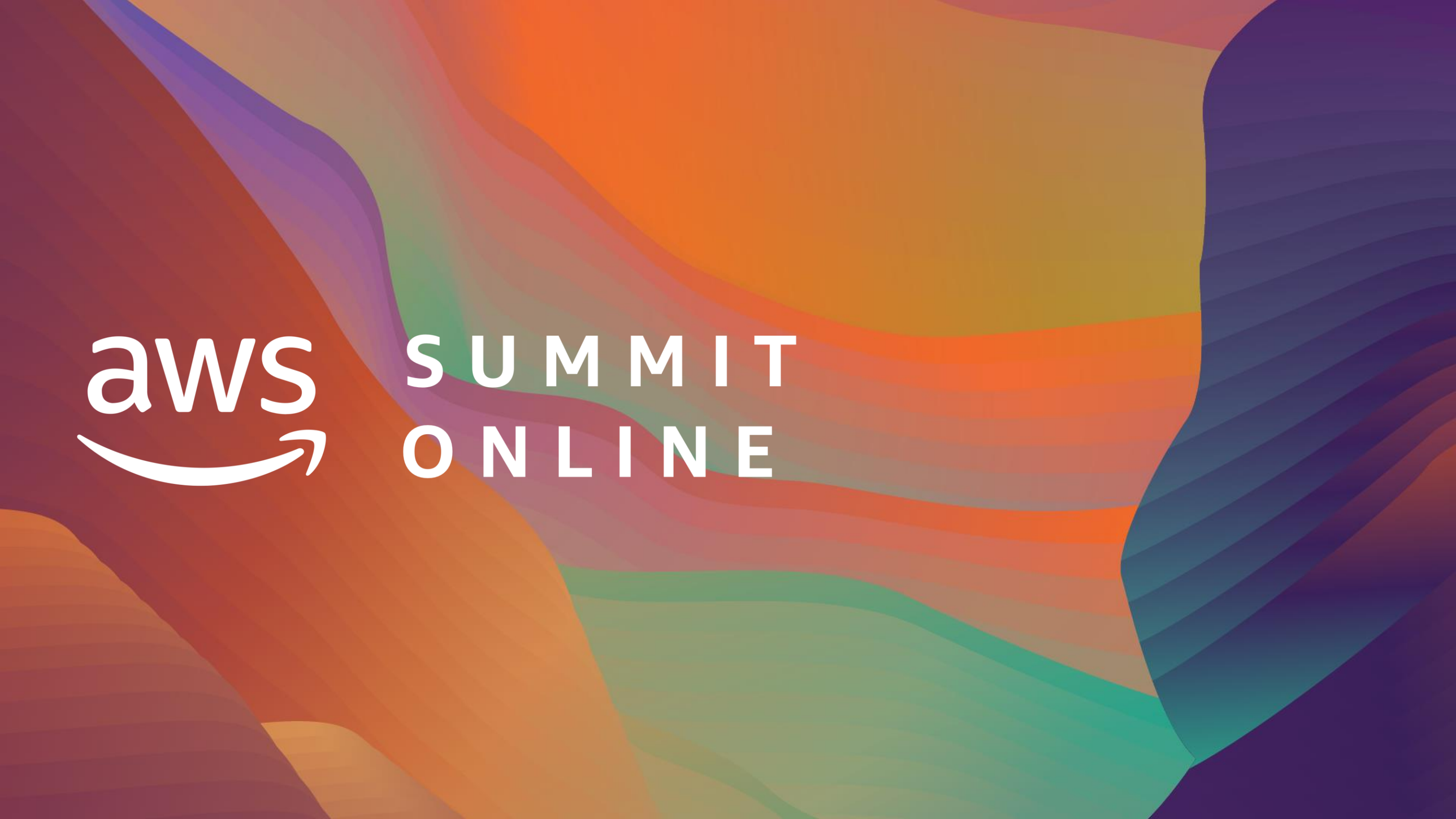
aws
SUMMIT
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SEC05

How to put SecOps to work in your organisation

Sam Annis-Brown

Solutions Architect
Amazon Web Services

aws SUMMIT ONLINE

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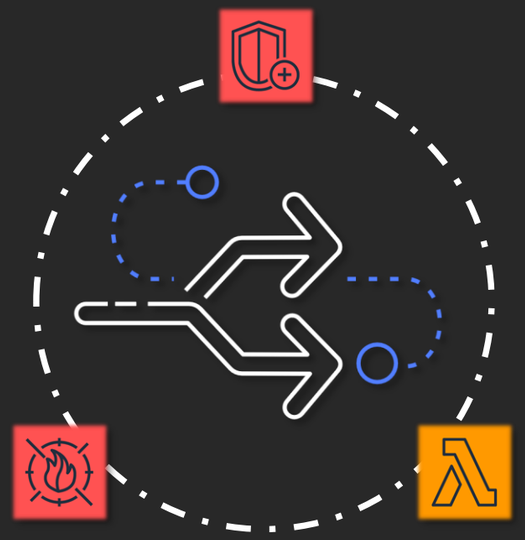
What to expect

