How to Build a Healthy On-Call Culture

Hello!

I am smalltown

MaiCoin Group Lead SRE

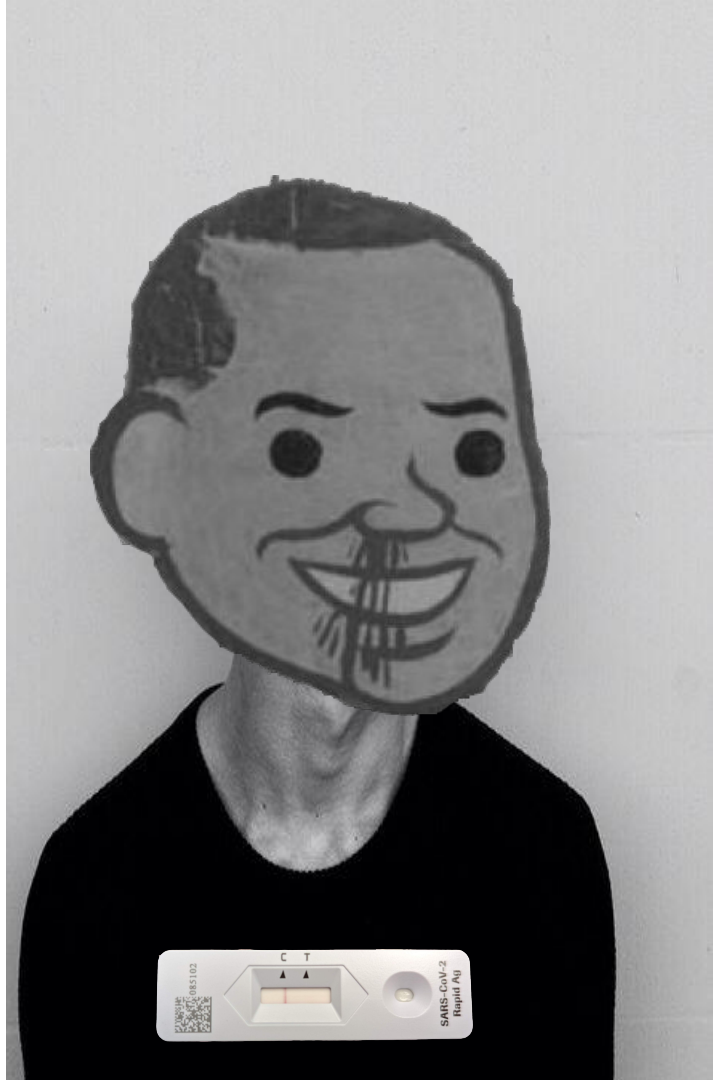
Taipei HashiCorp UG Organizer

AWS UG Taiwan Staff

HashiCorp

MaiCoin

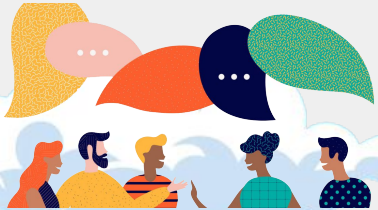
aws



Organization Type

On Call

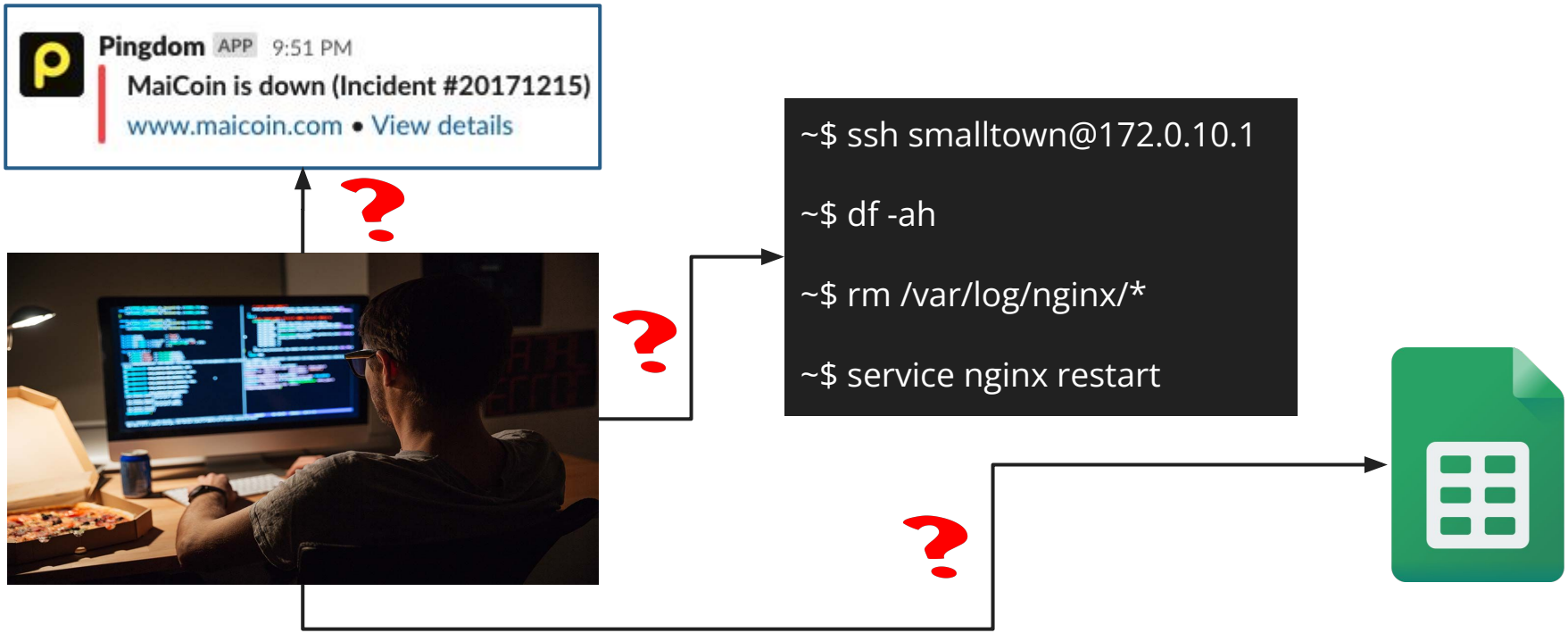
Monitoring



Root Cause Analysis

Incident Response

Join MaiCoin First Week (End of 2017)



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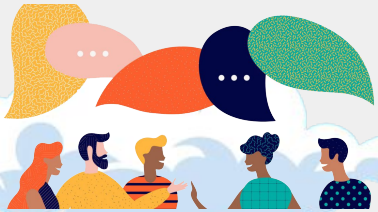


