

# Incident Management meets DevOps

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**Public**

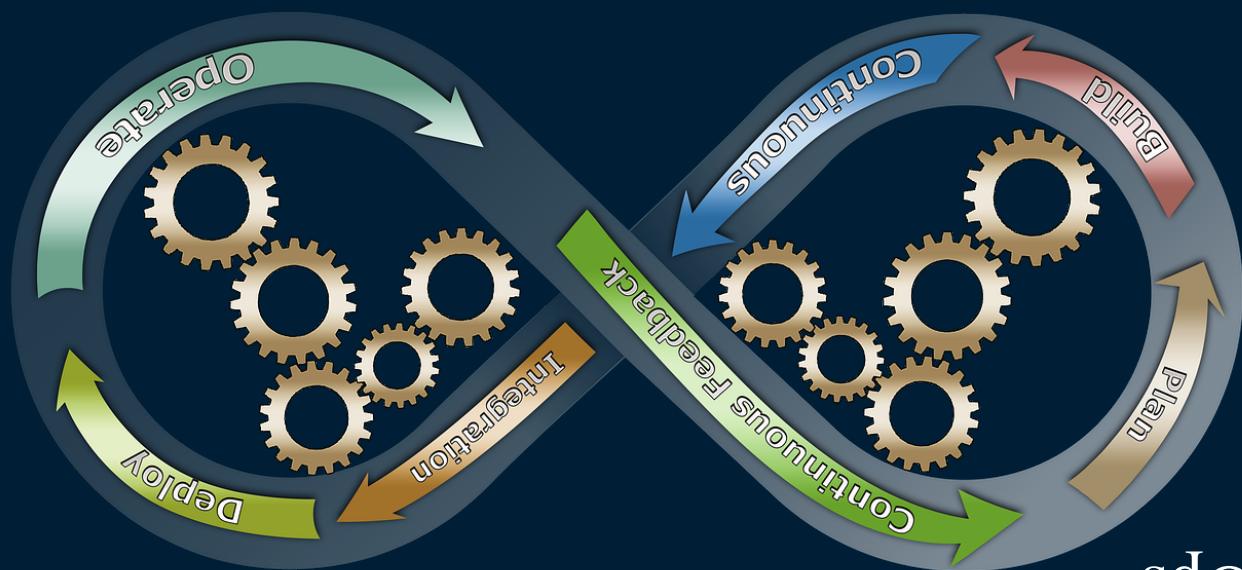
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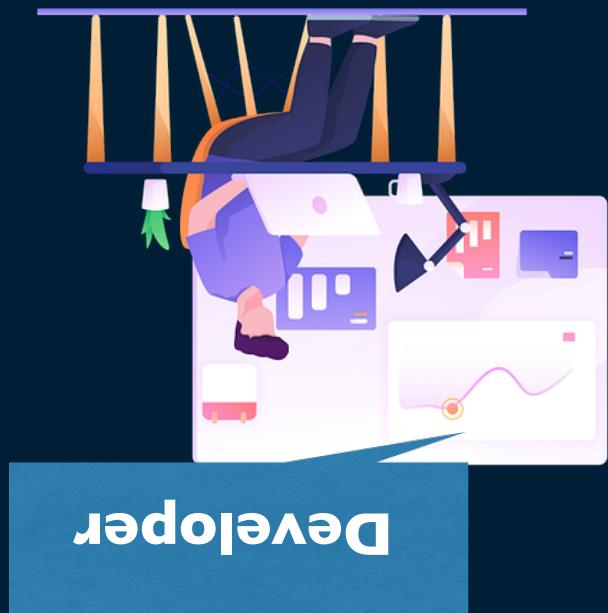
DevOps is a set of software development practices that combines software development (Dev) and information technology operations (Ops) to shorten the system's development life cycle while delivering features, fixes, and updates frequently in close alignment with business objectives.



## What is DevOps

DEFINITION OF  
DEVOPS

I just want to Code. Everything else should be automatic



- ✓ Continuous Integration
- ✓ Continuous Deployment

DeVOps - What's in it for you?



DeVOps - What's in it for you?

