AWS re:Invent

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DOP320

Observability: Best practices for improving developer productivity

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Agenda

Introduction to observability

Typical troubleshooting workflow

AWS services in observability

New and improved troubleshooting workflow

Labs

What’s next?

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What is observability?

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What is observability?

Observability is a measure of how well internal states of a system can be inferred from knowledge of its external outputs

Monitoring tells you whether a system is working; observability lets you understand why it isn't working

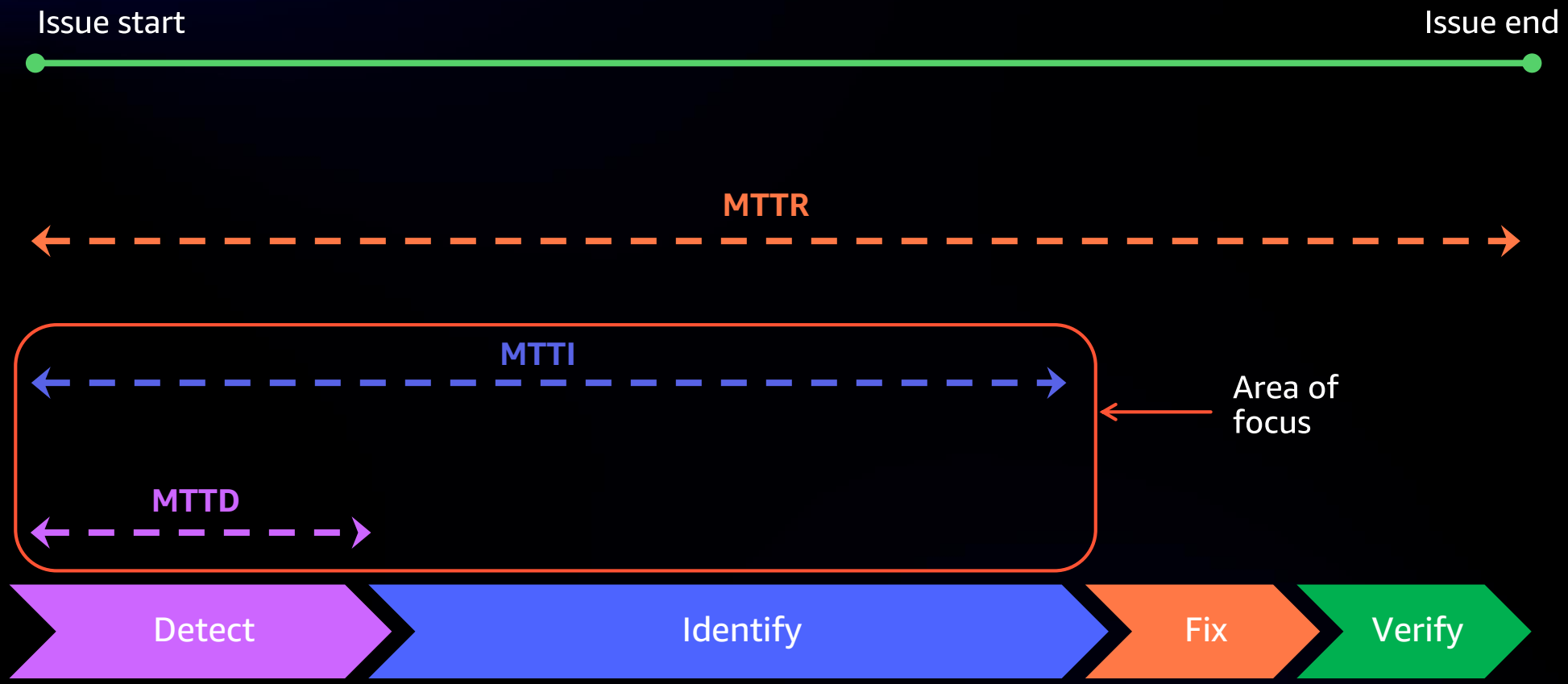
Good observability allows you to answer the questions you **didn’t know that you needed to ask**

