Fuzzy Lines: Aligning Teams to Monitor Your Application Ecosystem

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Separate ops and dev teams must build relationships between people, use processes to increase communication, and leverage a set of shared tools.
whoami

Kim (she/her)

- Site Reliability Engineer
- Background in education and web development
- Interested in how inclusive cultures impact business outcomes
whoami

Sarah Z (she/her)

- VP of Engineering
- Lead @ Fairwinds SREs & Devs
- Background in operations
- DevOps and engineering culture enthusiast
- Focused on building strong teams
Agenda

People  ---  Process  ---  Tools
Agenda

People  Process  Tools
People : Desired Outcomes

- Both Dev and Ops teams are willing participants in a strong partnership
- Shared goals and direction are key to both teams’ identities
- Teams are thoughtful of and accountable to each other for their actions
Develop a Group Narrative

Who are we?
Develop a Group Narrative

● Start with a history lesson
  ○ Understand existing struggles
  ○ Share impetus for change

● Create a relatable vision
  ○ Know what problems you intend to solve together
  ○ Envision a better future
  ○ Insert symbolism as reminders

● Everyone should be able to tell the story
  ○ Culture is learned and passed on by members
Tech Swarm

A technology working group, working alongside the CTO to affect the technical direction, decision making and consistency of implementation across the engineering organization.

Purpose

As the engineering organization scales and Pods become focused on customer specific implementations, it is important for us to ensure that our technical decisions (both proactive) are well understood, well researched, well architected and applied throughout.

We face many challenges in making this fact a reality. Some of these challenges are:

* Current standards and existing implementations are not well documented or maintained.
* New solutions developed during individual customer implementations are often developed for general consumption and looped back into the larger organization.

Welcome New-

We’re so excited to have you on the team! Welcome to Fairwinds

@szelechoski  @kimschles
People: Recommendation 2

Commit to Shared Values

How do we work together?
Commit to Shared Values

- Ask yourselves challenging questions
- Focus on human interactions
  - How people should treat each other
  - Not skills or capabilities
- Keep it short & make it memorable
  - List of 3 or 4
  - Acronyms are useful
- Require commitment and active participation
  - All levels of the organization
Roll with
Respect
Inclusion
Compassion
Kindness
People: Recommendation 3

Self Regulation

*We're all in this together*
Self Regulation

- Create simple prompts that allow individuals to enforce shared values
  - Grassroots
  - Frictionless, simple
- Set the expectation that feedback is welcome and necessary
  - Introspection not conflict
_Micah is my hero when it comes to weekly syncs with customers. Every time I go to add notes to prep for a sync, he’s already done it

So 🐝 for _Micah
We don’t do that here.
We don't do that here.

I don't think we can deploy something that goes against every piece of advice we give our customers.

Haha roger
Process: Desired Outcomes

- Both teams understand and maintain their individual responsibilities, while also helping in the gray area
- Dev and Ops teams communicate openly and often
- All work happens in a transparent fashion and understanding is built through sharing context
Process: Recommendation 1

Define Shared Responsibilities
Define Shared Responsibility

- Define areas of responsibility, not tasks
  - Who is responsible for what vs. Who can do what
  - There will be a gray area
- Where lines are fuzzy, help each other
  - Make it ok to ask for assistance
  - Do your due diligence
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Where lines are fuzzy, help each other
Process: Recommendation 2

Shared Slack Channels
Shared Slack Channels

- **Targeted discourse and conversation**
  - Paired real-time or asynchronous troubleshooting

- **Being open and public**
  - Opens the relationship
  - People feel like they can ask for help
  - Inherent awareness
  - Postmortems
Process: Recommendation 3

Weekly Syncs
Weekly Syncs

- Increase transparency and understanding
  - Teams are doing work that affects each other
  - Important to know what is happening outside your own bubble
  - Understand why certain work is happening; why decisions are being made

- Sync priorities across teams
  - Align to ensure collaboration

- Share the impact and value of work
  - Work for each other
Agenda

People — Process — Tools
Tools: Desired Outcomes

- Monitor your infrastructure system and workloads, both ops and dev
- Increase confidence in monitoring
- Decrease time to resolution
Tools: Recommendation 1

Shared Monitoring Platform
Ops monitors and alerts

- PagerDuty
- Slack
Shared Monitoring Platform

Ops monitors and alerts
- PagerDuty
- Slack

Dev monitors and alerts
- ?
- ?
This screenboard displays Kubernetes metrics. But you should also track and even prefer native container metrics. Here is why. Note that metrics are coming from Kubernetes state as well. If some of your graphs are empty, make sure the agents collect those as referenced in the documentation.
The Tale of the Phantom Scaling 👻
Classic Elastic Load Balancer  

Application Load Balancer
“something unusual going on with launch today...”
Benefits of a Shared Monitoring Platform

- Supports communication in regular meetings and shared slack channels
- Single pane of glass for both teams
- Team-specific dashboards
- Decreased time to resolution for issues
Datadog Alternatives

- Honeycomb
- Sensu
- Sysdig
- New Relic
Tools: Recommendation 2

Monitors as Code
Monitor Families

- aws-quotas
- aws
- elasticsearch
- gcp-quotas
- gcp
- istio
- kubernetes
- papertrail
- rds
Kubernetes Monitors

- Cluster disk usage
- Cluster disk usage high
- Cluster memory
- Cluster network errors
- Cronjob failed to start
- Deployment replica alert
- External DNS registry errors
- External DNS source errors
- High node I/O wait time
- HPA failures

- Job failure
- Kube state metrics missing
- Kubelet health
- Nginx config reload failure
- Node not ready
- NTP off
- Pod crashes
- Pods pending
- System load average high
resource "datadog_monitor" "production_running_out_of_memory" {
  # Required Arguments
  name = "[production] Running out of memory"
  type = "query alert"

  message = "Running out of free memory on {{host.name}}"
}

# Optional Arguments
new_host_delay = 300
thresholds {
  critical = 0.1
  warning = 0.15
}
require_full_window = true

tags = ["hardware", "production", "fairwinds"]
Benefits of Monitors as Code

- Repeatable
- Familiar
- Transparency and vulnerability by sharing work with others
- Collaboration via PRs and code reviews
- More accessible for people who use screen readers
You can navigate the fuzzy line between ops and dev by focusing on the relationship between teams.
Recap
People

Develop a Group Narrative

Commit to Shared Values

Self Regulation
Process

Define Shared Responsibilities

Shared Slack Channels

Weekly Syncs
Tools

Shared Monitoring Platform

Monitors as Code
We’re Hiring!

https://www.fairwinds.com/careers
Resources

- Fairwinds
- How to Setup a Shared Slack Channel
- Datadog
- Terraform: Datadog Monitor Resource
Thank You!

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🌈✨

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