AWS re:Invent

WIN314

Best practices for .NET DevOps on AWS

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AWS re:Invent

aws

Related sessions

WIN308	Developing serverless .NET Core on AWS
WIN310	Infrastructure as .NET with the AWS CDK
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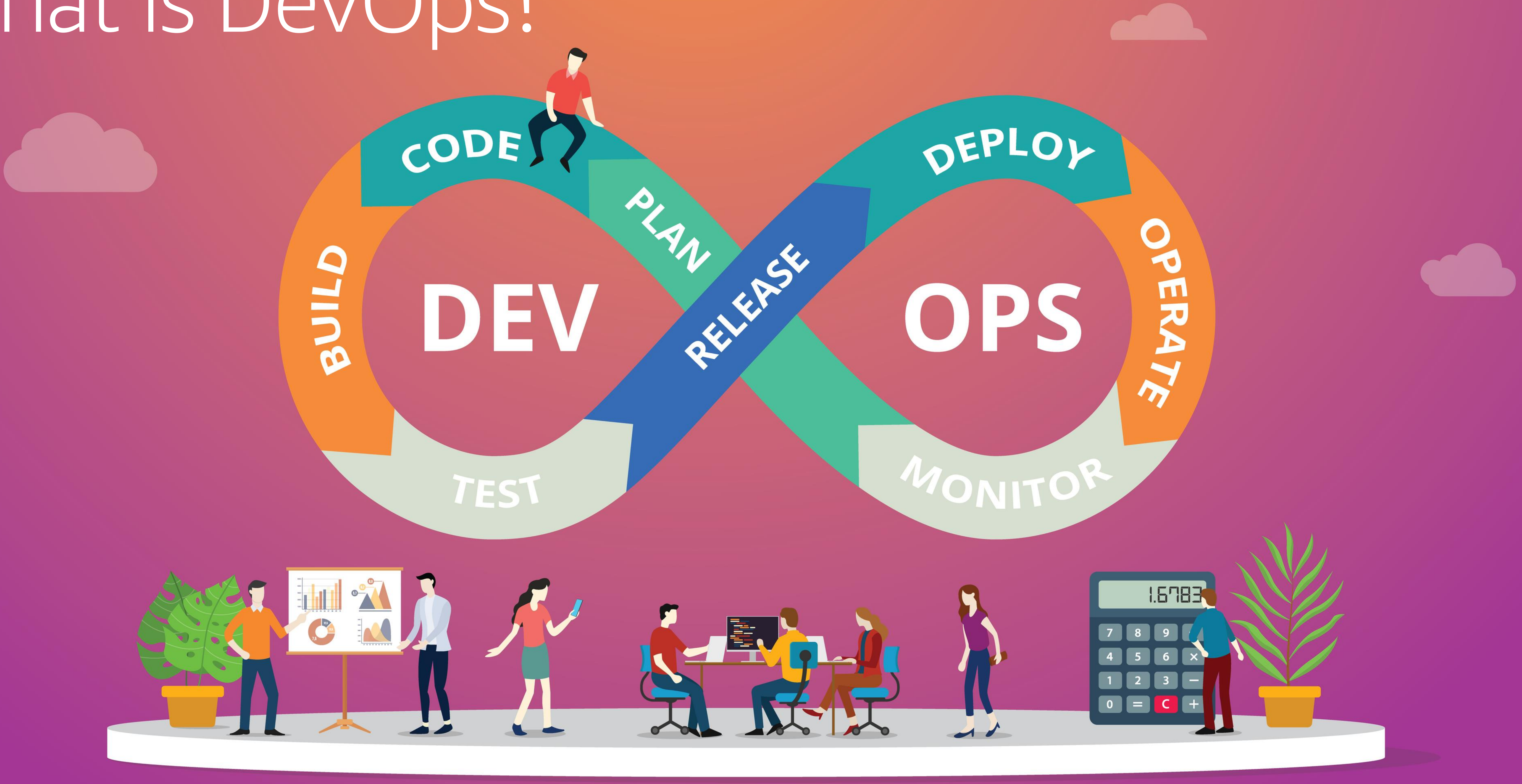
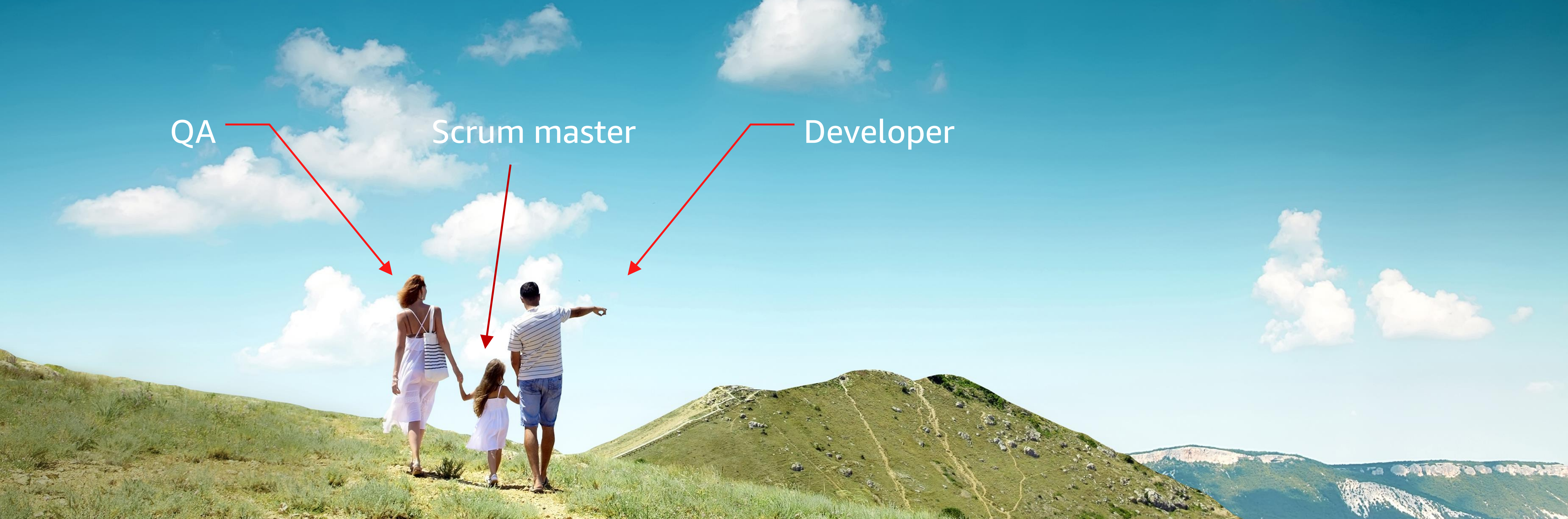
What is DevOps?