Root Cause Analysis

Incident Response

Why Need Monitoring?

- Service W/O Monitoring Just Like a Blind
  - Not Know Service Usual Health Status
  - No Notice When Something Bad Will/Has Happen(ed)
  - Not Investigate Issue After Incident
- No Monitoring -> No Measure -> No Quality

Common Monitoring Types

- End-To-End
  - Functionality
  - Performance
- Error Tracking

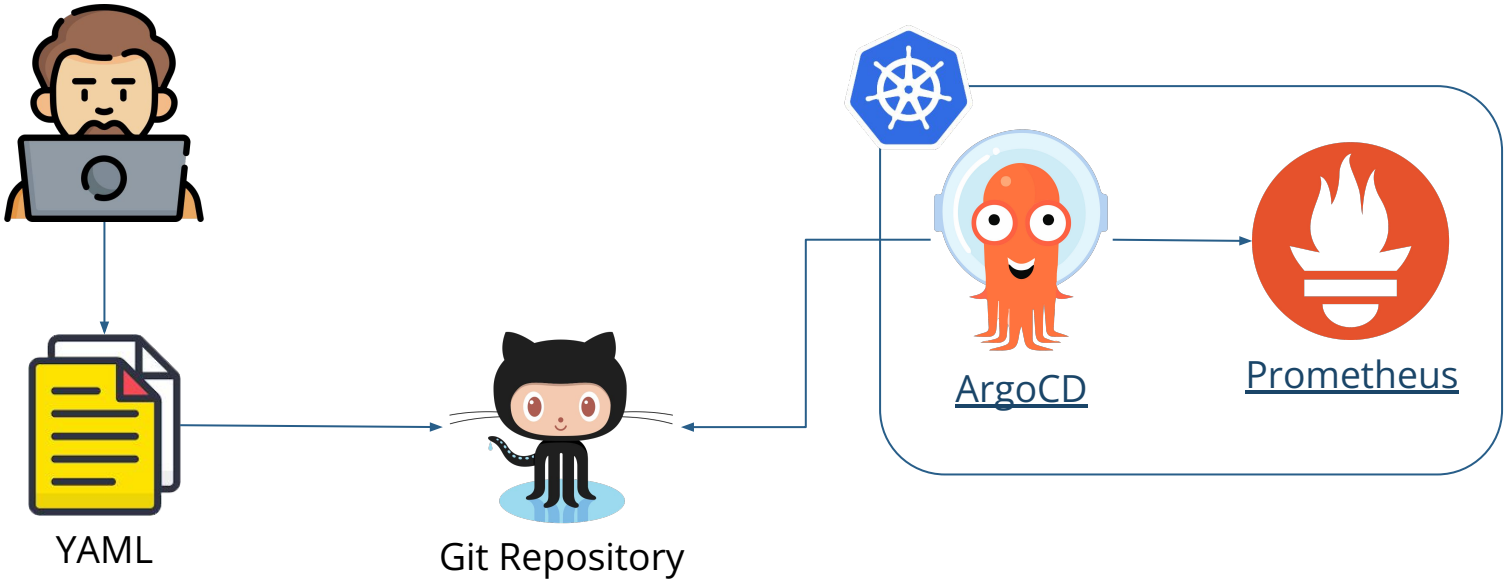
- Networking
  - Latency
  - Connectivity

- Infrastructure
  - CPU
  - Memory
  - Disk
  - ...

