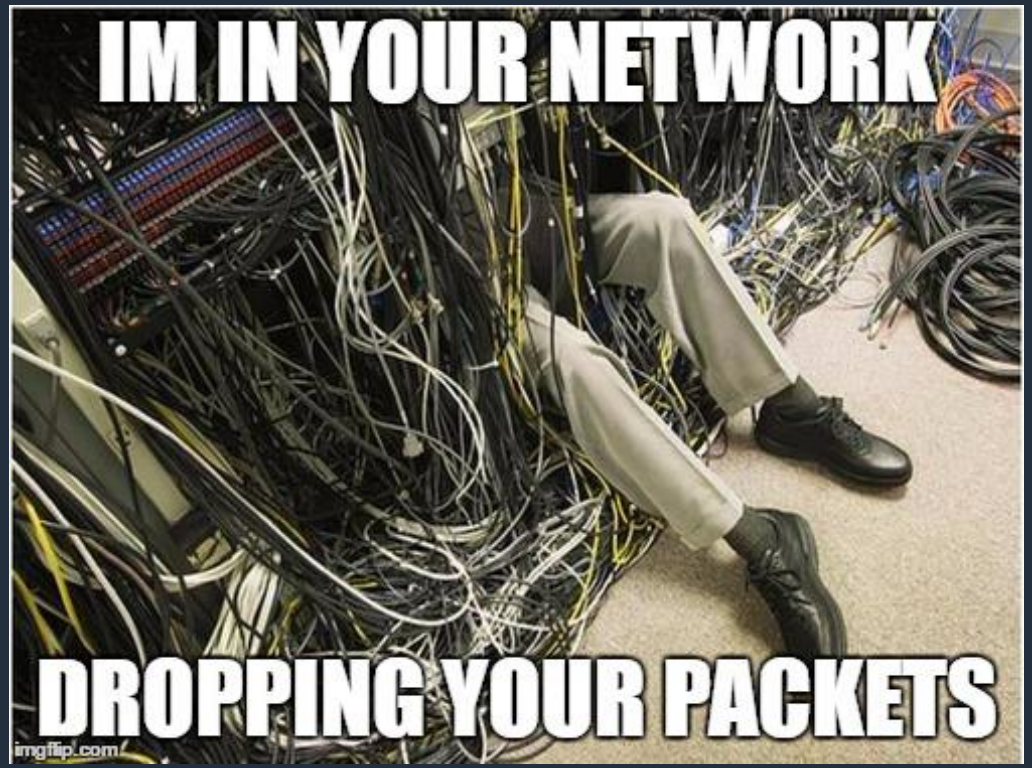

aws
COMMUNITY DAY
AHMEDABAD

aws

COMMUNITY DAY



aws
COMMUNITY DAY

“Everything fails, all the time”

Werner Vogels
CTO Amazon

aws

COMMUNITY DAY

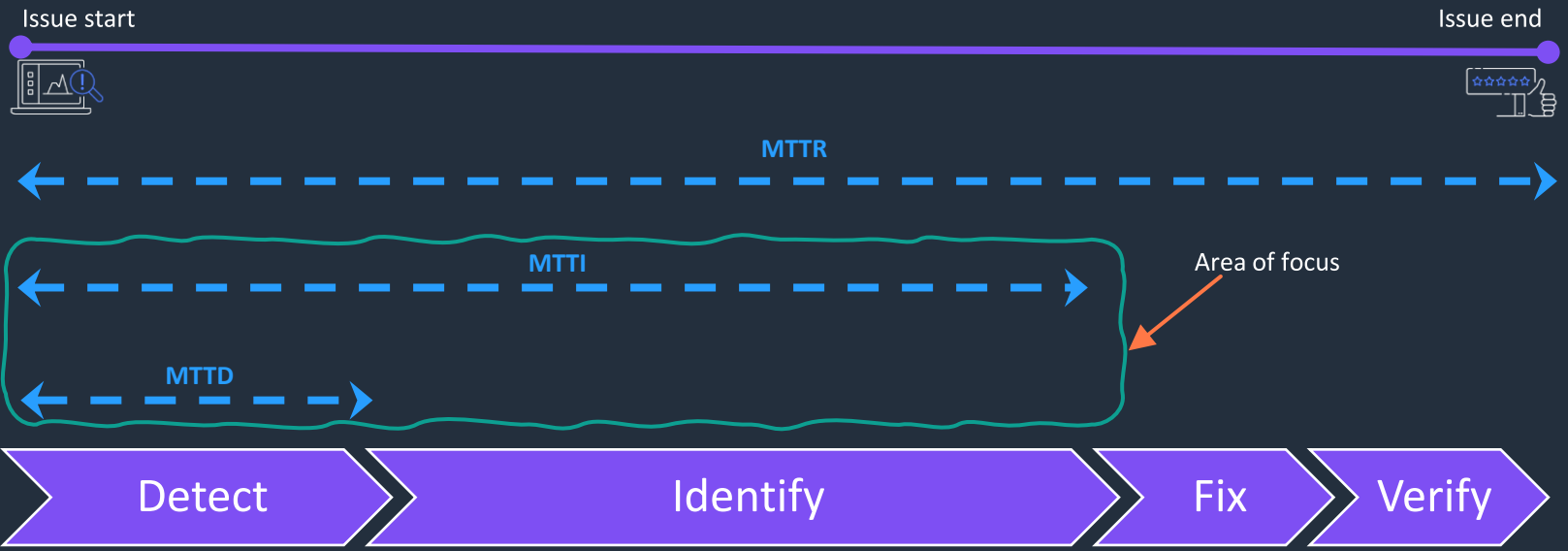
The Art of Insights: AWS cloud native Observability Essentials

