AWS re:Invent

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XNT302

Implementing observability for .NET apps on AWS

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Agenda

1. Why observability matters

2. Introduction to observability

3. How to implement observability for .NET apps (lots of demos!)

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Why observability matters

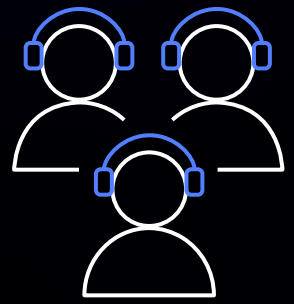
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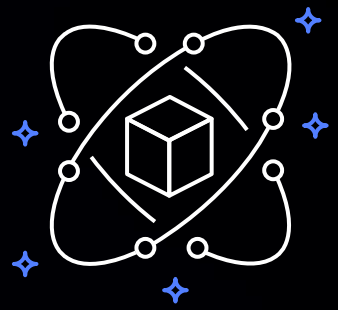
Technology transformation trends



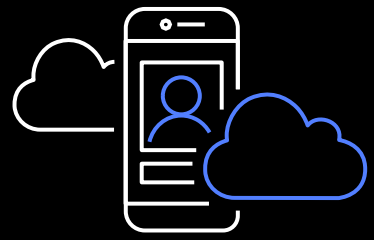
Microservices



Polyglot applications



Ephemeral environments



Cloud-native applications

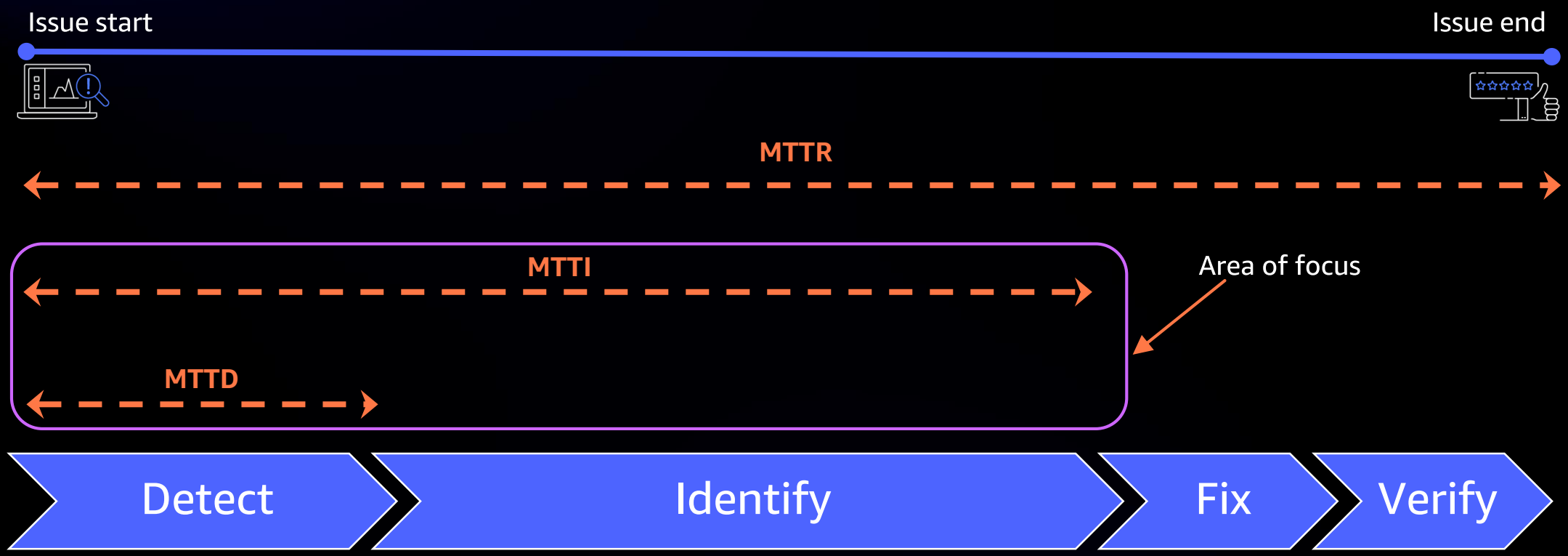
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Lifecycle of an issue