- ✓ Faster time to market
- ✓ Beat the competitors
- ✓ Wow the customers

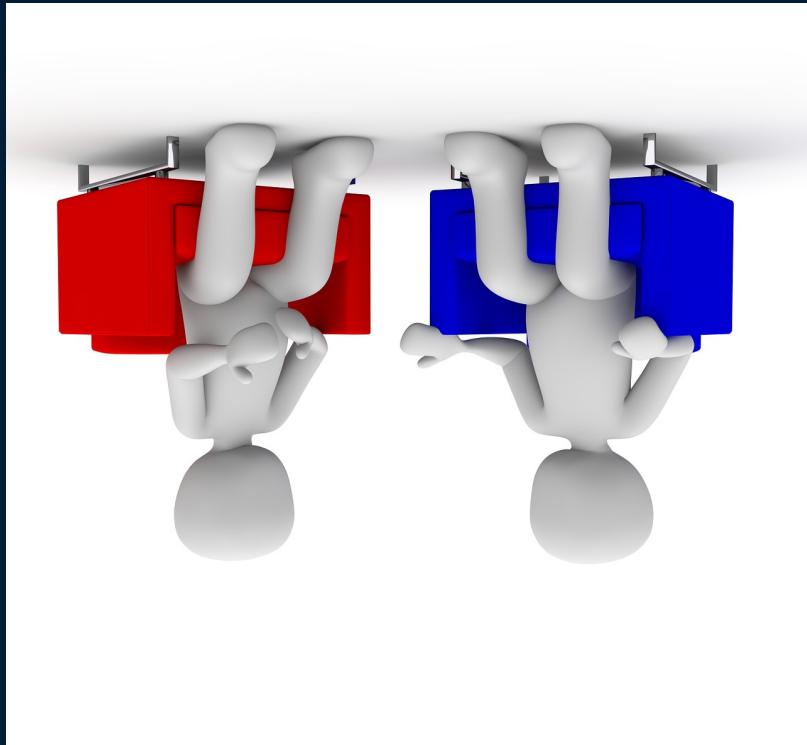
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How does DevOps apply to production outages?



What about Incident Management?

Let's talk



- ✓ Incident Management
- ✓ Definition
- ✓ Life cycle
- ✓ Goals
- ✓ Evolution
- ✓ Role of DevOps

What are we going to talk about?

TALK  
SCOPE OF THIS

## Public

*I love it when I am on vacation*

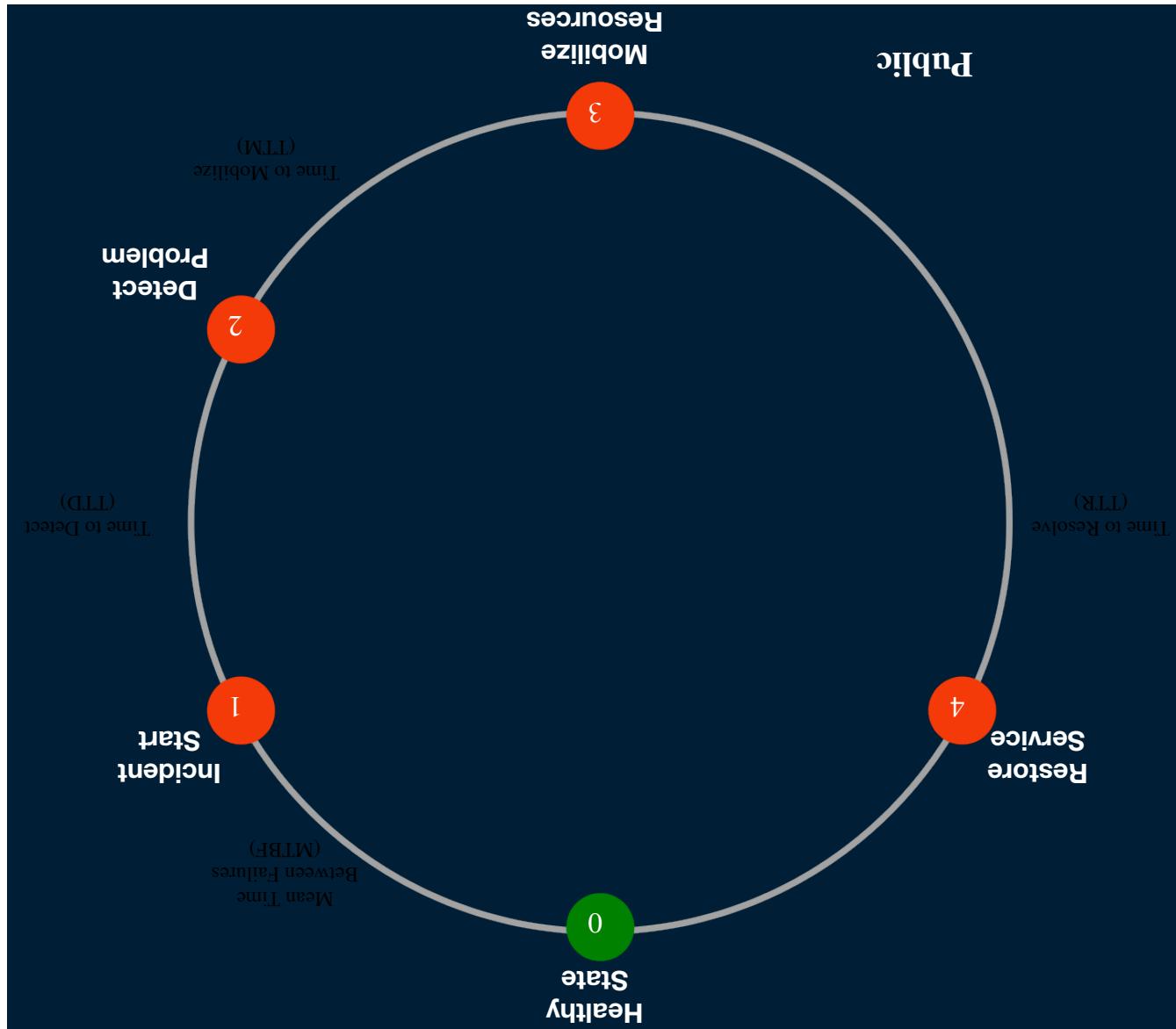
Night time calls, no life,  
escalations, blame others, waste of developer's time,  
Boring, Labour, stress, I hate it, thankless job,