Ashish Patel
Solutions Architect
ashishkp @ashishkp4u

Nishant Dhiman
Solutions Architect
nishant-dhiman

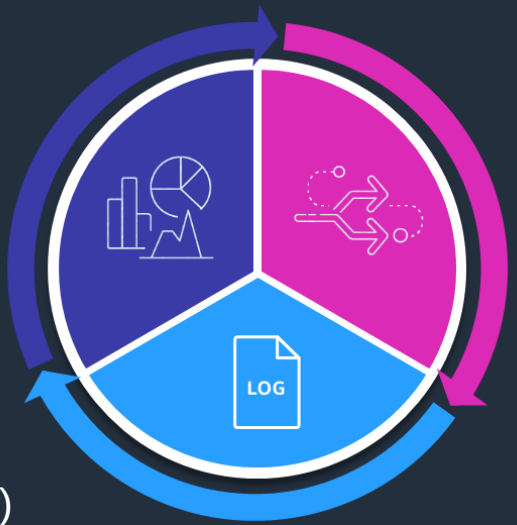
aws
COMMUNITY DAY

Issue timeline



aws
COMMUNITY DAY

Foundations of observability



Metrics

Numeric data measured at various time intervals (time series data); SLIs (request rate, error rate, duration, CPU%, etc.)

Traces

A trace represents a single user's journey across multiple applications and systems (usually microservices)

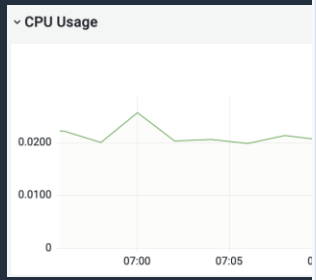
Logs

Timestamped records of discrete events that happened within an application or system, such as a failure, an error, or a state transformation

aws
COMMUNITY DAY

Foundations of observability

Metrics

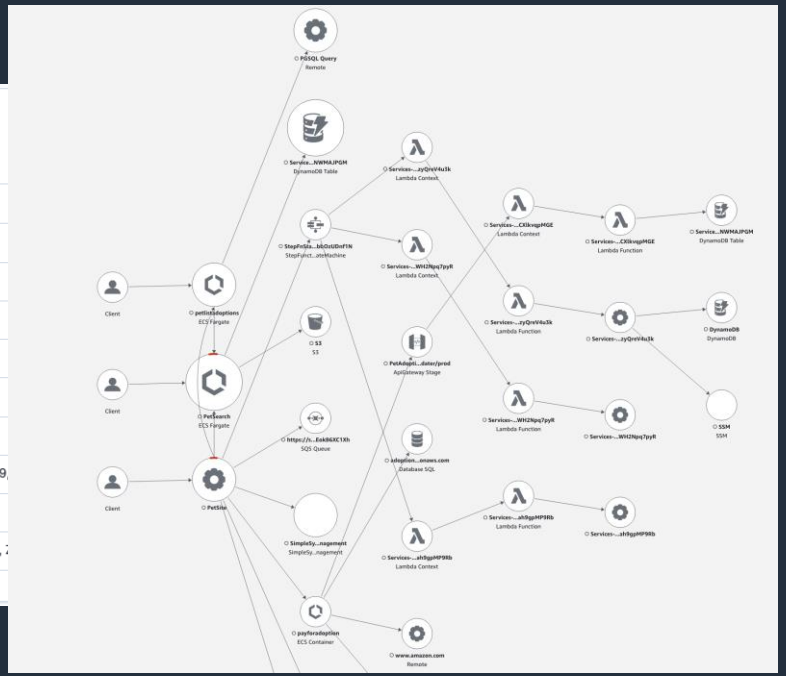


Logs

[eCommerce] Orders

Time	category	sku
Oct 14, 2022 @ 10:57:07.000	Women's Clothing	ZO0060600606, ZO0052600526
Oct 14, 2022 @ 10:47:02.000	Women's Shoes	ZO0371303713, ZO0030600306
Oct 14, 2022 @ 10:38:24.000	Men's Clothing	ZO0583405834, ZO0458504585
Oct 14, 2022 @ 10:19:41.000	Women's Clothing	ZO0265702657, ZO0706107061
Oct 14, 2022 @ 10:13:12.000	Men's Clothing	ZO0130201302
Oct 14, 2022 @ 10:03:50.000	Women's Clothing, Women's Shoes	ZO0032600326, ZO0014000140
Oct 14, 2022 @ 09:56:38.000	Women's Shoes, Women's Clothing	ZO0019900199, ZO0643606436
Oct 14, 2022 @ 09:49:26.000	Men's Shoes, Men's Clothing	ZO0690206902, ZO0297302973, ZO0565905659
Oct 14, 2022 @ 09:43:41.000	Women's Shoes	ZO0019300193, ZO0367503675
Oct 14, 2022 @ 09:43:41.000	Men's Accessories, Men's Clothing	ZO0467104671, ZO0424404244, ZO0571305713,
Oct 14, 2022 @ 09:37:55.000	Women's Shoes	ZO0367603676, ZO0704407044

Traces



aws
COMMUNITY DAY

Observability Strategy

What do I collect?

What do my customers want?

↓

What do stakeholders need?

↓

What are my KPIs?

What do I observe?

Customer experience

↑

Metrics, logs, and traces

↑

Identify data sources

How do I act?

Alert when outcomes are at risk

↓

Evaluate impact

↓

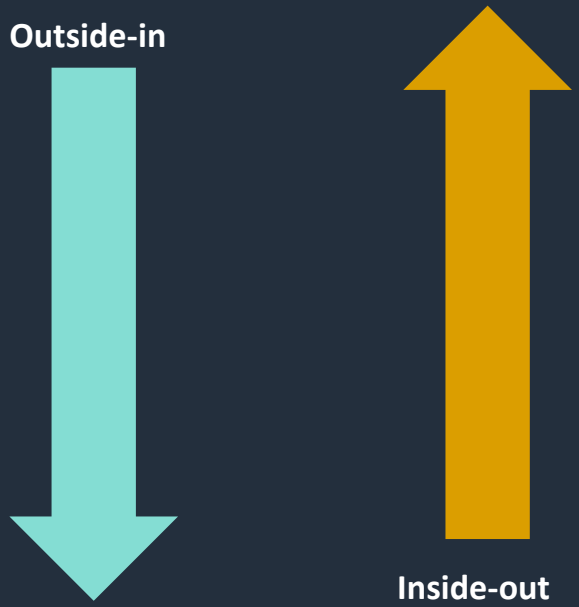
Establish root cause and fix

aws
COMMUNITY DAY

Observability Strategy KPIs

Begin with establishing what good looks like to your **end users**

Examples include
- Web page response times
- Failed purchases
- JavaScript errors
- New feature adoption rates
- Conversion rates and new customer acquisition