OPEN UNIVERSITIES AUSTRALIA + aws



Security eco-system

Speed of delivery

Lessons learned

Challenges facing many online businesses

Global threats

Lack of visibility

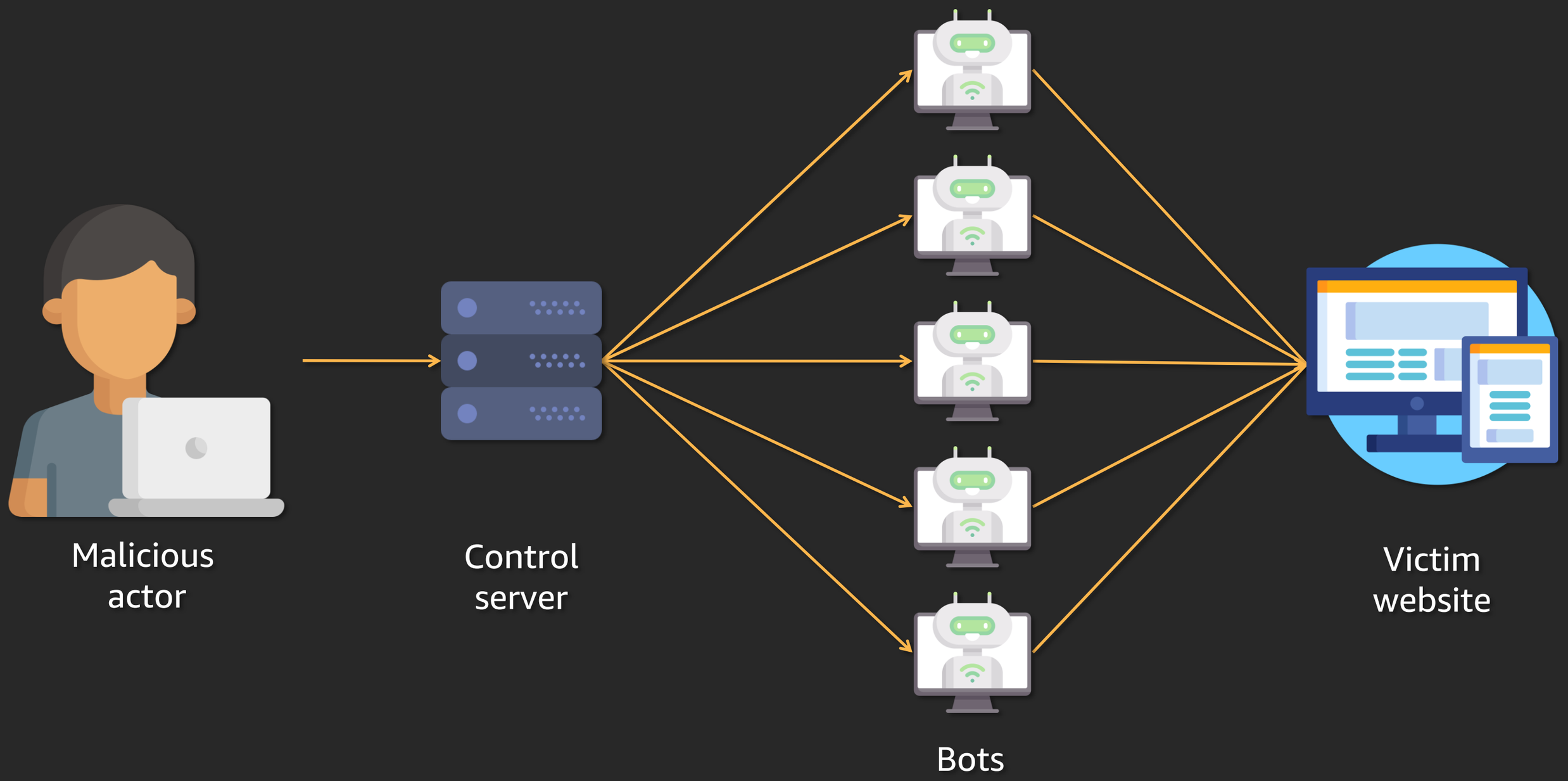
Small teams

Online threats…

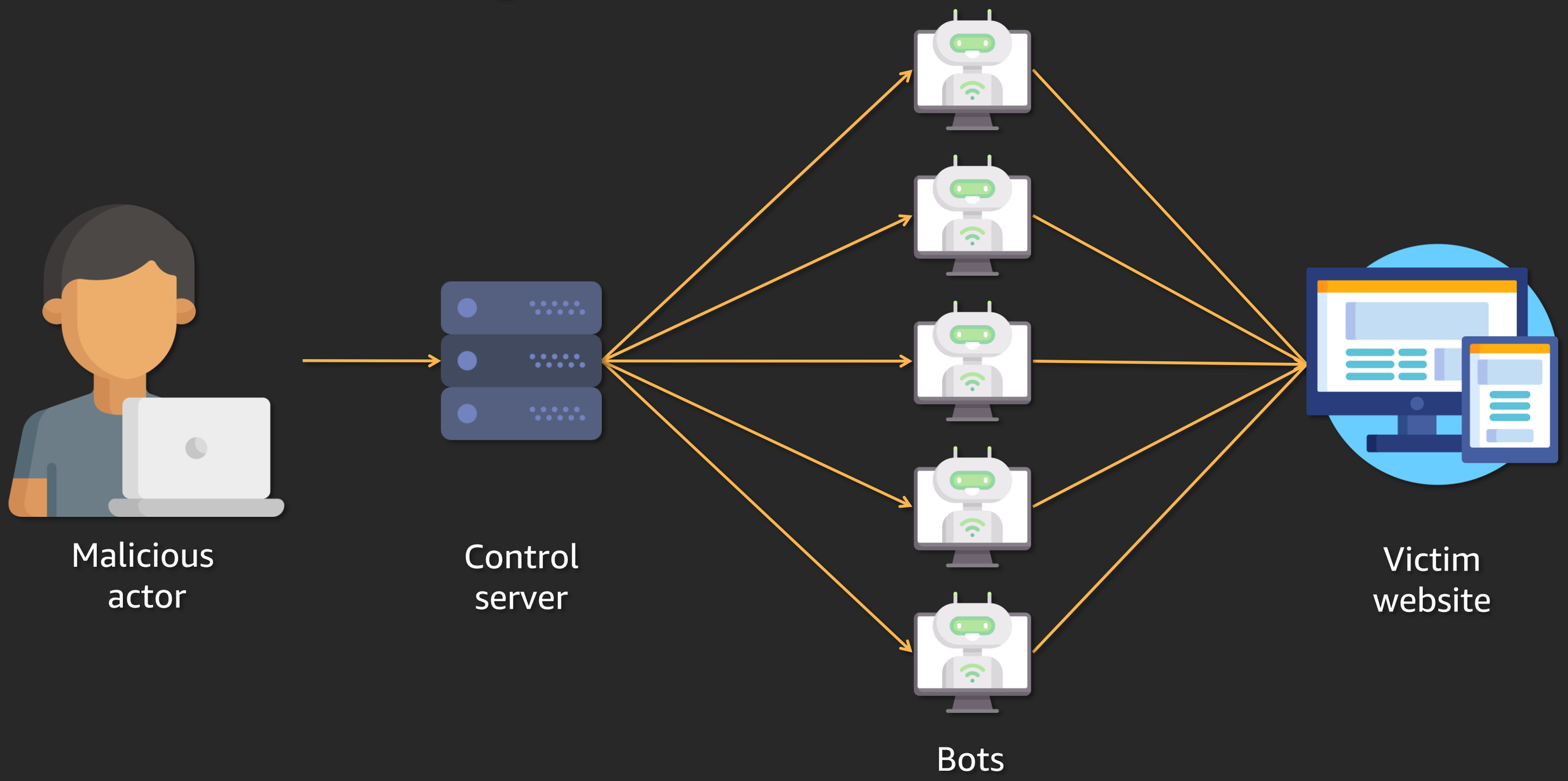
OWASP™

style attacks

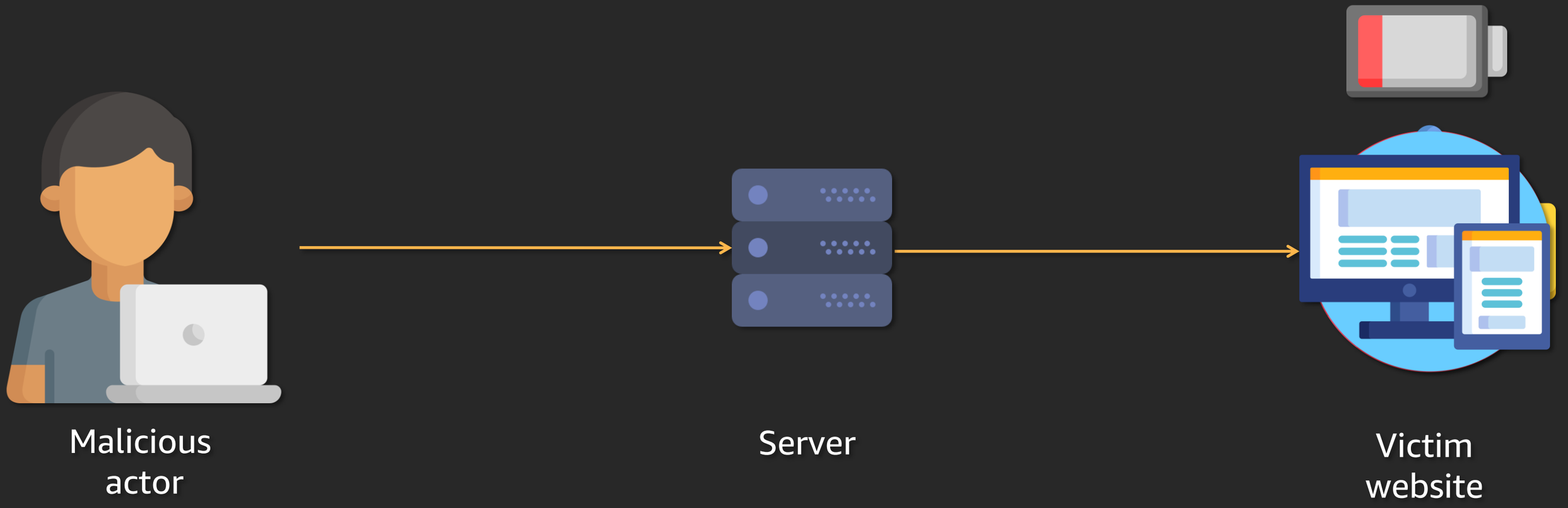
Distributed Denial of Service (DDoS)



Resource Starving Attack

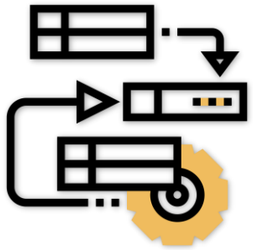


Resource Starving Attack



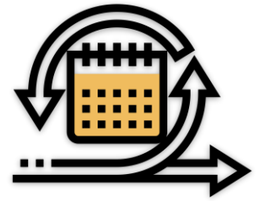
Your team

Security



Backlog

Features



Deadlines

Open Universities' journey to an automated security ecosystem in AWS

aws SUMMIT ONLINE

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A collaboration between

Phillip Sessions
Lead Engineer

OPEN UNIVERSITIES AUSTRALIA

&

Sam Annis-Brown
Solutions Architect

aws

Who is…

OPEN UNIVERSITIES AUSTRALIA

Way back in the beginning…