Source: Wikipedia, “Observability.” https://en.wikipedia.org/wiki/Observability

aws

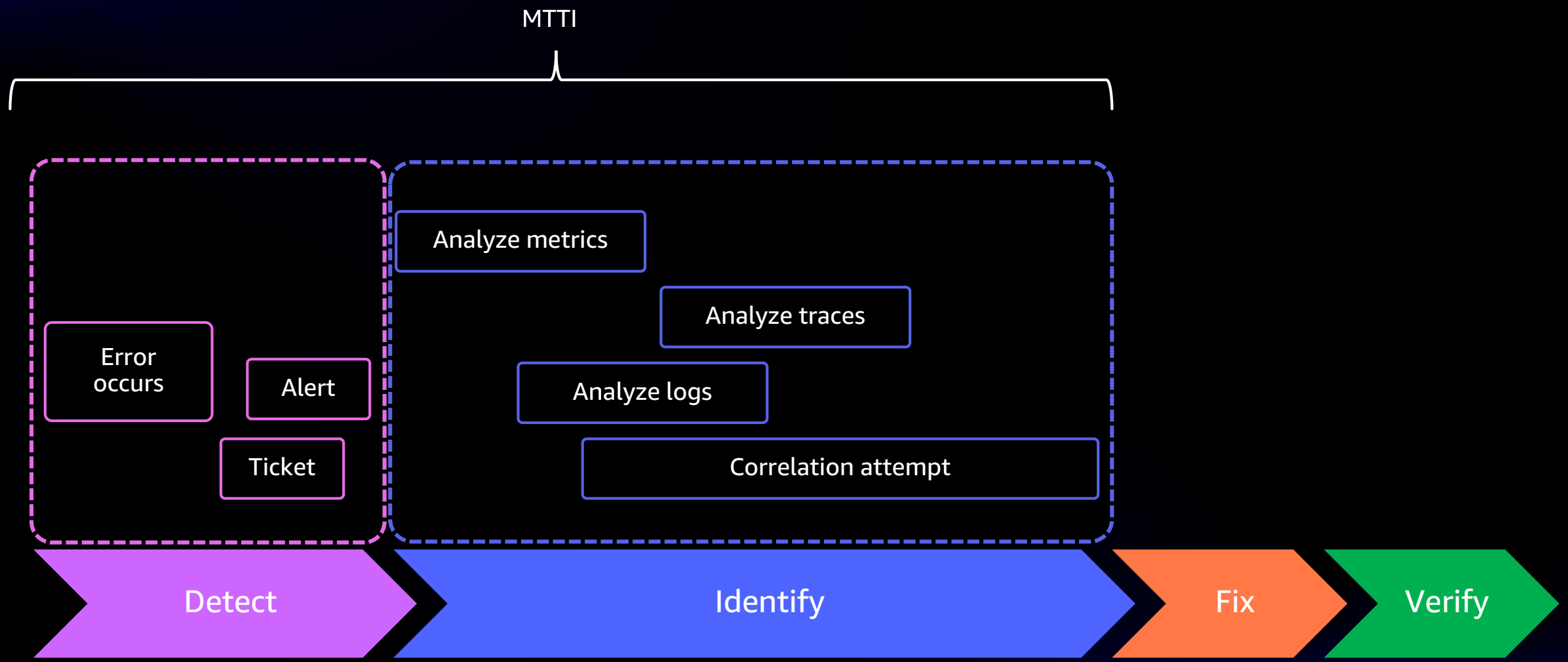
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Issue timeline



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Typical troubleshooting workflow

