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Cloud Computing Architecture

Lambda and Event-Driven Scaling



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Lambda and Event-Driven Scaling

This presentation:

- Lambda Recap
- Event-Driven Scaling



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AWS
Lambda

- Is a **fully managed** compute service
- Runs your code on a schedule or in **response to events** (for example, changes to an Amazon S3 bucket or an Amazon DynamoDB table)
- Supports Java, Go, PowerShell, Node.js, C#, Python, Ruby, and Runtime API
- Can run at edge locations closer to your users

Stateless Code

Not suitable for:

- remembering variables long term
- long running code

Many use cases:

e.g. manage infrastructure based on events



AWS Lambda **handles**:

- ❏ Servers
- ❏ Capacity needs
- ❏ Deployment
- ❏ Scaling and fault tolerance
- ❏ OS or language updates
- ❏ Metrics and logging

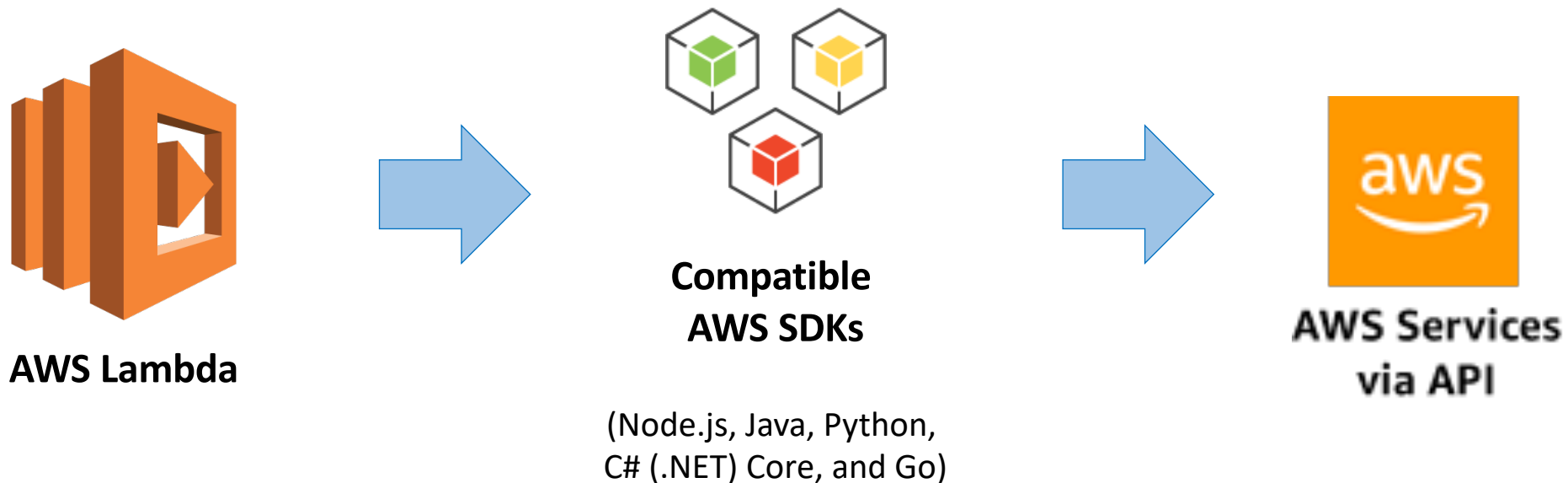
AWS Lambda **enables** you to:

- ❏ Bring your own code (even native libraries).
- ❏ Run code in parallel.
- ❏ Create back ends, event handlers, and data processing systems.
- ❏ Never pay for idling resources!



How Can AWS Lambda Be Used?

- Scaling events can trigger AWS Lambda functions.
- Code run in AWS Lambda has access to the AWS API and can be granted permissions via AWS IAM roles.
- Use a Lambda function to **automatically make API calls to other AWS services** when scaling happens.



How Can AWS Lambda Be Used Scaling?