OPEN LEARNING

Welcome to Open Learning Australia

Open Learning Australia (OLA) provides TAFE and tertiary level studies that come to your door. If you want to study from home, then read on.

- 1996 Handbook - This on-line Handbook is more up to date than the printed version. For changes see the *What's New* section below. The print version is available from bookstores, newsagents and ABC Shops for $9.95, which is refundable upon registration.
- What's New
- Student Resources - includes timetables, library guide, links, FAQ, and information on access and equity, the student association, and study skills.
- About OLA - includes information about Open Learning Australia, media releases, and research and reports.
- Provider Information - information of interest to institutions providing or wanting to provide units/modules of study through OLA.
- Small - Medium Enterprise Training Website

Please note that this information is updated regularly.

Any comments or queries regarding this web site can be e-mailed to George Ivanoff (Academic Projects Officer) george.ivanoff@ola.edu.au

Address of this page: http://www.ola.edu.au
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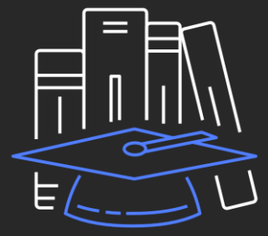
OPEN UNIVERSITIES AUSTRALIA in numbers…



352

degrees

1,872

subjects

428,108

students since 1993

Murdoch University
Flinders University
Swinburne University of Technology
RMIT University
Southern Cross University
Macquarie University Sydney-Australia
Australian National University
University of Tasmania
Bond University
Griffith University Queensland, Australia
University of South Australia
ECU Australia Edith Cowan University
UNSW Sydney
ACU Australian Catholic University
James Cook University Australia
Curtin University
La Trobe University
une University of New England