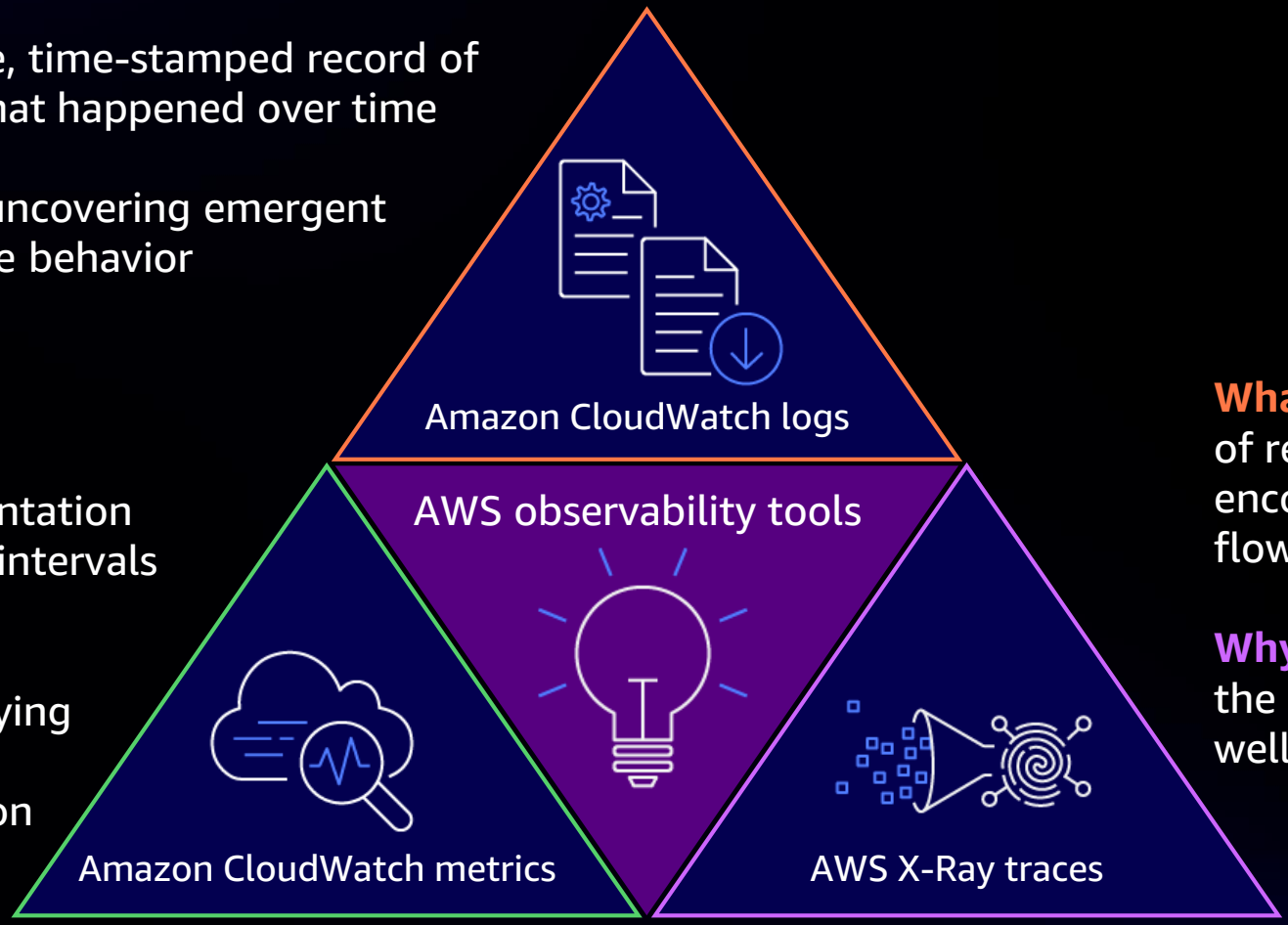


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Cloud-native foundational services

What: Immutable, time-stamped record of discrete events that happened over time

Why: Useful for uncovering emergent and unpredictable behavior



What: Numeric representation of data measured over intervals of time

Why: Useful for identifying trends, mathematical modeling, and prediction

What: Representation of a series of related distributed events that encode the end-to-end request flow through a distributed system

Why: Provides visibility into both the path traversed by a request as well as the structure of a request

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AWS OBSERVABILITY

AWS NATIVE MONITORING SERVICE

CloudWatch ServiceLens

Container Insights

Lambda Insights

Synthetics

Contributor Insights



CloudWatch Logs



CloudWatch Metrics



AWS X-Ray

OPEN-SOURCE MANAGED SERVICES



Amazon Managed Service for Grafana

Do it Yourself (DIY)