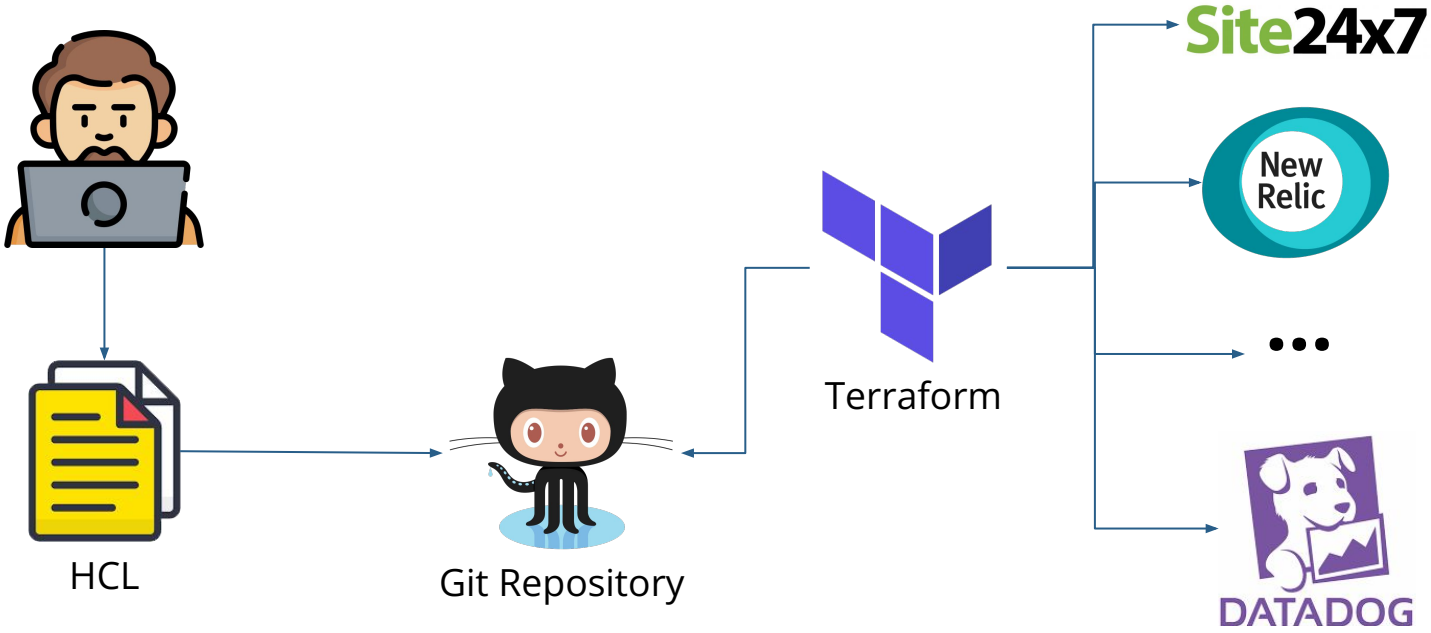
External Monitoring

- DNS
- Certificate
- Geolocation (Global Ping)
  - Routing
  - Submarine Cable
- Content Delivery Network
- Web Application Firewall
- ...

Monitoring As Code - Internal



Monitoring As Code - External



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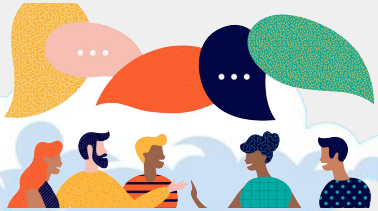
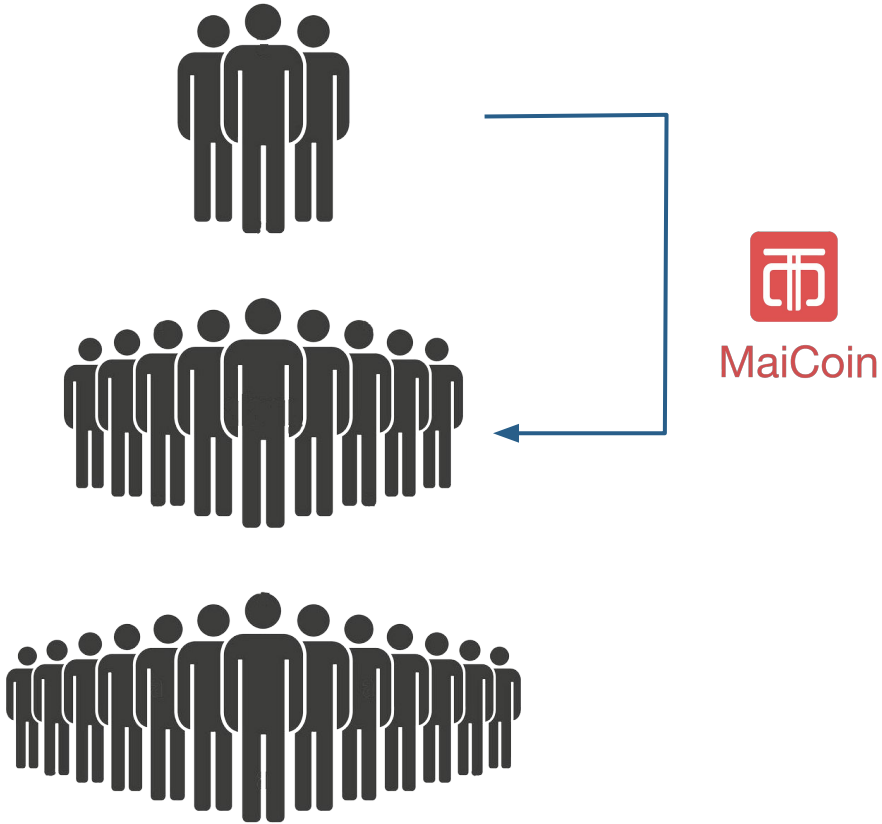