## General thoughts

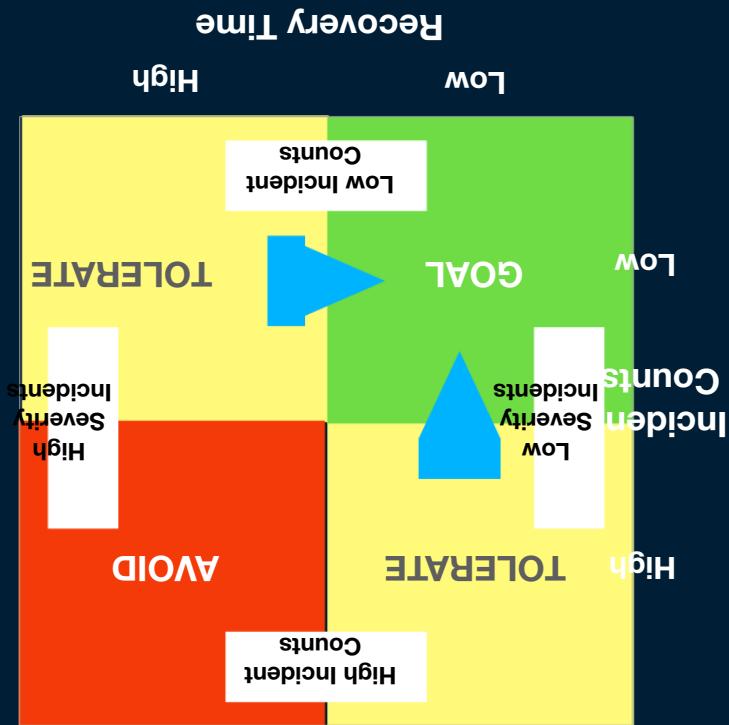
Incident management is a process of returning a service to normal as quickly as possible after a disruption, in a way that aims to create as little negative impact on the business as possible