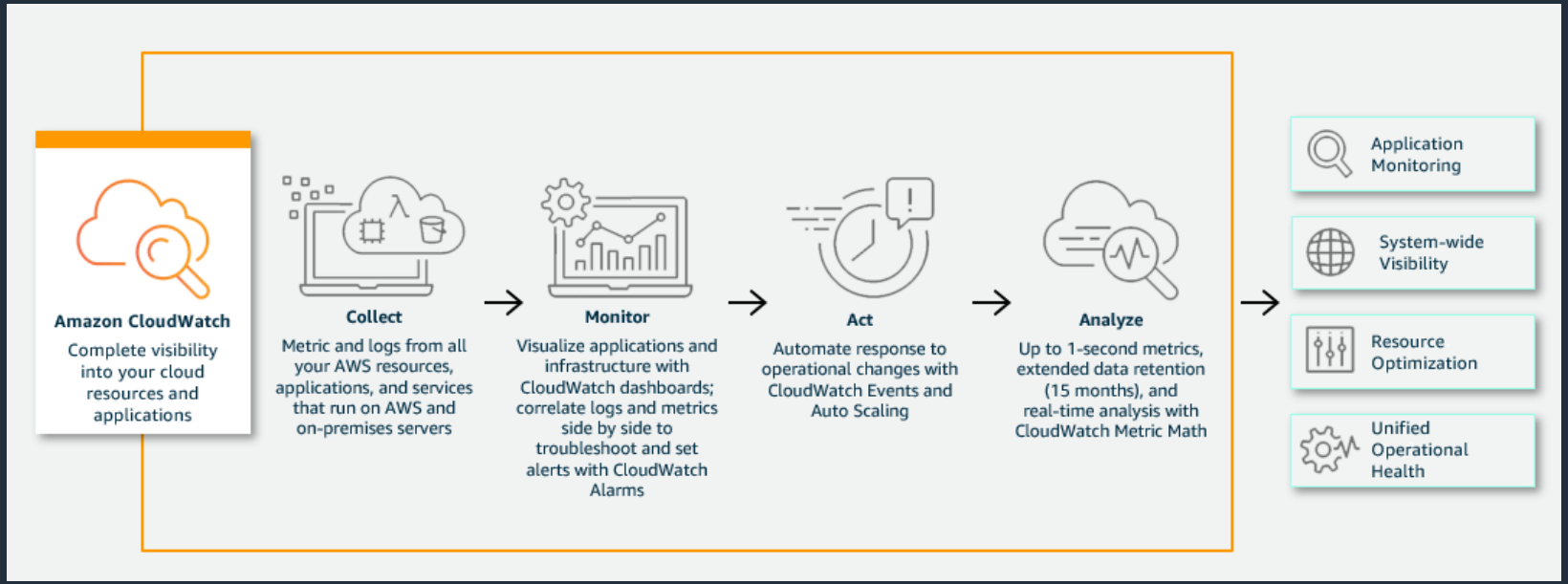
Begin by establishing what good looks like for your **backend applications**

Examples include
- Slow queries
- Integration health
- Container restarts
- Errors, faults, and retries
- CPU utilization, Disk usage, IOPS