Humble beginnings

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Humble beginnings

Humble beginnings

From private to public

Move-and-groove

Move-and-groove

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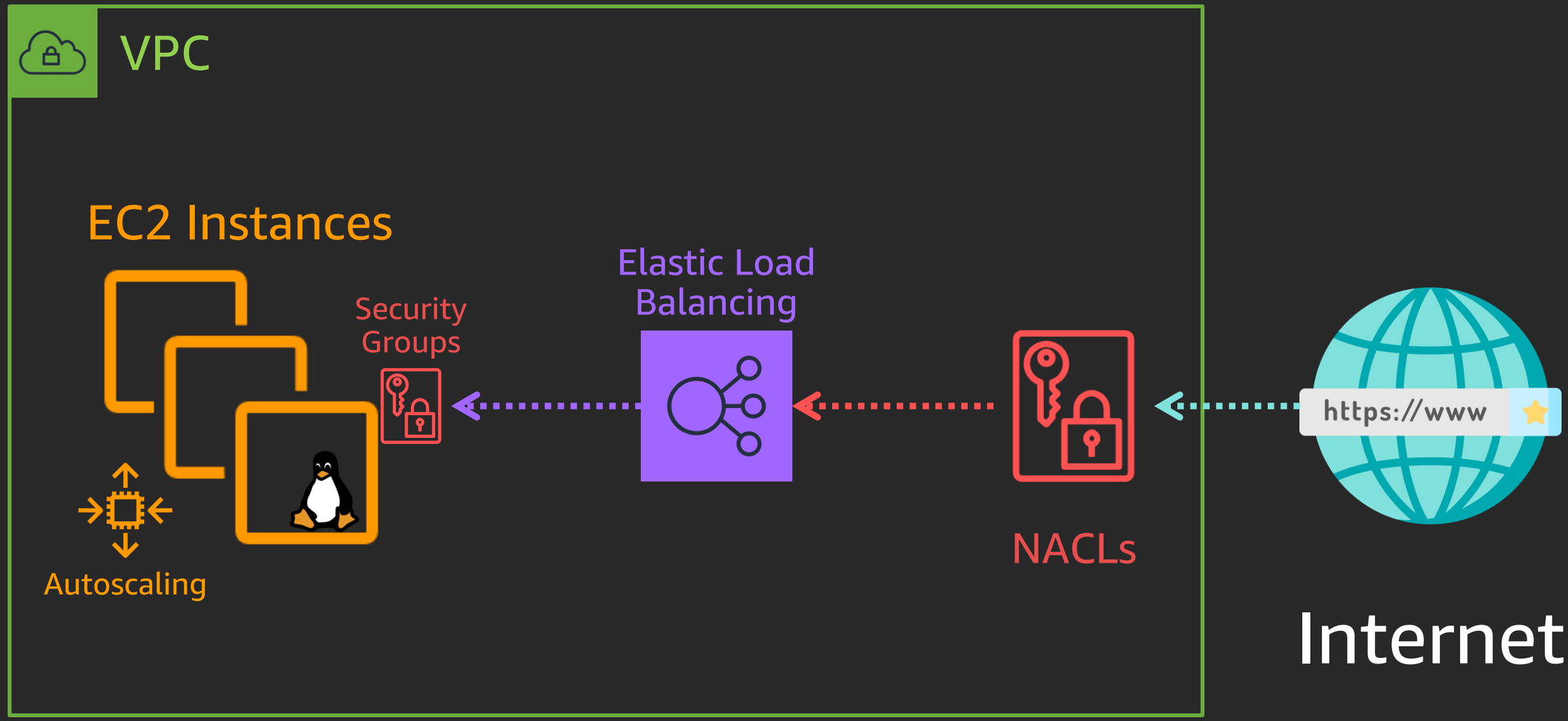
On-premesis

Servers

Firewall

Internet

Amazon Web Services



Evolution

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Third party Web Application Firewall (WAF)