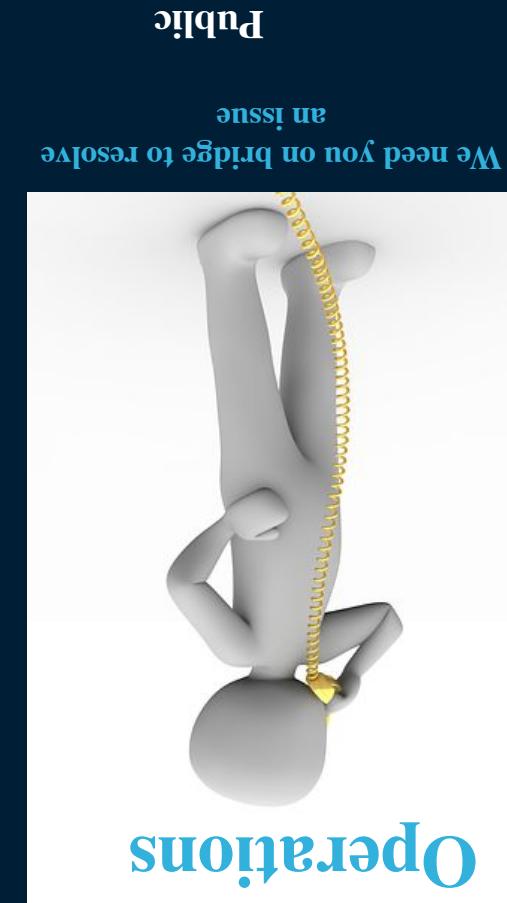
**INCIDENT MANAGEMENT**



**INCIDENT MANAGEMENT**  
**LIFE CYCLE**



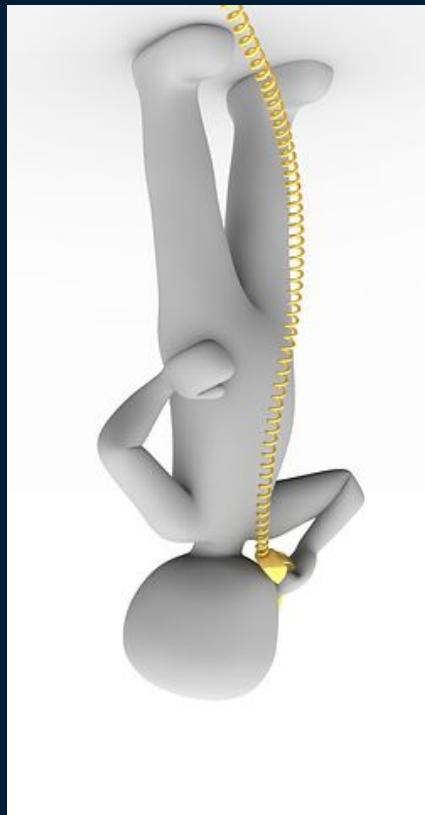
- ✓ Reduce Incident Count
- Reduce TTD, TTM, TTR
- ✓ Reduce time to recover after a disruption
- Return a service to normal as quickly as possible



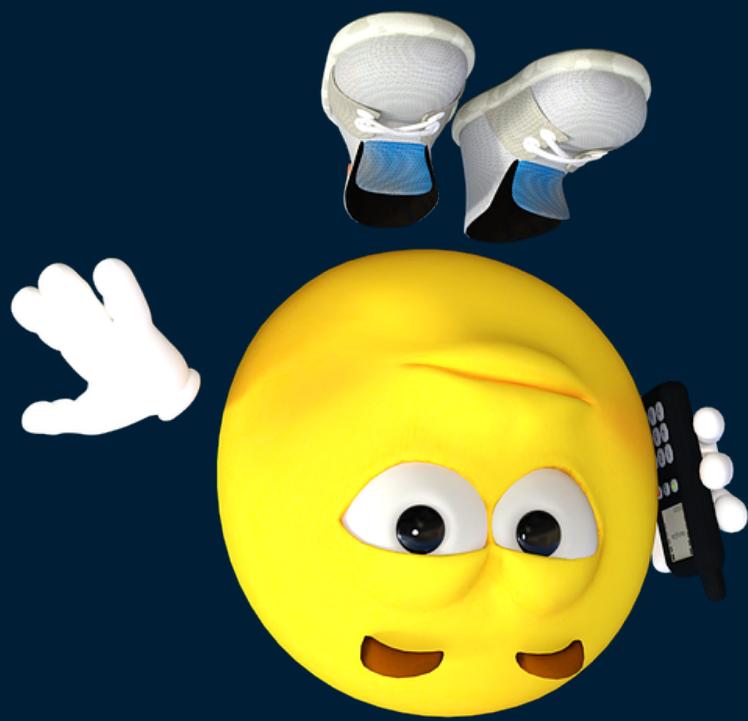
- ✓ Process
- ✓ Manual monitoring
- ✓ Manual mobilization
- ✓ On the go Remediation