What you observe should reflect your desired **business** outcomes

aws
COMMUNITY DAY

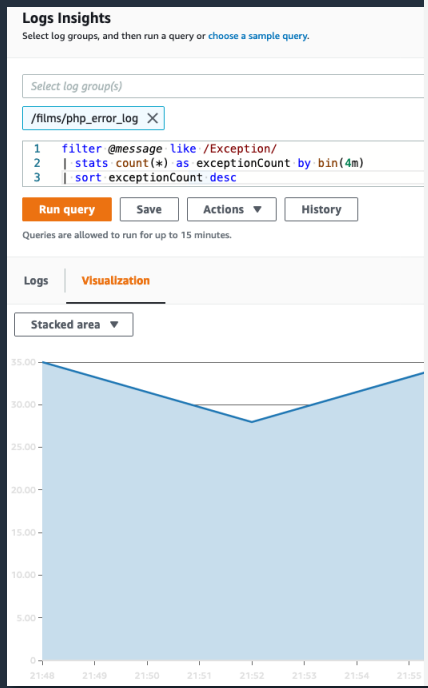
Amazon CloudWatch



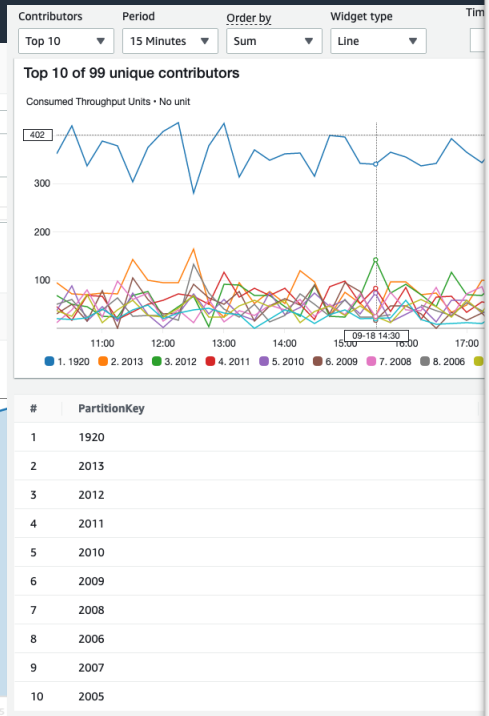
aws
COMMUNITY DAY

CloudWatch key features

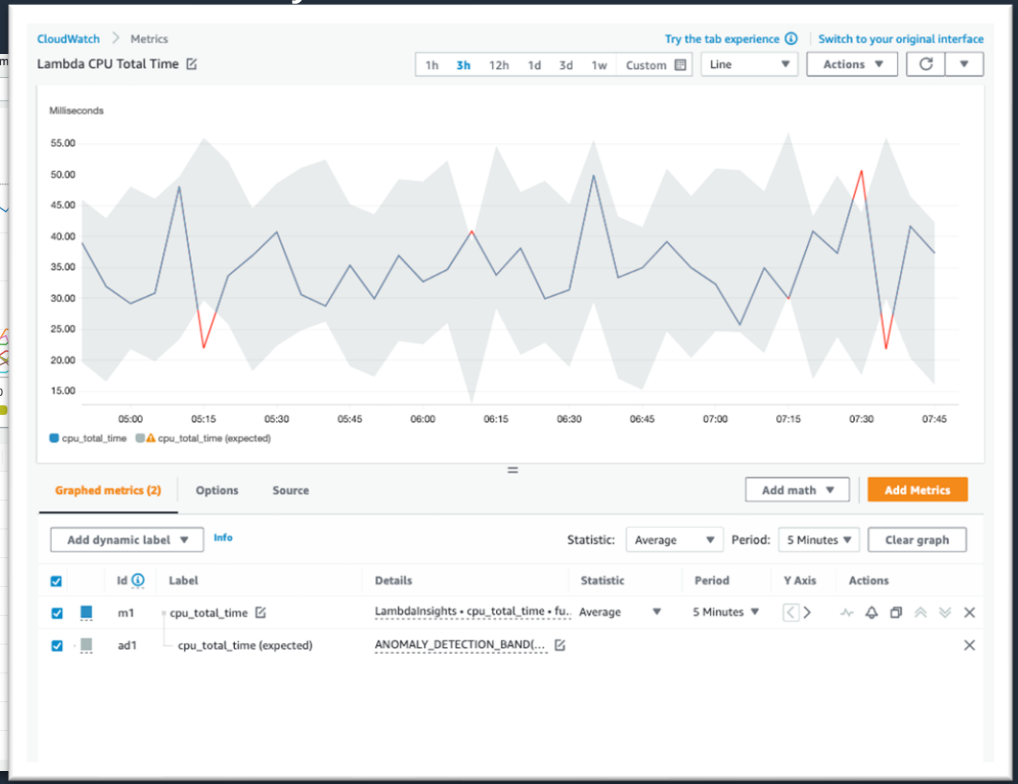