VPC

EC2 Instances

Security Groups

Elastic Load Balancing

Autoscaling

3rd party NACLs WAF

https://www

Internet

Replatform and move to AWS WAF

VPC

EC2 Instances

Security Groups

Elastic Load Balancing

Autoscaling

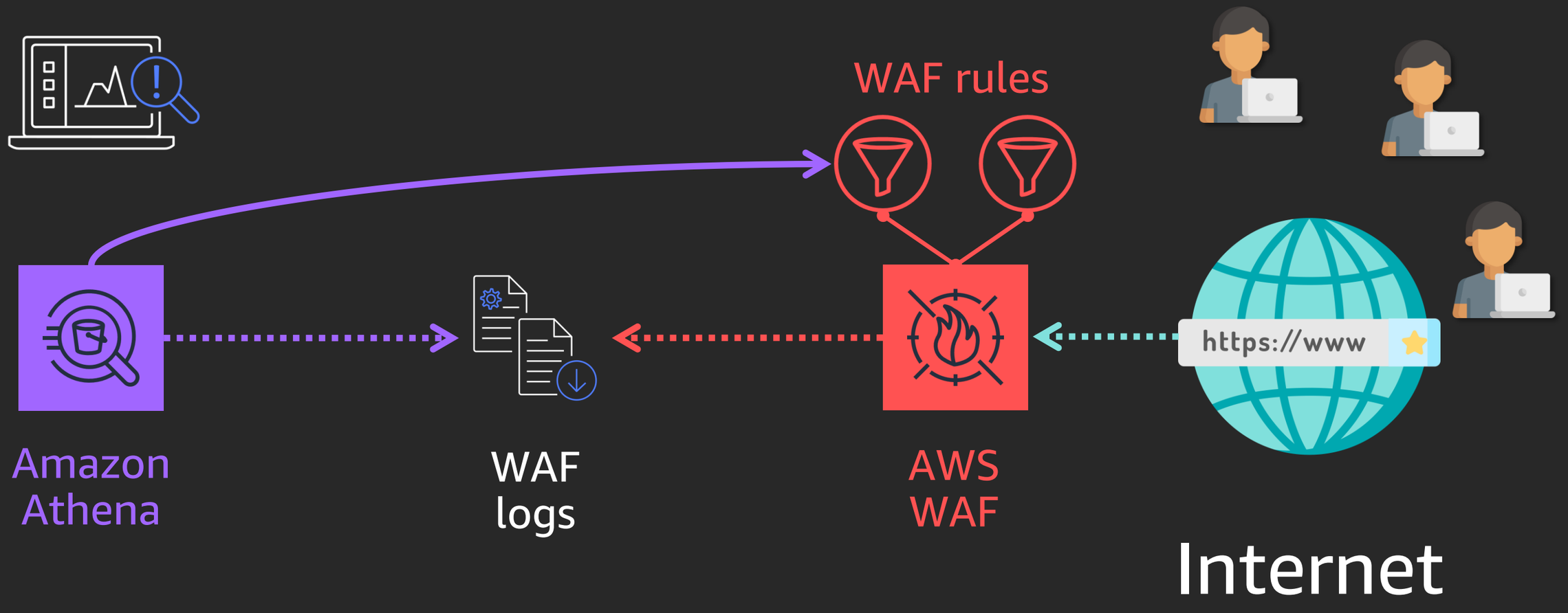
3rd party WAF

AWS WAF

https://www

Internet

Gaining insights



The birth of GateKeeper

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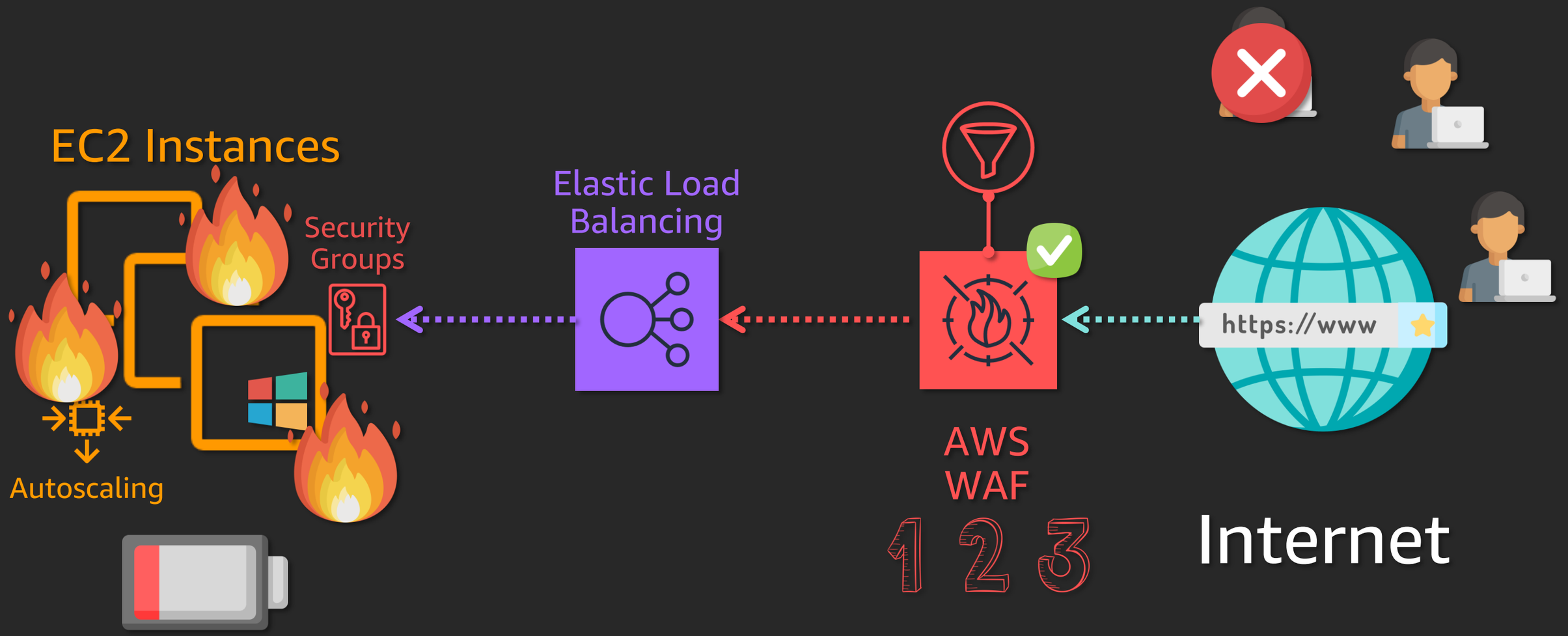
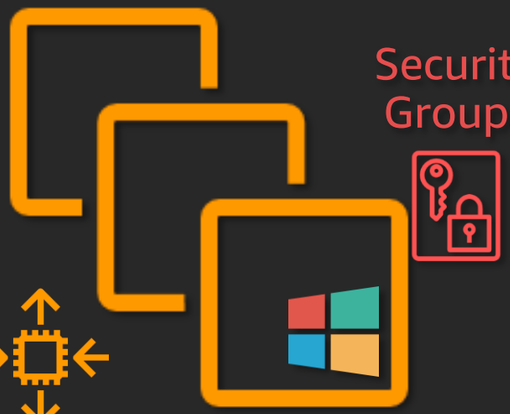
Starting to crawl with AWS WAF