Why is DevOps easier in the cloud?



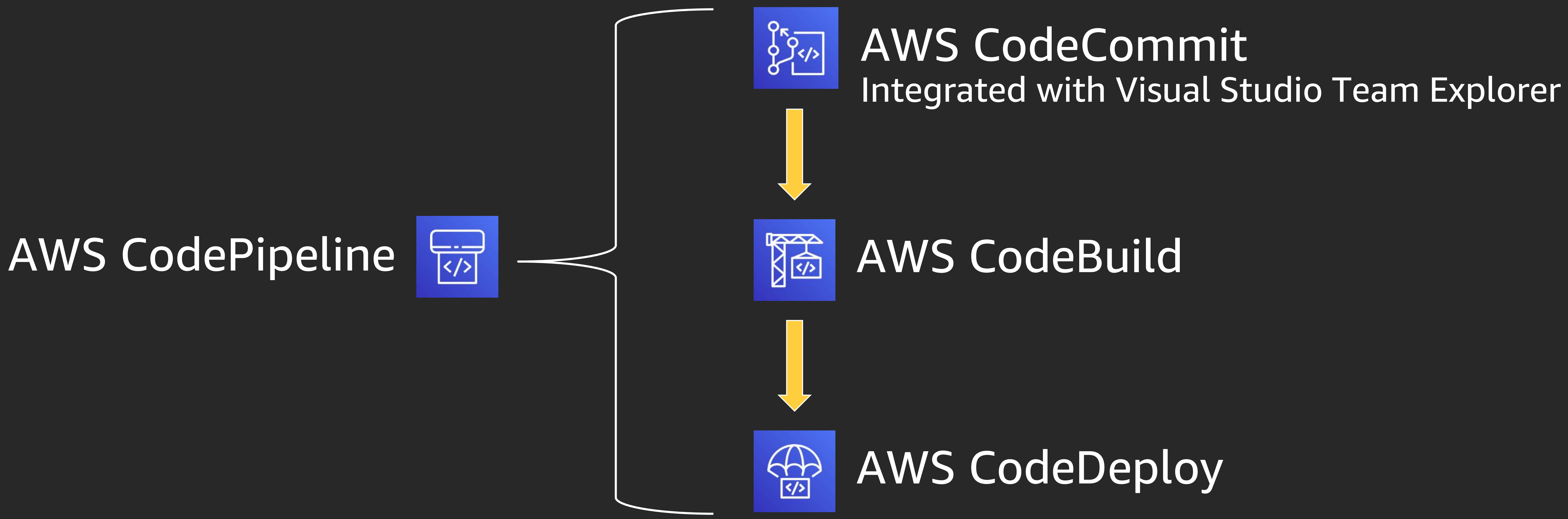
What makes it easier in AWS?