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Issue timeline

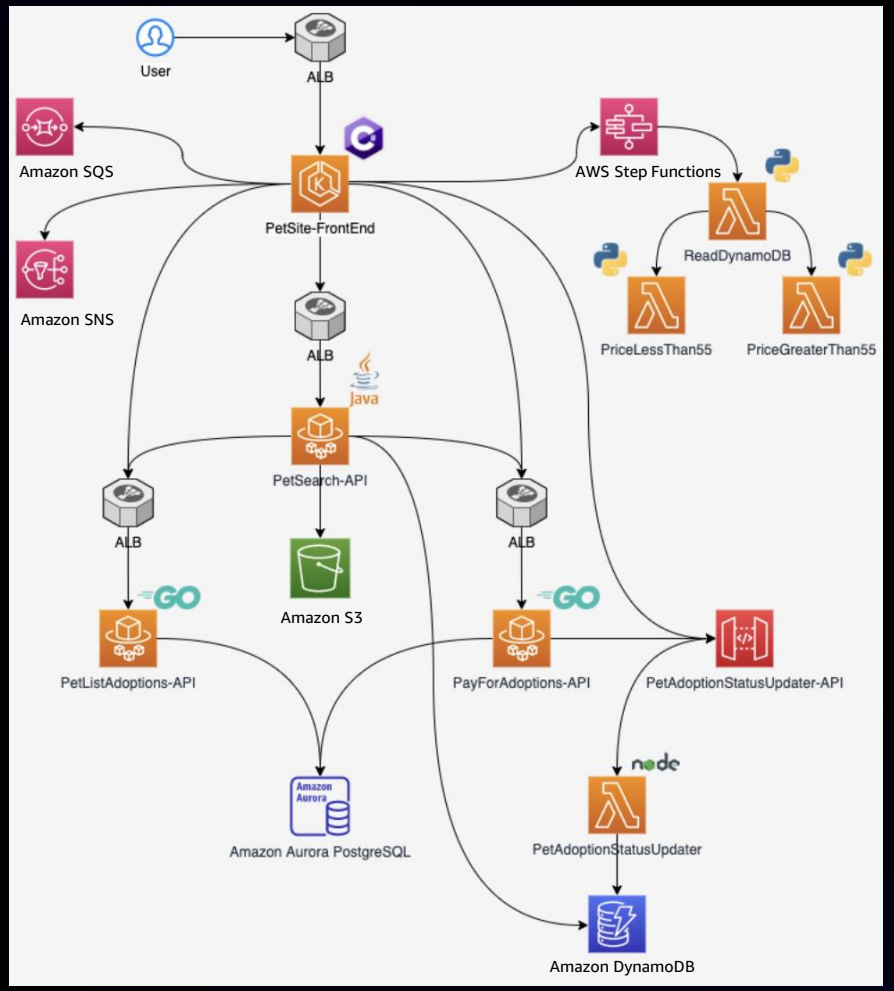


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Introduction to observability