Learning to sleep

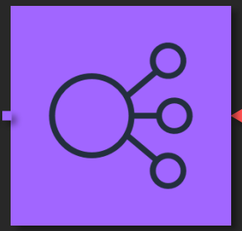
EC2 Instances



Security Groups

Autoscaling

Elastic Load Balancing

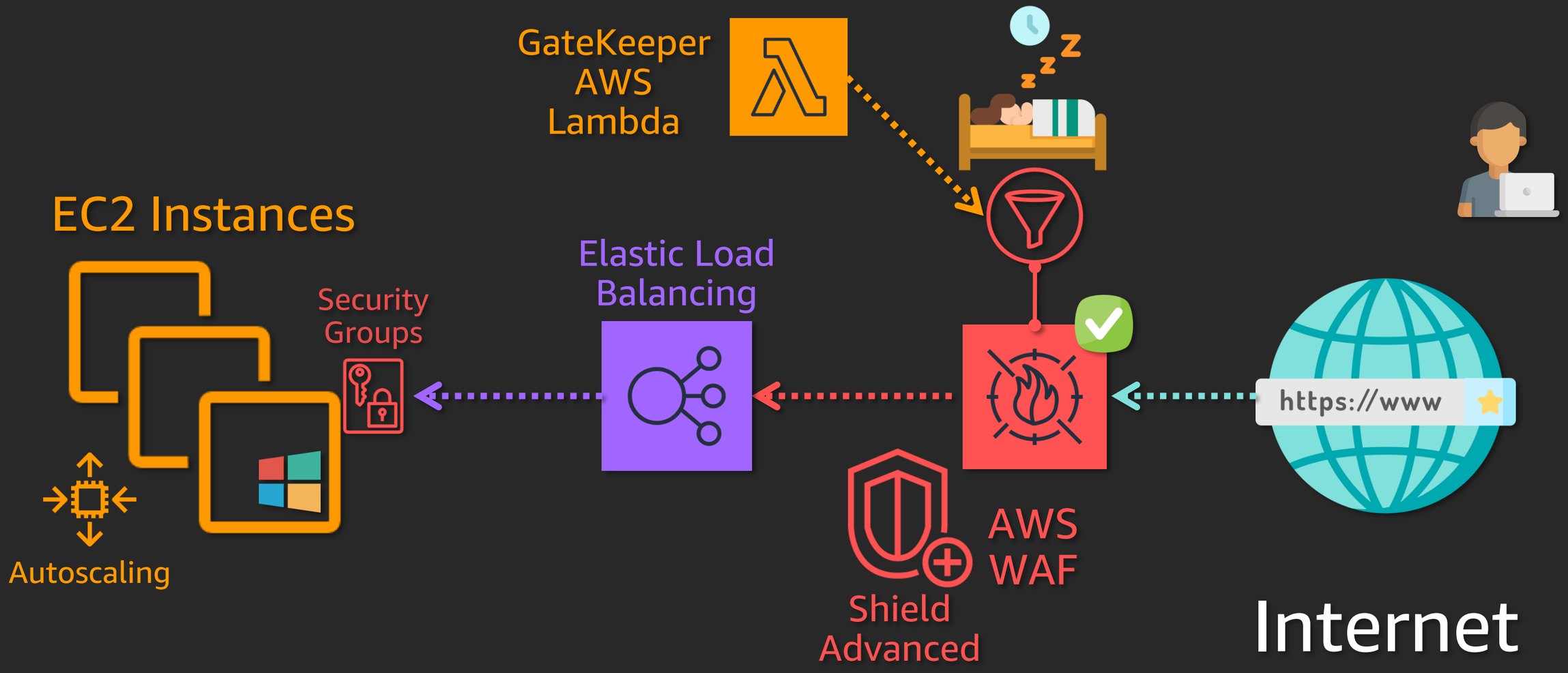