Root Cause Analysis

Incident Response

Organization Scale



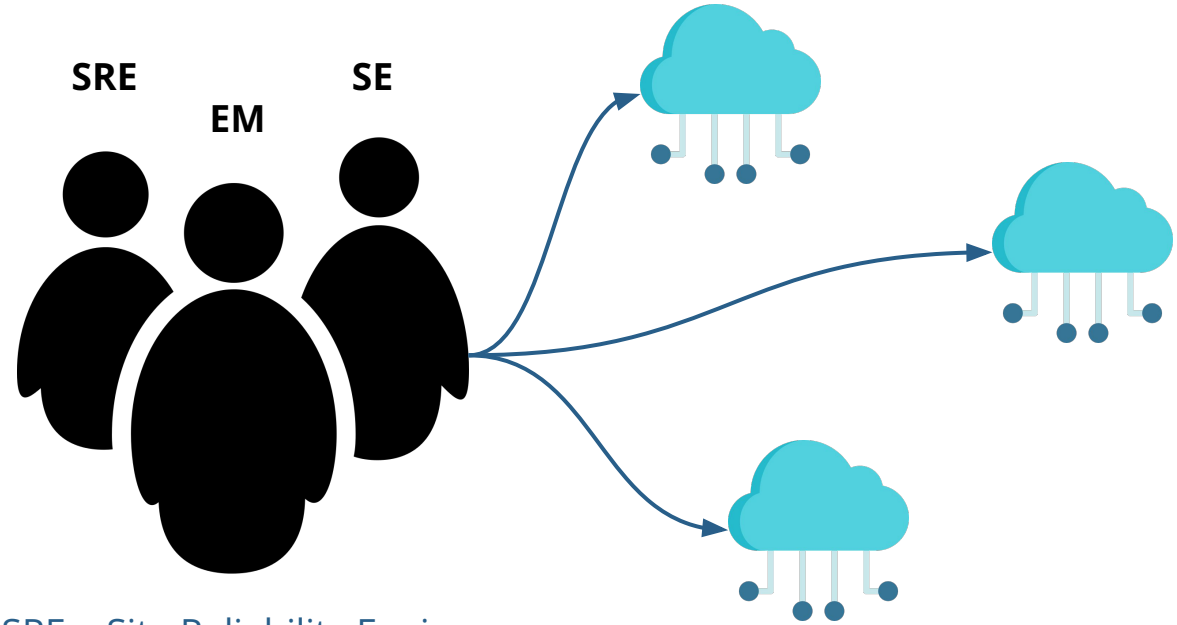
Organization Geographical Distribution

Organization Architecture - Traditional DC

Development

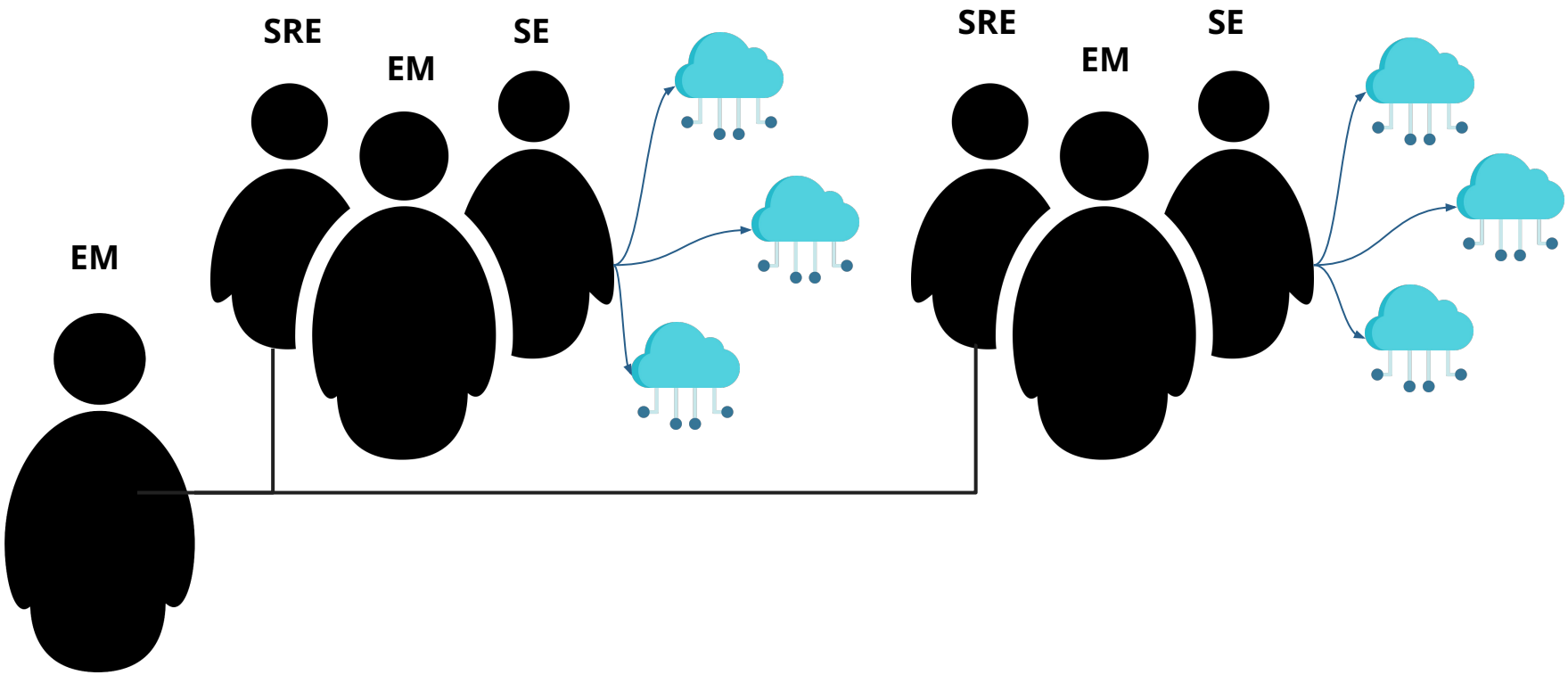
Operations

Organization Architecture - DevOps



SRE = Site Reliability Engineer
EM = Engineering Manager
SE = Software Engineer

Our Organization Architecture



Organization Type

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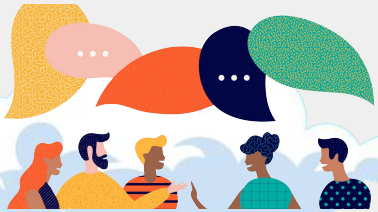


