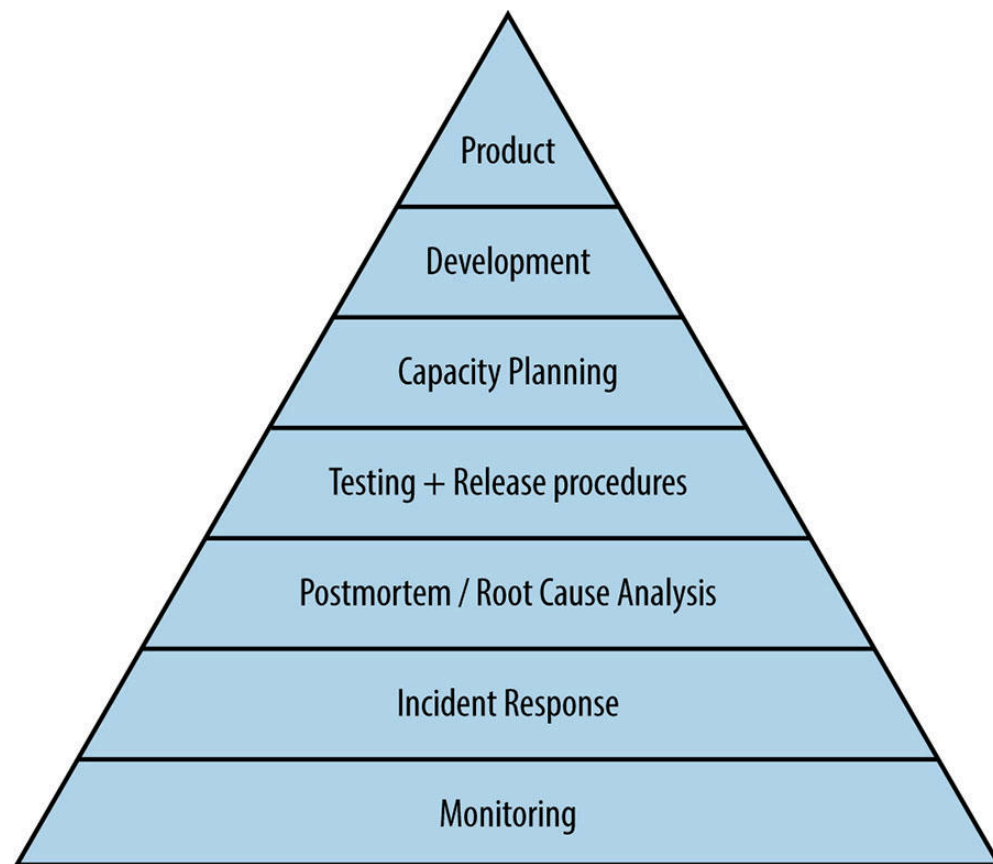
# DevOps Patterns



- Hardware in the cloud
- Everything is code
- “YAML engineers”
- Devs doing sysadmin or sysadmins doing dev?

# Site Reliability Engineering (SRE)

- Change management
- Automation
- CI/CD Pipelines
- Testing
- “Treat operations as if it’s a software problem.” – Google



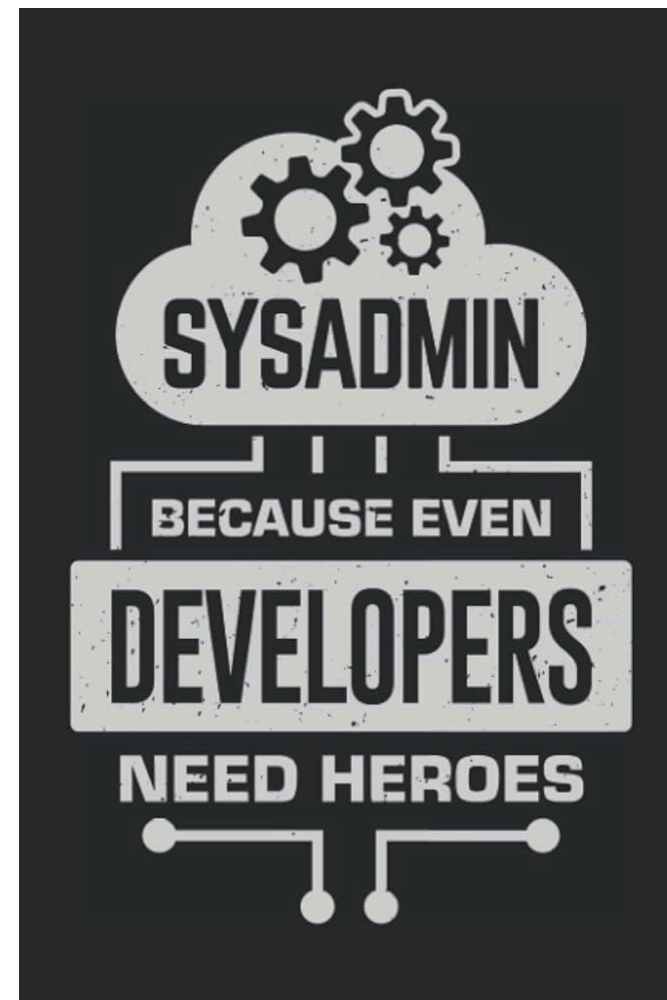
# Is the Sysadmin Dead?



- Nope, they're just coding more
- Expertise in uptime and hardware optimization helps solve software problems
- An empowered sysadmin can do more, much more
- Experience matters

# What does it all mean?

- Failure is an option!
- A whole lot of virtualization
- Continuous deployment is expected
- Rapid (automated) response
- Downtime for maintenance is passe
- Make it run on anything
- Automate, automate, automate!
- Save configurations, not images



What solutions are we using *now*?



## **Automation Tools**

Ansible

Terraform

Chef/Puppet

## **VMs**

Amazon EC2

Digital Ocean

Linode

## **Containers**

LXC

K8s

Podman

## **Reproducible Systems**

NixOS

GUIX

## **Function as a Service**

AWS Lambda

Google Cloud Functions

Azure Functions

## **Platform as a Service**

Heroku

Fly.io

Railway.app

## **Immutable Linux**

ChromeOS

Vanilla OS

Endless OS

## **Hybrid Cloud**

OpenStack, K8s, etc.

Any big IaaS

## **Self-Hosted AI**

# How do we keep up?

- We've talked about and used lots of tools, but they aren't the only ones
- Concepts > Use Instances
- Read, share, contribute
- Learn from past mistakes
- Don't believe the hype. Think for yourself!
- Argue and learn
- Insular sysadmin culture *is* dead
- My personal thoughts on the future: distributed, decentralized, federated, mesh