Logs Insights



Contributor Insights

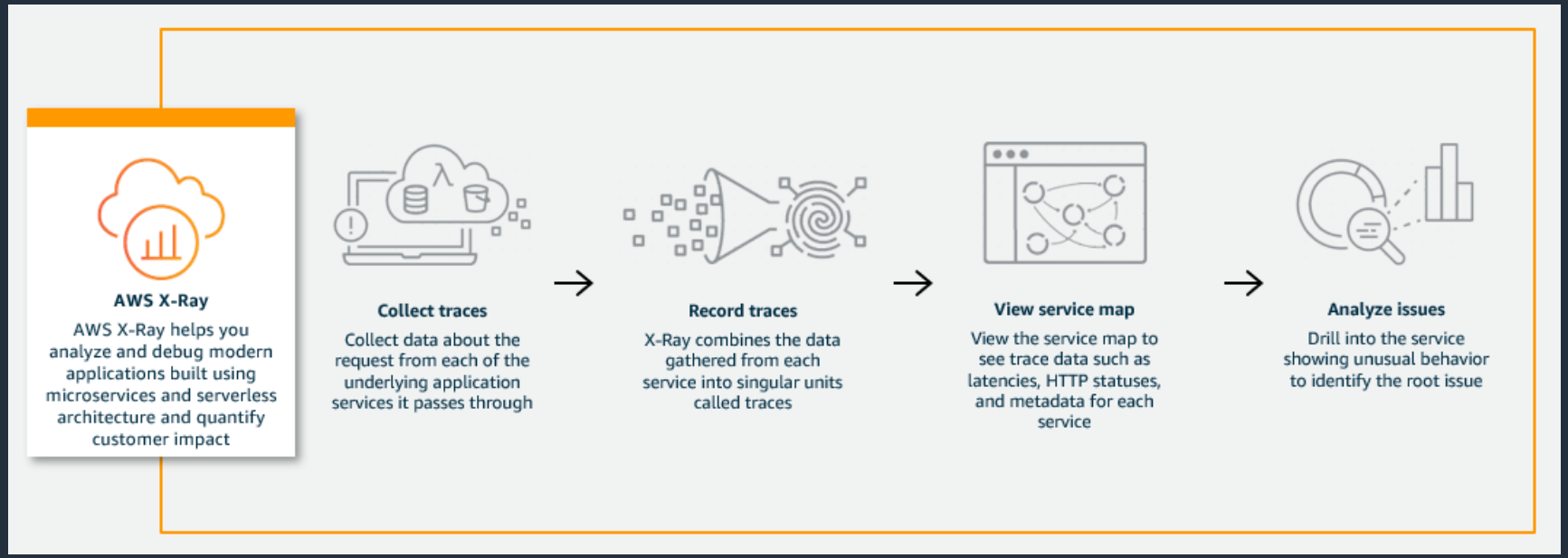


Anomaly Detection



aws
COMMUNITY DAY

AWS X-Ray

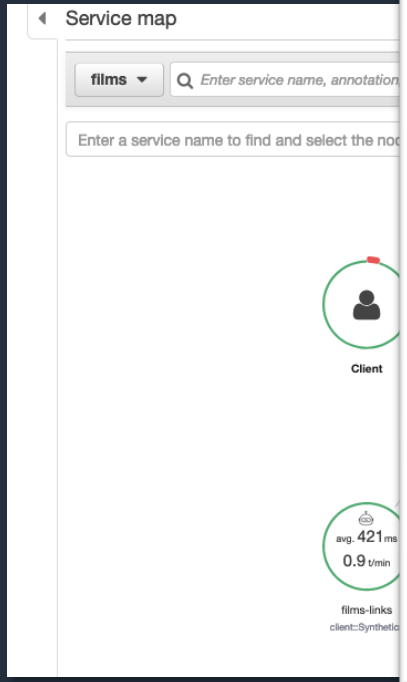


aws

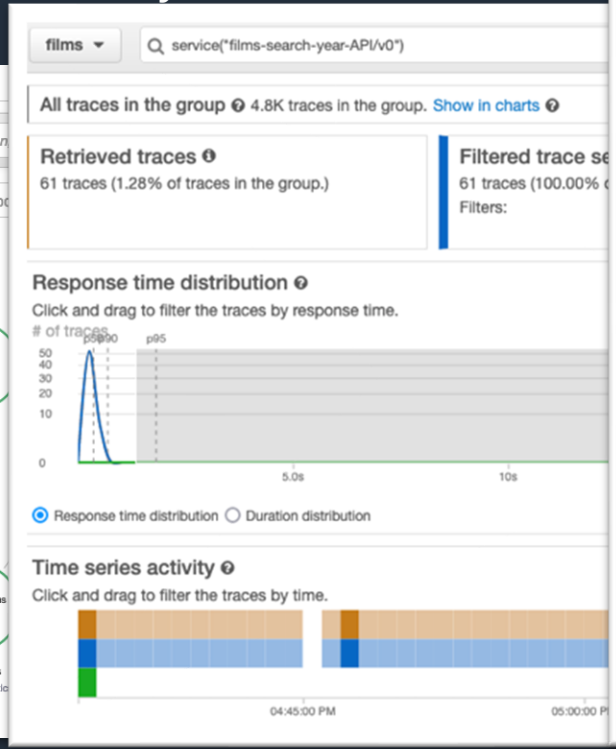
COMMUNITY DAY