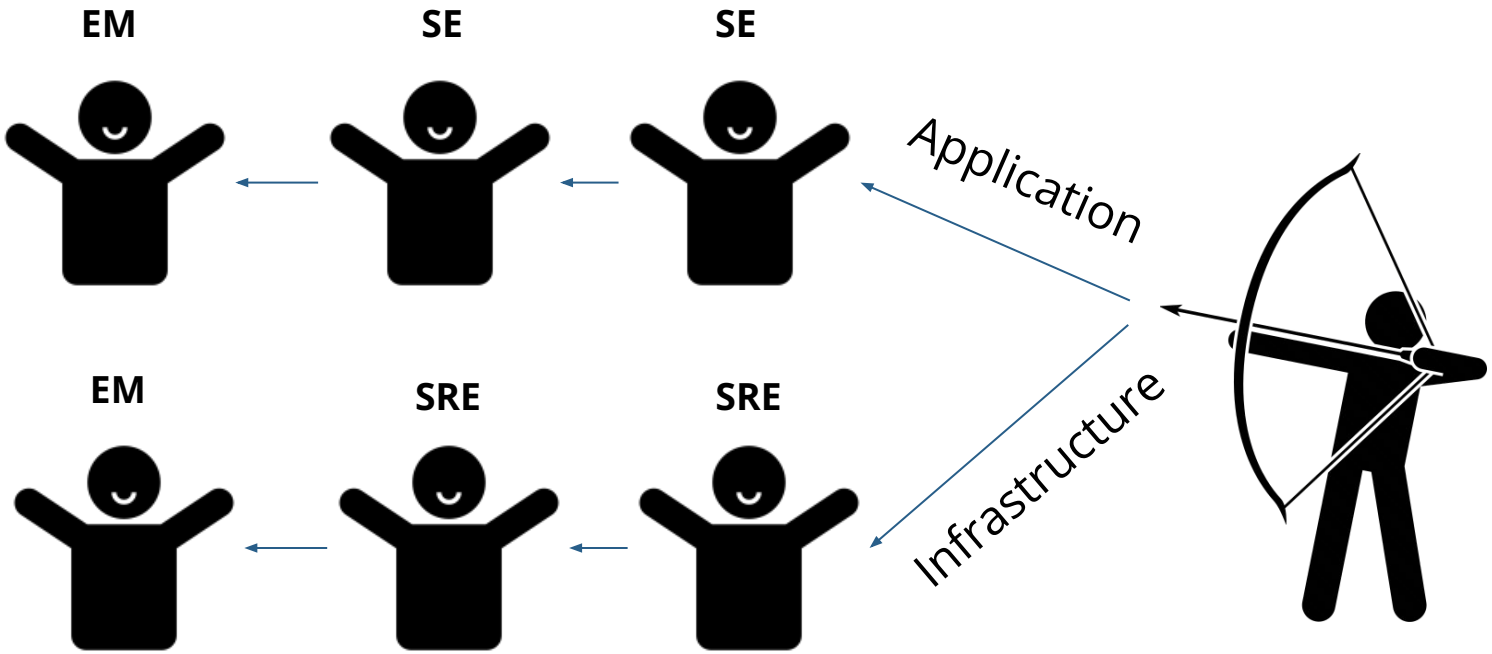
Root Cause Analysis

Incident Response

On Call Engineer Responsibility

- Routine Operation Job
- Handle Incident
- Runbook Refine/Writing
- Weekly On Call Report

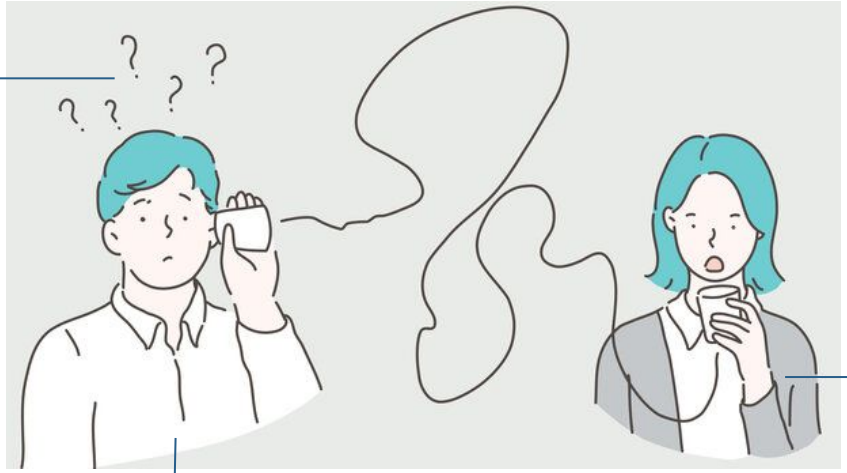
On Call Model - Two Tracks



Escalation Path

Notification Problem