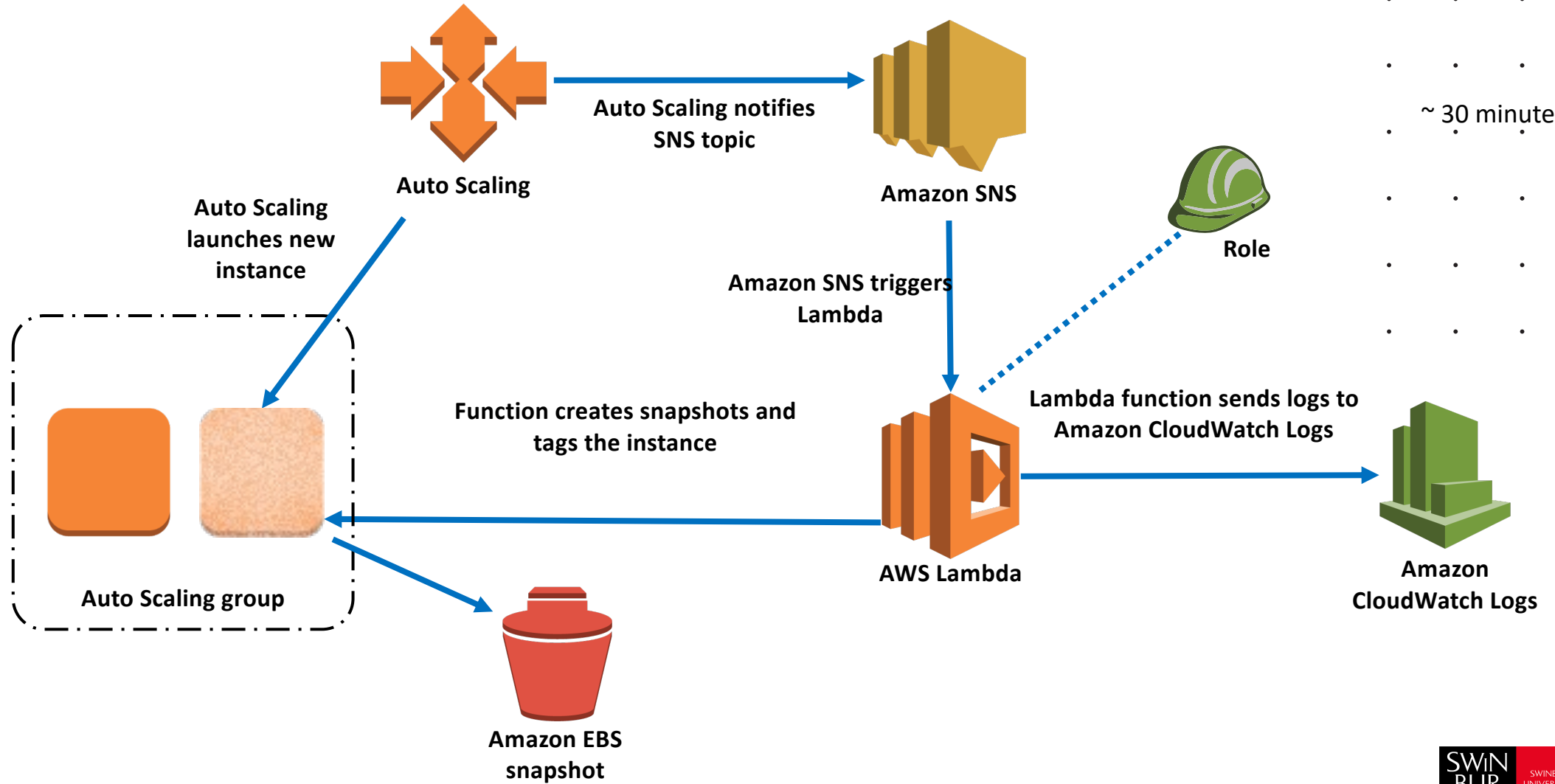


Examples of scaling-related operations you could perform with AWS Lambda:

- 📦 Scale container-based instances (Docker, Amazon Elastic Container Service, etc.).
 - 📦 Scale more intelligently using functions (e.g.: analyze a stream of performance data looking for patterns rather than just events).
 - 📦 Since AWS Lambda can scale automatically, consider replacing some Amazon EC2 instances with Lambda functions where appropriate.
- 📦 *Case study in Extra slides*

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Example



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Lecture References

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References

Recommend Viewing

Swinburne Lecture – High Level Overview

AWS Academy – Deeper dive

ACA Module 9

ACA Module 13