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Observability workshop



https://observability.workshop.aws

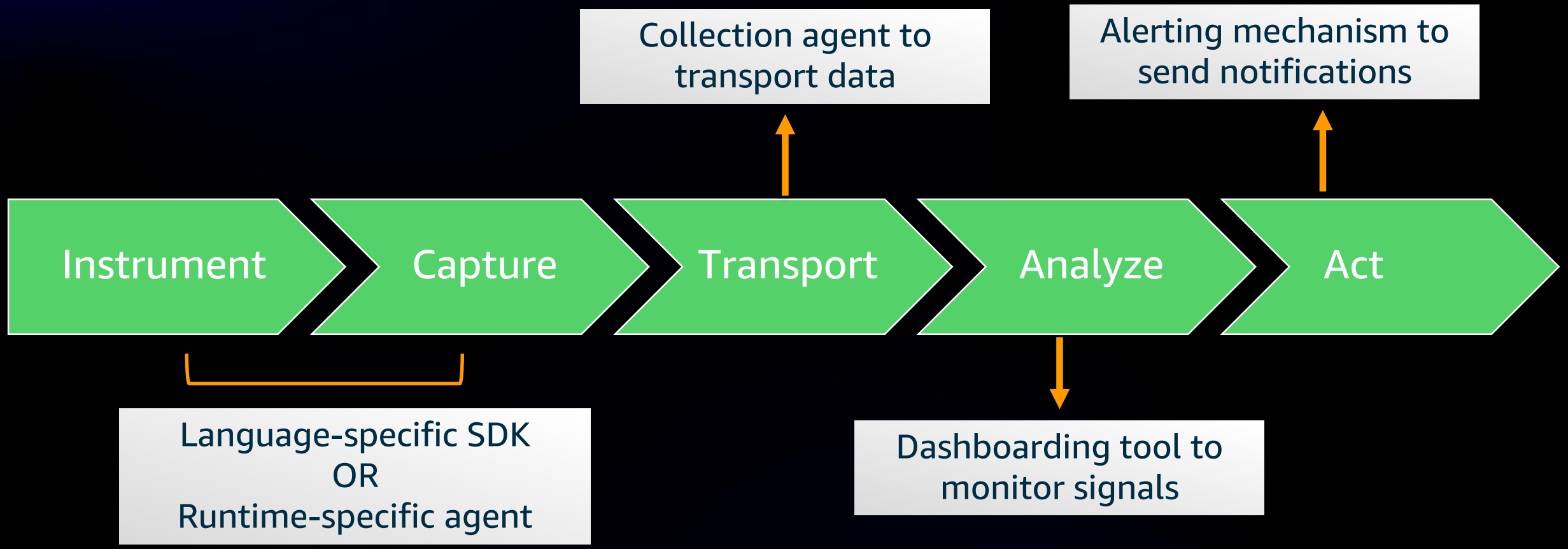
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Observability signals