Stage 1 - React manually on the go

EVOLUTION OF INCIDENT MANAGEMENT



30 mins later



20 more mins. Almost there

Public

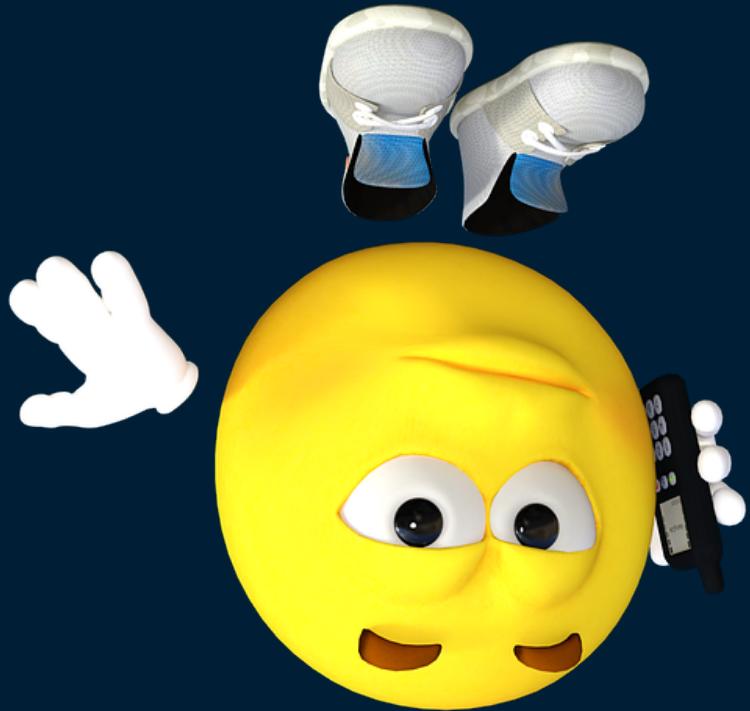
Stage 1 - React manually on the go

EVOLUTION OF INCIDENT MANAGEMENT

Result

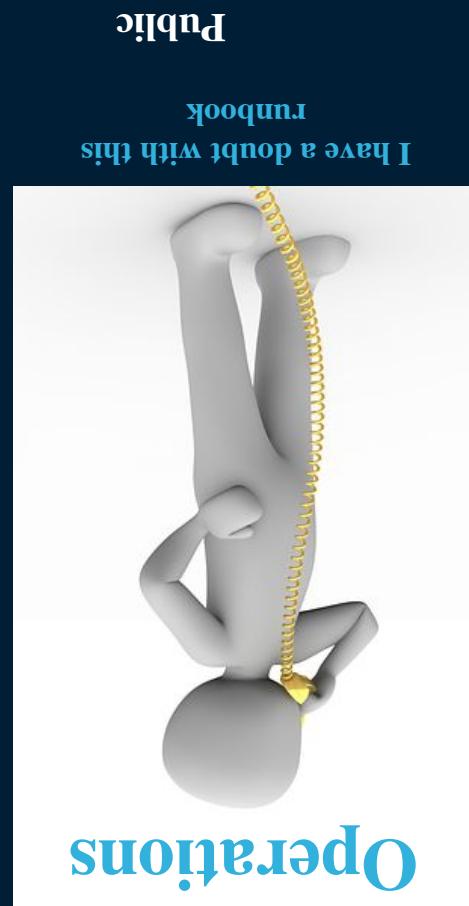
Slow detection  
Slow mobilization  
Slow remediation

^  
^  
^



Development

Stage 2 - React manually using some Runbook



I have a doubt with this

runbook

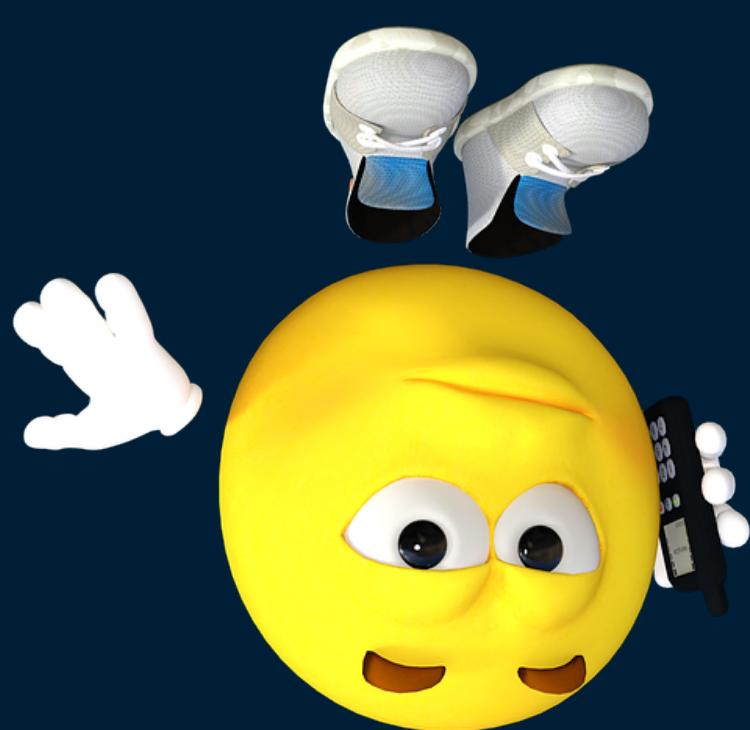
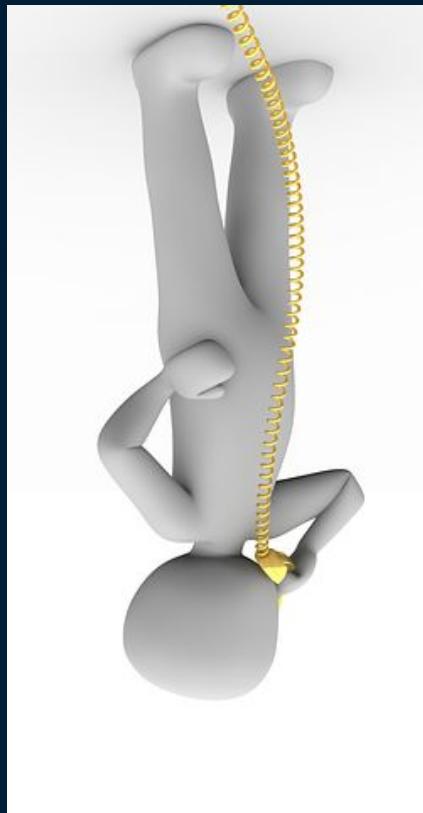
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Processes  
✓ Automated monitoring  
✓ Manual mobilization  
✓ Planned remediation