Amazon OpenSearch Service logs



Amazon Managed Service for Prometheus



Jaeger & Zipkin —Tracing

INSTRUMENTATION



CloudWatch Agent



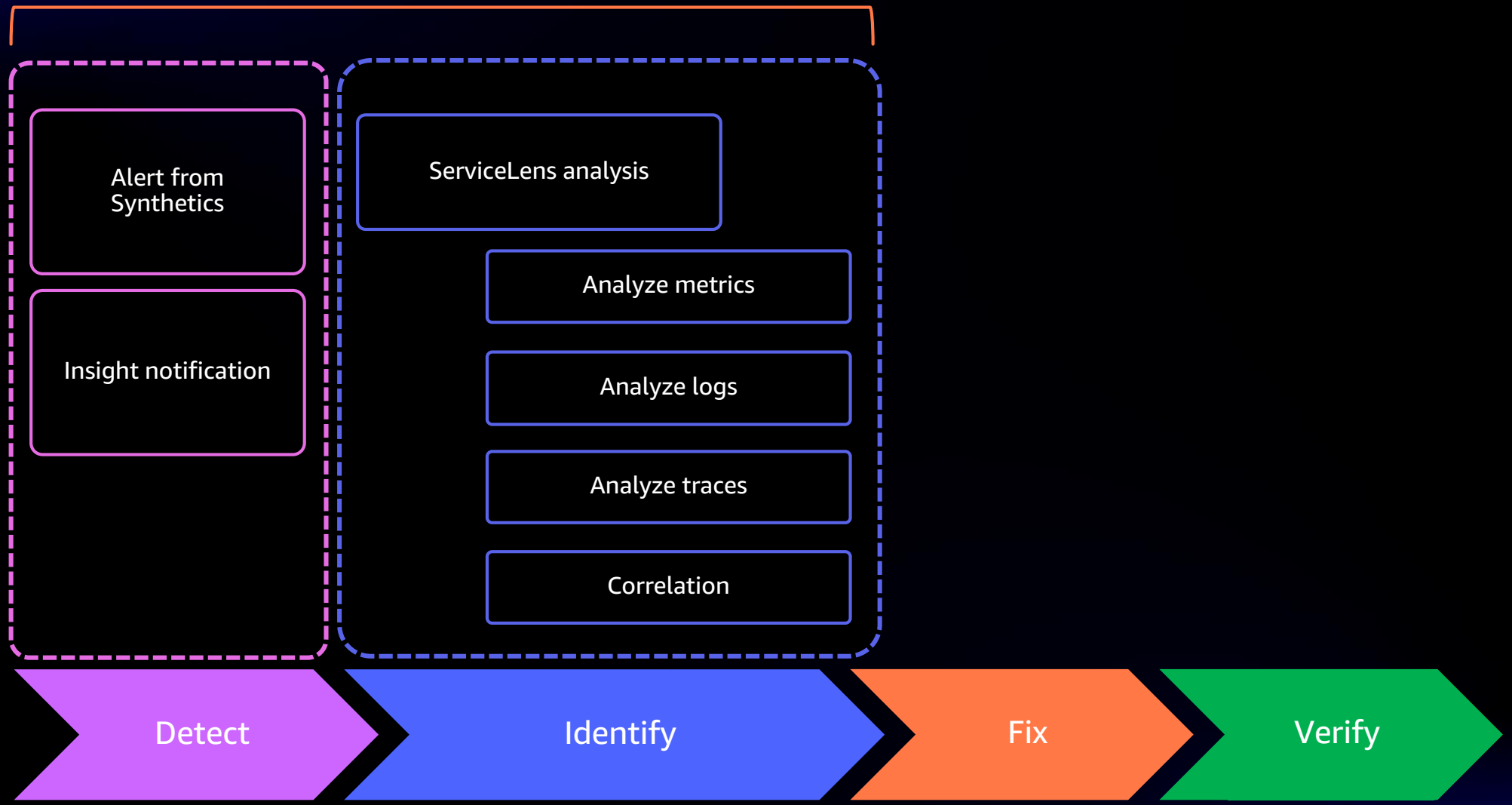
X-Ray agent



AWS Distro for OpenTelemetry (ADOT)