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Signal lifecycle

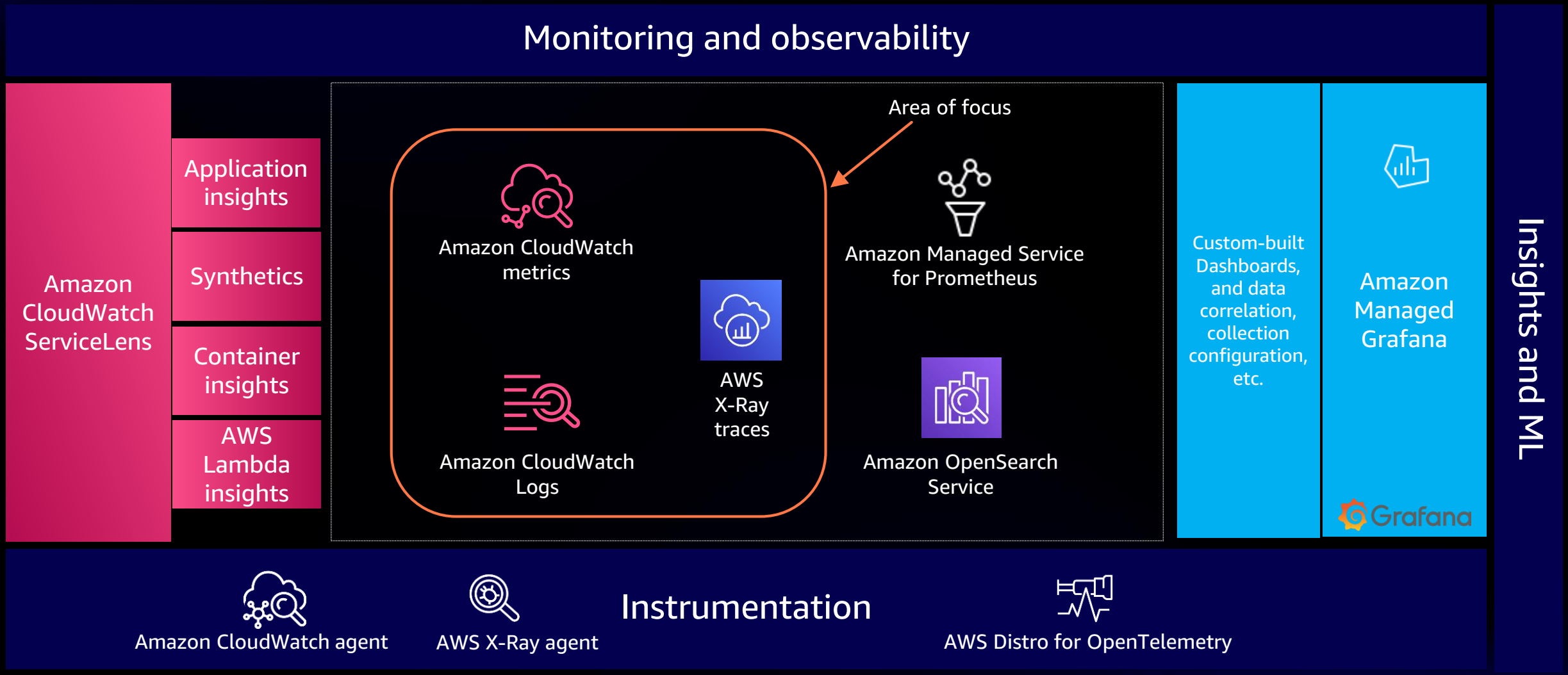


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How to implement observability for .NET apps

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AWS observability choices



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Foundation for observability



Amazon CloudWatch metrics



Amazon CloudWatch Logs



AWS X-Ray traces

Instrument all the things

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How do I get started with instrumentation?



Amazon CloudWatch Application Insights



Do it yourself

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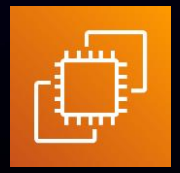
How do I get started?



Amazon CloudWatch Application Insights

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Amazon CloudWatch Application Insights



Amazon Elastic Compute Cloud (Amazon EC2)



Amazon Elastic Block Store (Amazon EBS)



Elastic Load Balancing



Amazon EC2 Auto Scaling



Amazon Simple Queue Service (Amazon SQS)



Amazon Relational Database Service (Amazon RDS)



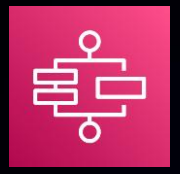
AWS Lambda



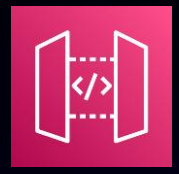
Amazon DynamoDB



Amazon Simple Storage Service (Amazon S3)



AWS Step Functions



Amazon API Gateway

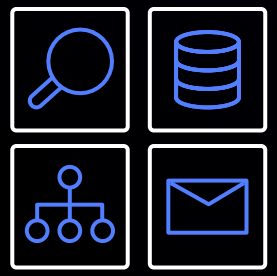


Amazon FSx

aws

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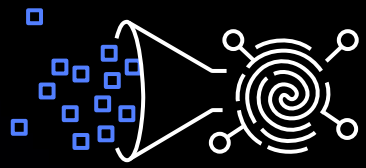
Application Insights features



Automatic monitors



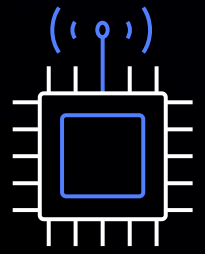
Problem detection



Troubleshooting

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Application Insights – Concepts



Component



Observation



Problem

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How do I get started?



Do it yourself

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Observability foundation



Amazon CloudWatch Logs



Amazon CloudWatch metrics



AWS X-Ray traces

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Logs

Method	Type
Amazon CloudWatch agent	Agent
FireLens	Agent
AWS.Logger NuGet Package	SDK
PutLogEvent	API

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Metrics

Method	Type
AWS Distro for OpenTelemetry	Agent
Amazon CloudWatch agent	Agent
Embedded metric format	SDK
PutMetricData	API

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Traces

Method	Type
AWS Distro for OpenTelemetry .NET	Agent
AWS X-Ray .NET auto-instrumentation agent	Agent
AWS X-Ray SDK for .NET	SDK
PutTraceSegments	API

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Summary

- Remember the basics: metrics, logs, and traces
- Get started quickly with Amazon CloudWatch Application Insights
- You can build upon Application Insights with more instrumentation
- Check out https://observability.workshop.aws to use the tools

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Thank you!

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