X-Ray key features

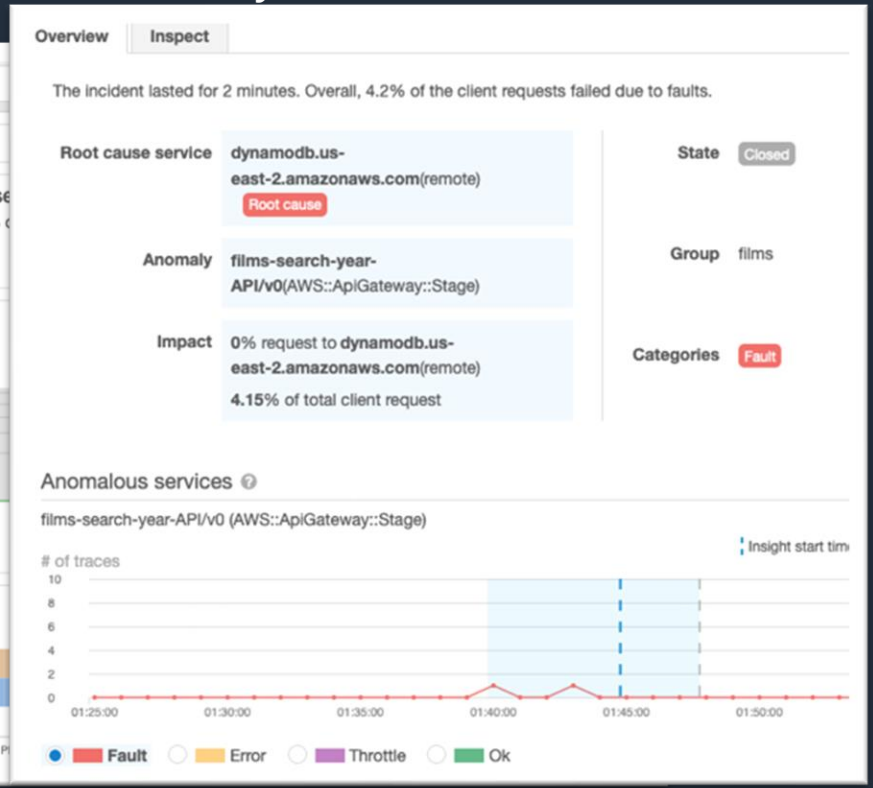
Service Map



Analytics



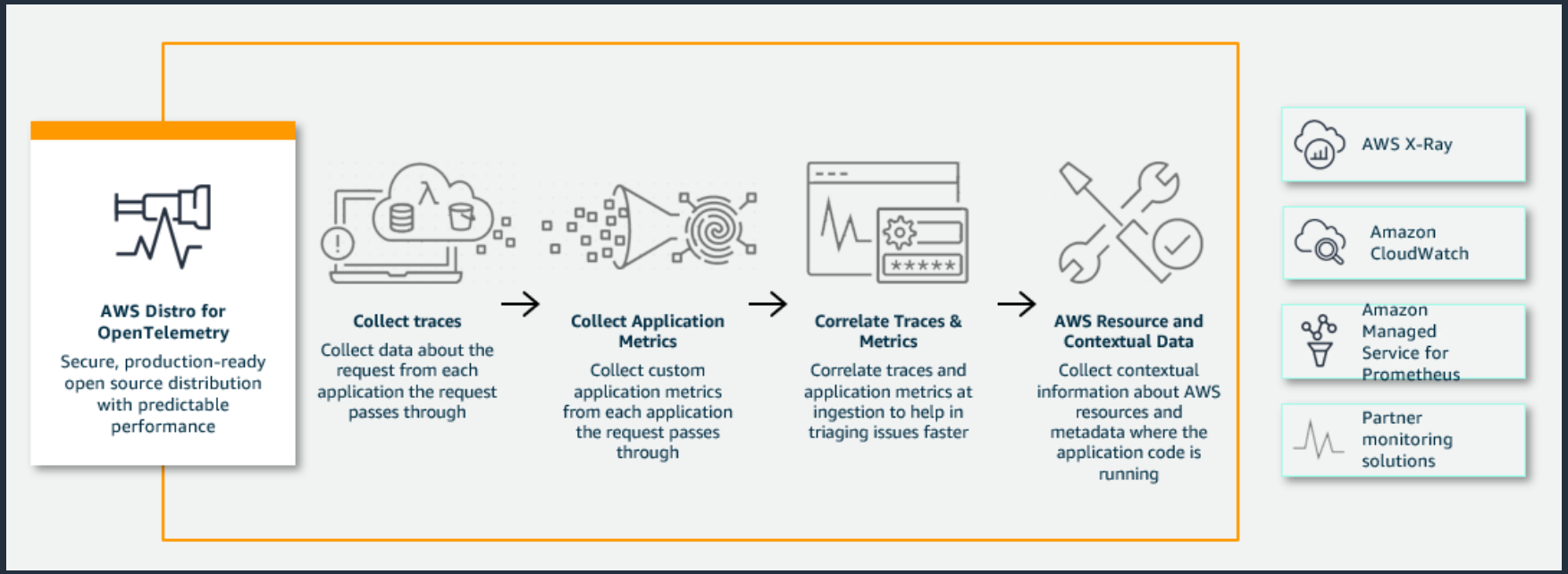
Anomaly Detection



aws

COMMUNITY DAY

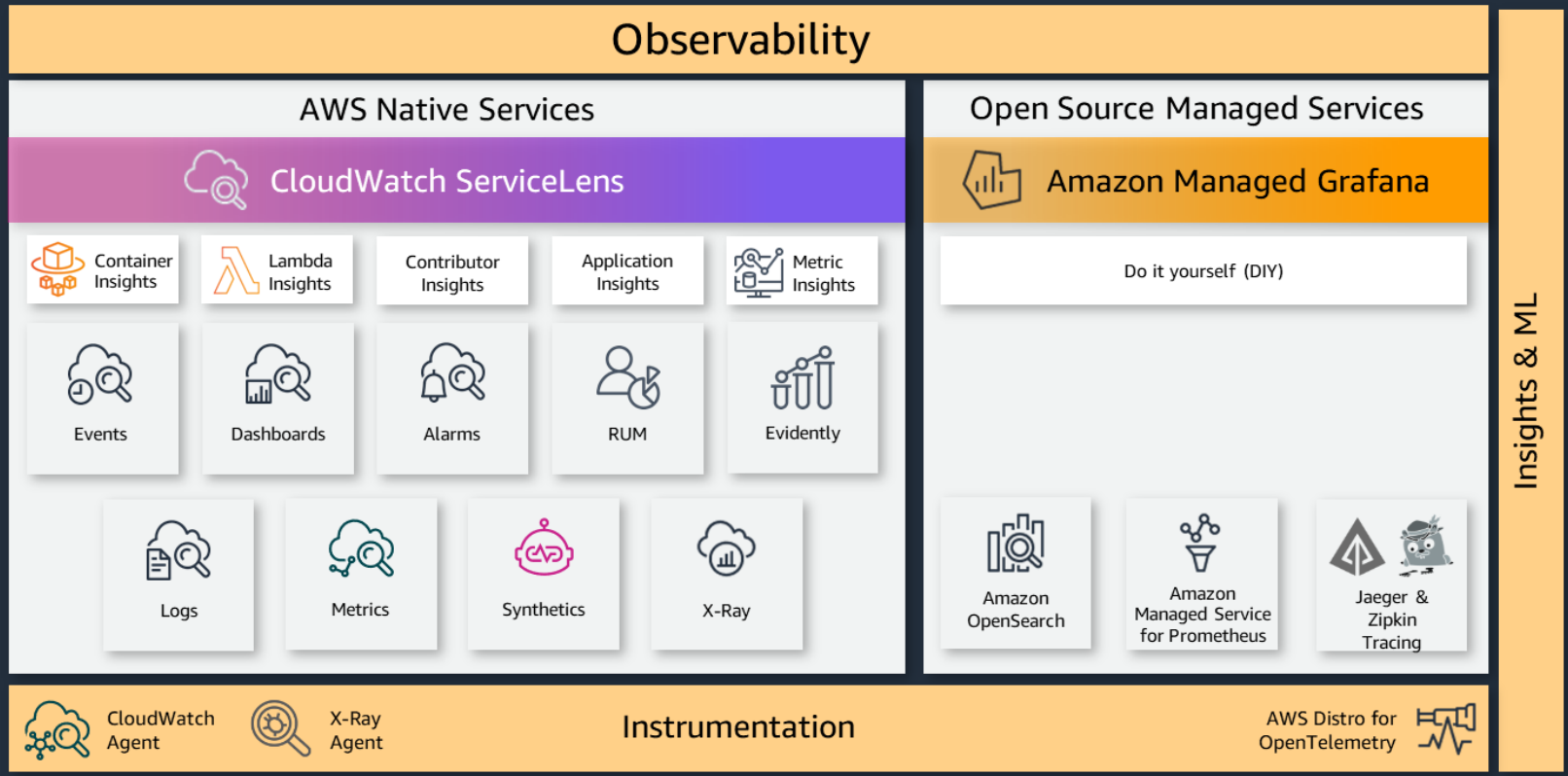
AWS Distro for Open Telemetry (ADOT)