- AWS Service APIs: programmable infrastructure
- Infrastructure as code: AWS CloudFormation, Terraform, Ansible
- Code services: AWS CodePipeline, AWS CodeCommit, AWS CodeBuild, AWS CodeDeploy
- Application platforms like Amazon Elastic Container Service (Amazon ECS) & Amazon Elastic Kubernetes Service (Amazon EKS) (for containers), or AWS Elastic Beanstalk for ASP.NET 4.x
- Monitoring, logging, and tracing: What your application is doing, what it did, how pieces are related, and what’s wrong
- Options for where to run your code: How abstracted do you want to be?

Infrastructure as code

- Ability to define cloud resources in a declarative manner
- Operations environment can be described as documents
  - Supports source control of infrastructure
- Multiple systems to implement IaC in the cloud:
  - AWS CloudFormation
  - AWS CDK (including in C#)
  - HashiCorp Terraform
  - Red Hat Ansible
  - Other tools/platforms

AWS code services



AWS CodePipeline

AWS CodeCommit

Integrated with Visual Studio Team Explorer

AWS CodeBuild

AWS CodeDeploy

AWS CodeStar

Application platforms and related services

Container orchestration services

Amazon ECS

Amazon EKS

Related services

Amazon Elastic Container Registry (Amazon ECR)

AWS Fargate (serverless containers) .NET Core

AWS App Mesh (Envoy-based)

Application DevOps platform

AWS Elastic Beanstalk

Amazon CloudWatch Application Insights for .NET and SQL Server

Monitoring, logging, and tracing

Amazon CloudWatch

Amazon CloudWatch Application Insights for .NET and SQL Server

AWS CloudTrail

Log of every API call in your AWS account

AWS X-Ray

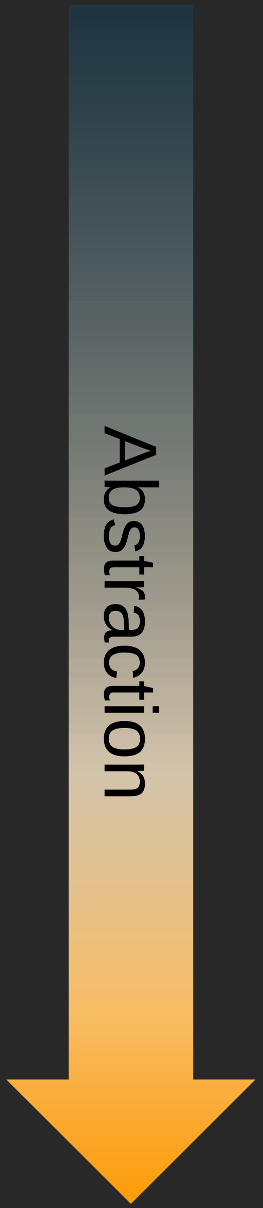
Distributed diagnostics & tracing

Compute resources: Where to run .NET

EC2 Instances: Windows/Linux (.NET Framework, .NET Core)

Containers: Windows, Linux (.NET Framework, .NET Core)

AWS Lambda (.NET Core)



Abstraction

Best practices discussion

- Automate, automate, automate
  - Build, test, deployment (CI/CD pipelines)
  - Automate provisioning of infrastructure
  - Automate responses to events—scaling, errors
- Segregation of environments (dev/test/staging/prod) by:
  - VPC—what about resources not in VPC (Lambda, Amazon DynamoDB)?
  - Account—pros and cons?
  - Tags
  - Other?
- Proactive monitoring and automated responses

Thank you!

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