Few mins later

Stage 2 - React manually using some Runbook

EVOLUTION OF INCIDENT MANAGEMENT



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No idea. I am new to this team.

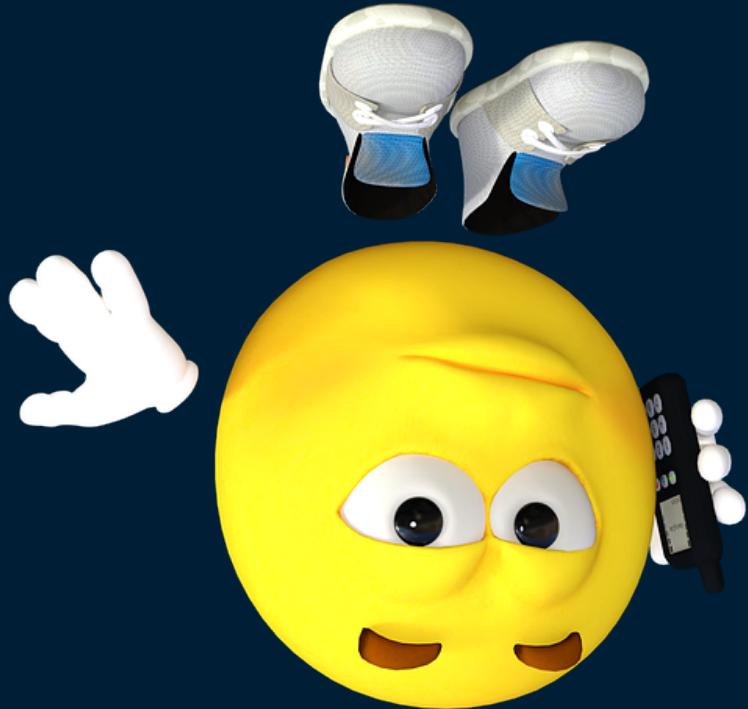
- Result
- Fast Detection
- Slow/fast mobilization
- Slow/fast remediation

That fix worked. Why was  
runbook outdated?

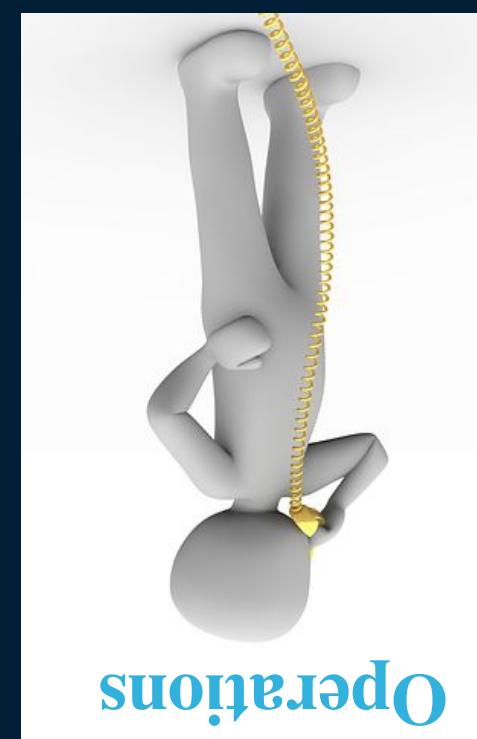
Development

Stage 3 - React using a script(automated runbook)

EVOLUTION OF INCIDENT MANAGEMENT



What? Why?