Voice Call Notification
User Experience



Communication
Between Teams

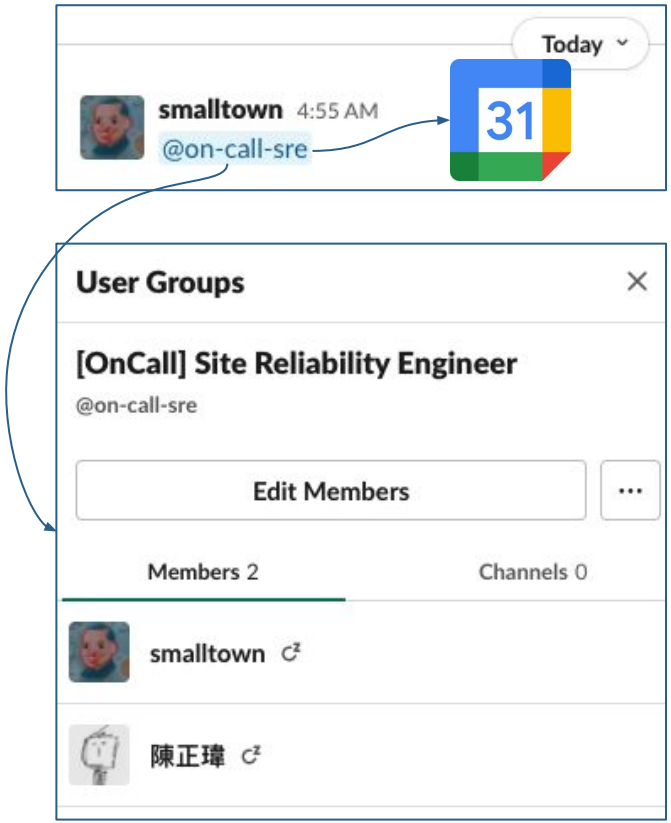
Arrange On Call Engineer Schedule

Notification System Architecture

Notification System - Rotation

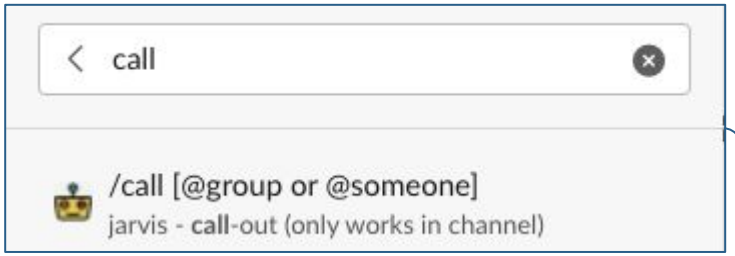
- On Call Model
- Rotation Frequency
- Fail to Answer a Page