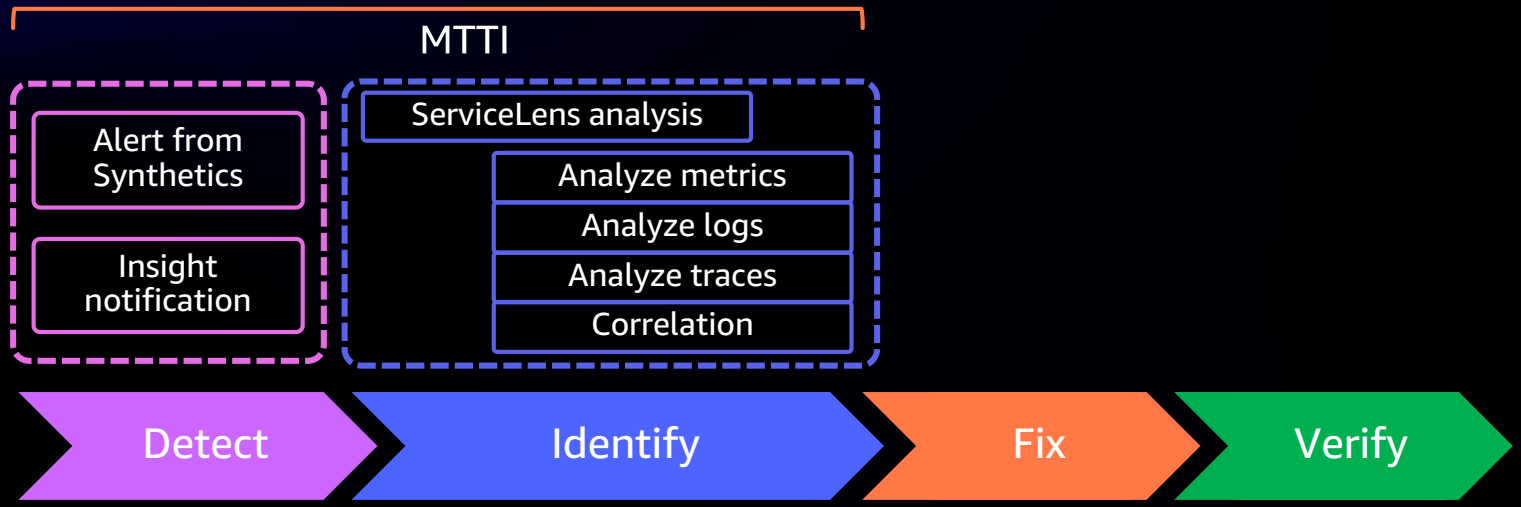
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New troubleshooting workflow

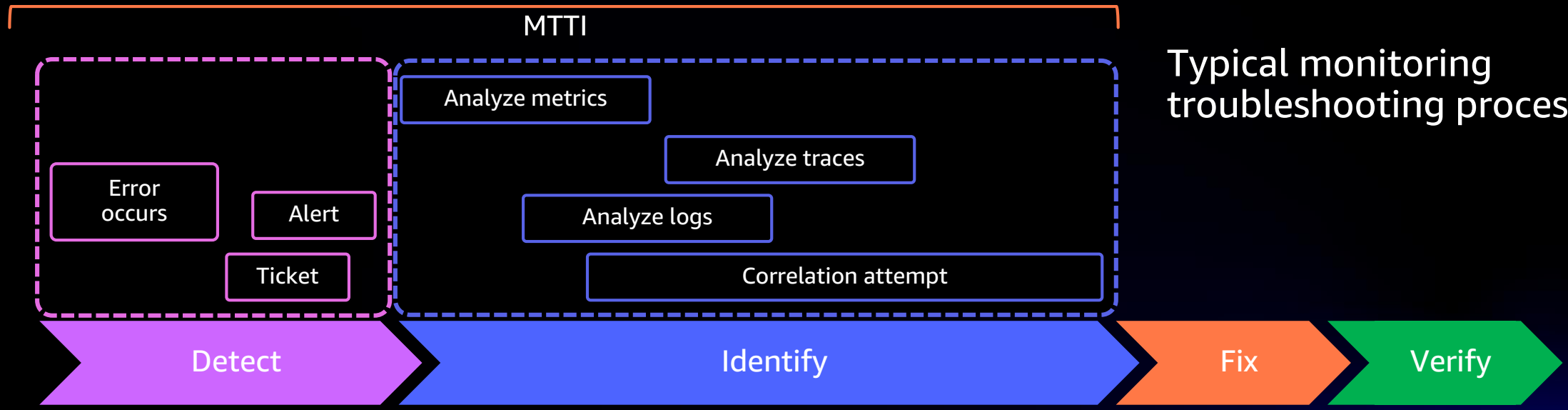


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Comparison



Using AWS observability tools



Typical monitoring troubleshooting process

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Summary

- Purpose-built features that allow you to reduce MTTD and MTTI
- Correlate logs, metrics, and traces in one place
- Deep integration with other AWS services
- Automatic potential root cause identification

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Into the labs!

https://observability.workshop.aws

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What’s next?

Regardless of who you are and where you operate workloads, AWS observability tools can help

Visit the complete AWS observability workshop at https://observability.workshop.aws to learn about more tools that complete your observability journey

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Services in scope for this workshop

- Event Engine Access
  - Event Hash: 54c7-1fbb2da184-a5
- Environment setup
  - Using Event Engine
- Metrics
- Alarms
- Logs insights
- Dashboards
- CloudWatch ServiceLens
- Amazon Managed Service for Prometheus
- Amazon Managed Grafana

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Thank you!

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