Public

I cannot download the script

- ✓ Process
- ✓ Automated monitoring
- ✓ Manual mobilization
- ✓ Automated Remediation

I did not have new url of the  
repo



- Result ✓
- Fast Detection ✓
- Slow/fast mobilization ✓
- Slow/fast remediation ✓

Few mins later

Stage 3 - React using a script(automated rubook)



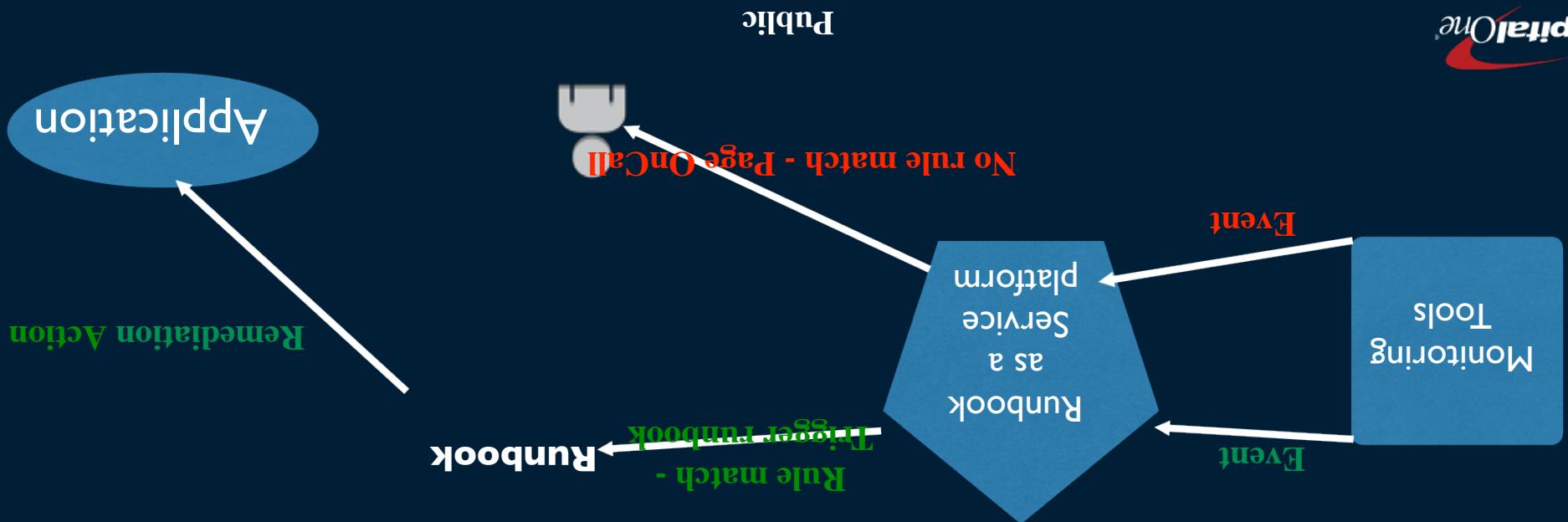
Shorten the **incident management** life cycle while delivering features, fixes, and updates frequently in close alignment with **operational objectives**

- ✓ Automate the end-to-end process (similar to CI/CD) connecting the 3 stages of a production outage
- ✓ Solve known problems using known solutions automatically
- ✓ Page the relevant teams automatically for unknown problems

## Approach

EVOLUTION OF INCIDENT MANAGEMENT

# DeVOps way to do Incident Management



- ✓ Automatic Remediation using runbook(for known issues)
- ✓ Automatic Mobilization(Locate runbook for known issues, dev team for unknown issues)