aws

COMMUNITY DAY

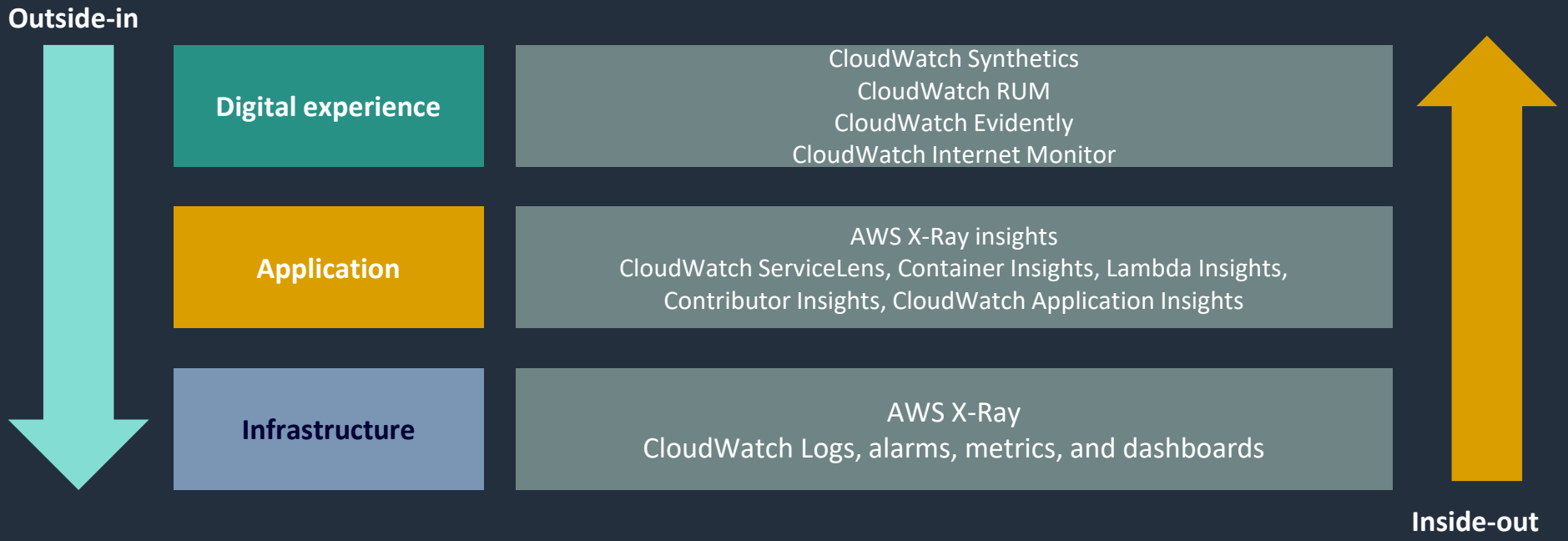
AWS-native observability stack



aws

COMMUNITY DAY

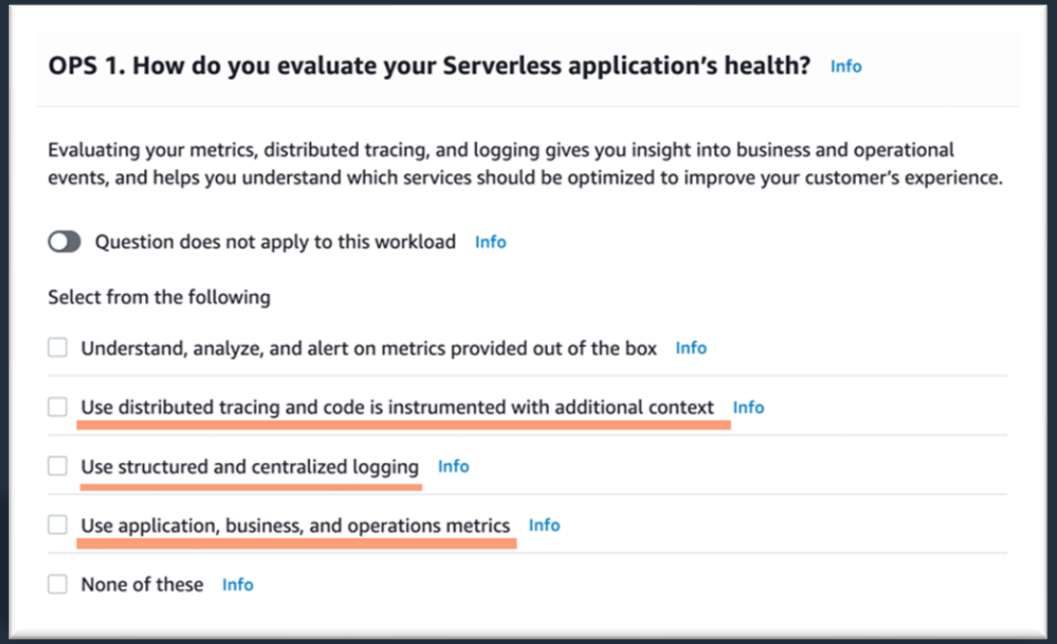
AWS-native observability stack



aws
COMMUNITY DAY

Serverless Lens in AWS Well-Architected Tool

Focus Areas



aws
COMMUNITY DAY

Serverless application model

Operational excellence best practices

- Adopt a modern way to build applications
  - Use infrastructure as code
  - Define and deploy infrastructure in stages isolated in separate environments/accounts

AWS Serverless Application Model (SAM)

```
AWSTemplateFormatVersion: '2010-09-09'
Transform: AWS::Serverless-2016-10-31
Resources:
  GetProductsFunction:
    Type: AWS::Serverless::Function
    Properties:
      Handler: index.getProducts
      Runtime: nodejs10.x
      CodeUri: src/
      Policies:
        - DynamoDBReadPolicy:
            TableName: !Ref ProductTable
      Events:
        GetResource:
          Type: Api
          Properties:
            Path: /products/{productId}
            Method: get
  ProductTable:
    Type: AWS::Serverless::SimpleTable
```

aws
COMMUNITY DAY

AWS Lambda Powertools

Powertools is a developer toolkit to implement Serverless best practices and increase developer velocity.