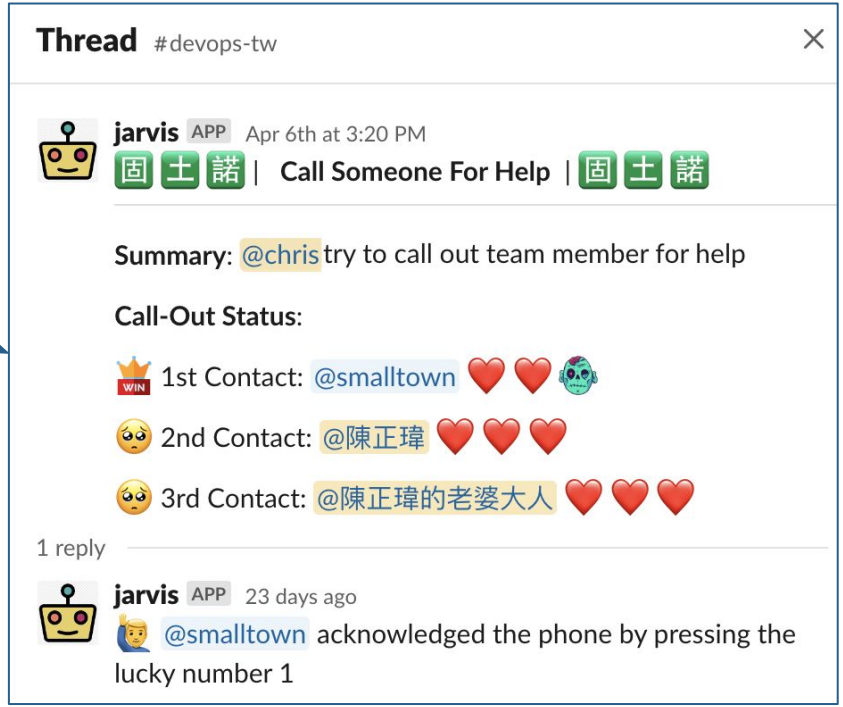
Notification System - Communication



- Slack User Group Break the Communication Cap
- Check Document -> Check Calendar -> Tag Group Name

Notification System - Effectiveness





- Contacts Phone Book -> Slack Command W/ User Group/Name
- Short Phone Call Notice -> Phone Call W/ Validation
- Notification Visibility -> Detail Status in Slack

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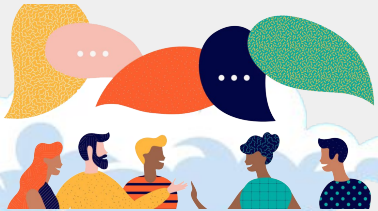
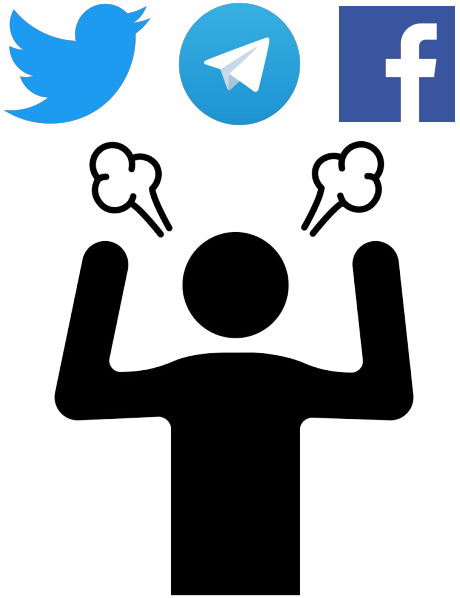