#### Automatic Detection

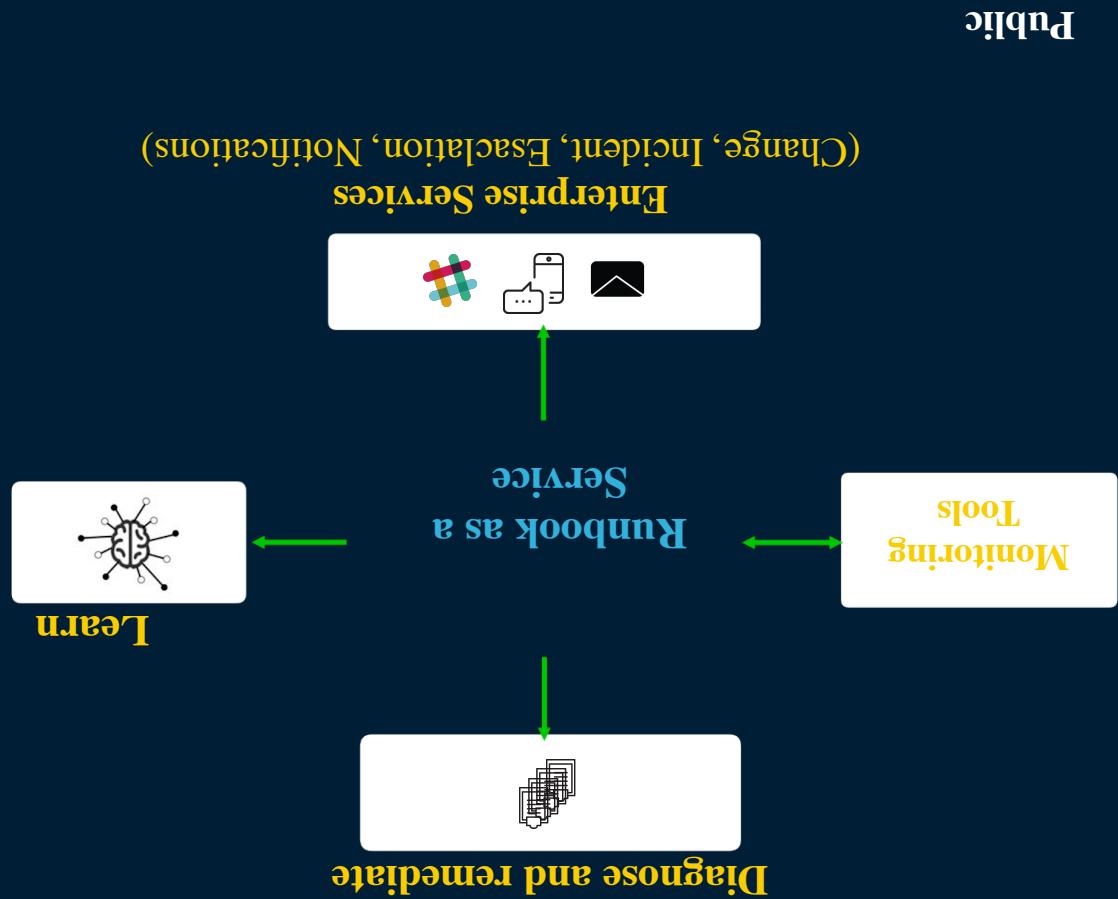
Process

#### Stage 4 - Event based Remediation/Runbook as a Service

EVOLUTION OF INCIDENT MANAGEMENT

- Result
- ✓ Fast Detection
  - ✓ Fast mobilization of resources (script/teams)
  - ✓ Fast remediation of known issues using known actions

Stage 4 - Event based Remediation/Rubook as a Service



- ✓ Engineers can focus on code (application logic) in the runbook rather than availability/resiliency of the runbook
- ✓ Integration with various monitoring tools
- ✓ Provides wrappers to connect with enterprise functions like change management, incident management and alerting services
- ✓ Runbook life cycle management
- ✓ Hub of enterprise runbooks to promote reuse
- ✓ Allows engineers to learn from the mistake of others and use their runbook (if applicable)

## Why did we build this Platform?

RUNBOOK AS A SERVICE PLATFORM AT CAPITAL ONE

- ✓ Application multi-region failover of databases like MySQL, PostgreSQL, etc.
- ✓ Automate Disaster Recovery (TREx)
- ✓ Disk space clean up
- ✓ Restart of failed instances
- ✓ Supports both Auto remediation and On-demand remediation
- ✓ Automated Diagnostics to save time for troubleshooting

Some use cases we have seen so far

RUNBOOK AS A SERVICE PLATFORM AT CAPITAL ONE

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## Automation + AI + People

ALWAYS  
ON!

Unified Operational Standards  
for DevOps Practices

Blameless Problem Management

Embed Automated Runbooks into  
Software Delivery Pipelines

Automate every Runbook &  
Failover Plans

ADVANCING INCIDENT MANAGEMENT AND OPERATIONAL EXCELLENCE

# Keeping your Enterprise Always On!