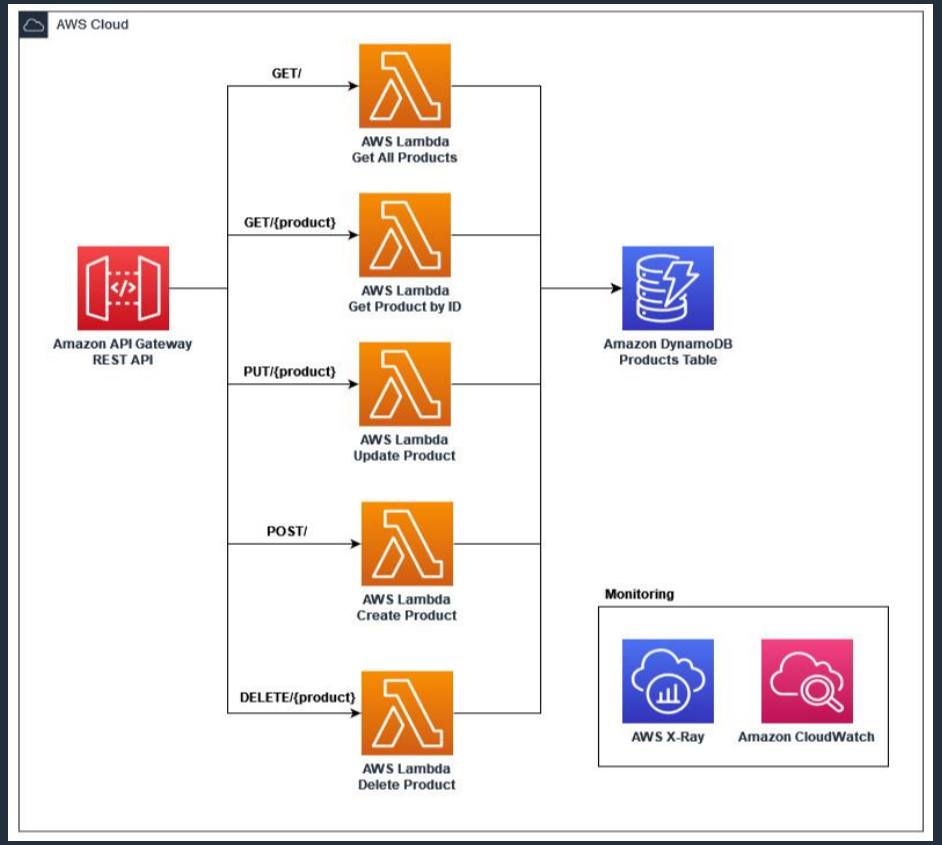
Key Features

- Logger
- Idempotency
- Metrics
- Parameters
- Tracer

aws
COMMUNITY DAY

Sample Architecture

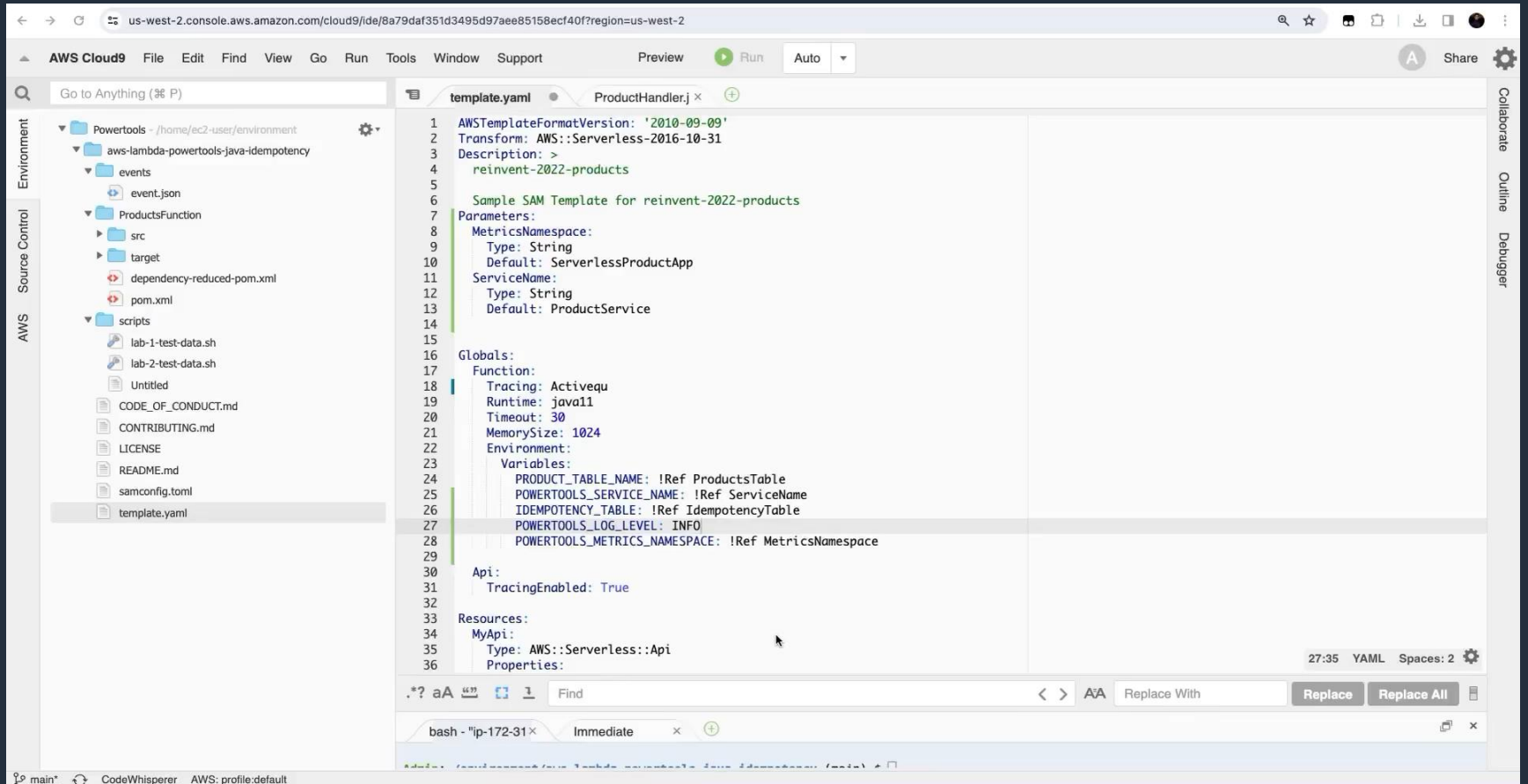
Demo



aws

COMMUNITY DAY

Demo



aws
COMMUNITY DAY

AWS
User Groups
Ahmedabad

Thank You

Questions ?

Ashish Patel
Solutions Architect
ashishkp @ashishkp4u

Nishant Dhiman
Solutions Architect
nishant-dhiman