Root Cause Analysis

Incident Response

Aware Incident Before Customer



VS

Incident Handle Terminology

Role

- Incident Commander
- Tech Lead
- Communication Lead
- Engineering Manager

Incident Level

- S3
- S2
- S1
- S0

Incident Handle Process

Initiate Incident

Define Incident

Assign Roles

Investigate & Fixing

Verification

Start Maintenance

Maintenance End

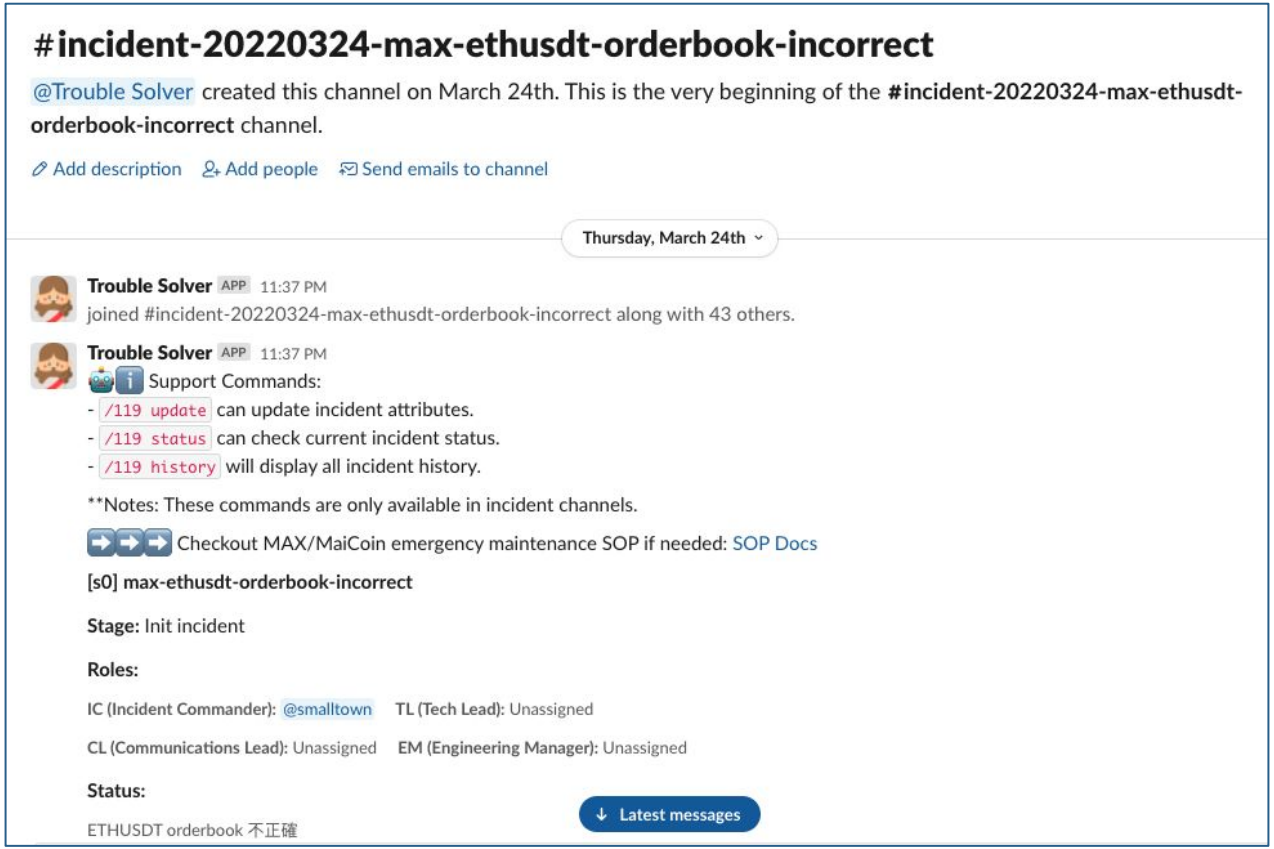
Restrospective

Initiate Notify

Recovery Notify

Enhancements

Incident Visibility - Internal



Incident Visibility - External

- Service Health Page
- Mobile App Push Notification
- Facebook, Telegram, Twitter… Customer/Vendor Communication Channel

Organization Type

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Monitoring

Root Cause Analysis

Incident Response

What is Root Cause Analysis (RCA)?

- A Systematic Process for Identifying “Root Causes” of Problems or Events and an Approach for Responding to Them
  - What Happened
  - How it Happened
  - Why it Happened…so
  - Actions for Preventing Reoccurrence are Developed

How to Prepare RCA?

- Incident Timeline
  - 2022/04/29 16:00 Receive Alert from Prometheus
  - 2022/04/29 16:03 Start Incident Response
  - ...
- FIndings/Root Cause
  - The HTTP Status Code Return 400
  - Finding TLS Certificate Expired
- Follow-up/Corrective Action
  - Monitoring All TLS Certificate **[Ticket: ID-1234][Owner: smalltown][Status: On-Going]**

Blameless Culture

Organization Type

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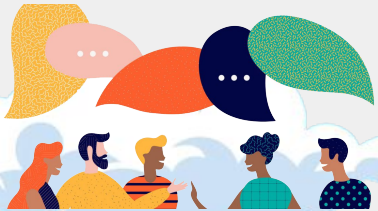

Root Cause Analysis

THANKS!

ANY QUESTIONS?

You can find me at my office:

- MicroService Engineer
- Backend Engineer
- Frontend Engineer
- ...