AWS WAF

Shield Advanced

Internet

Implementing GateKeeper



Low frequency attacks

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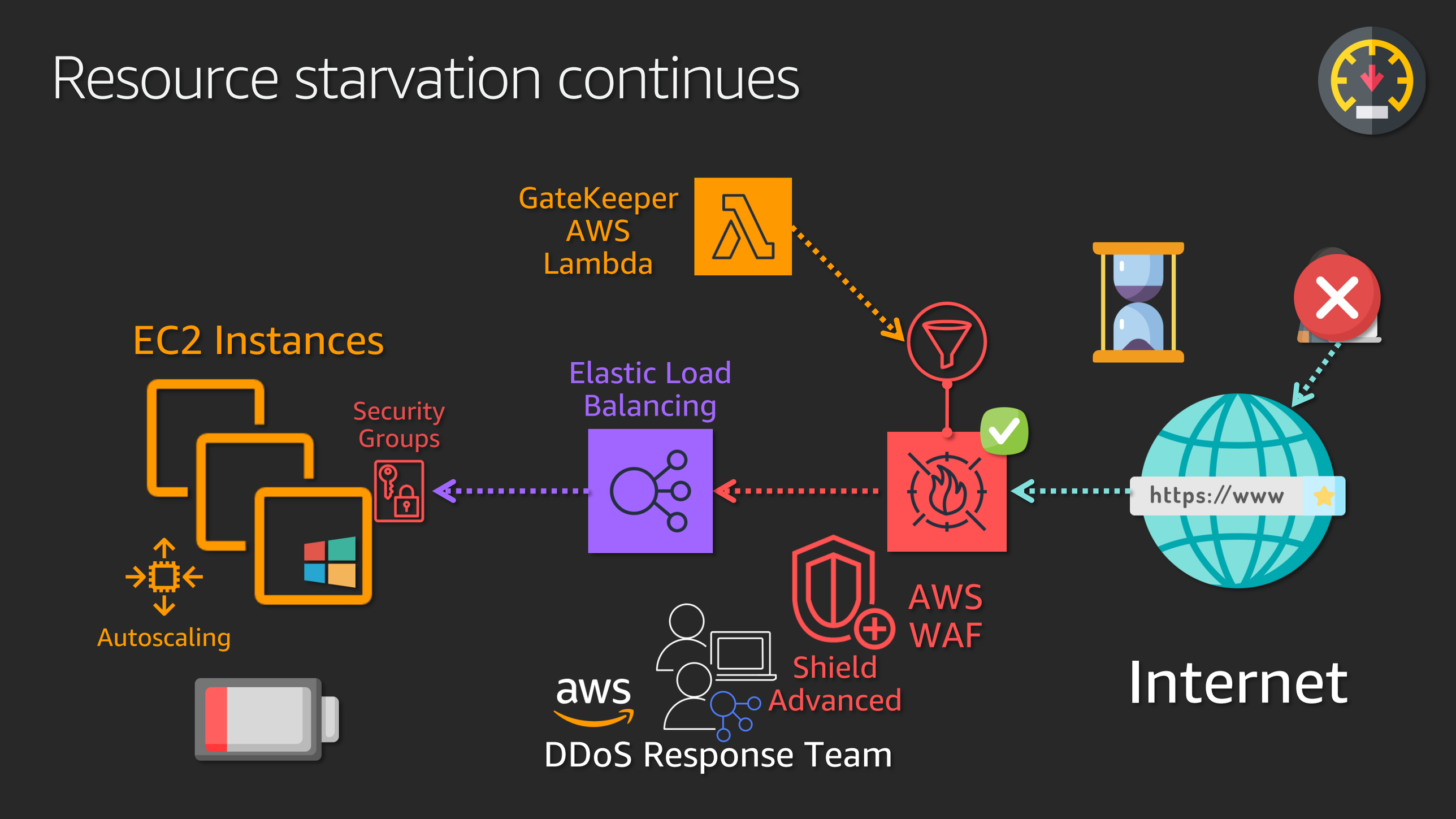
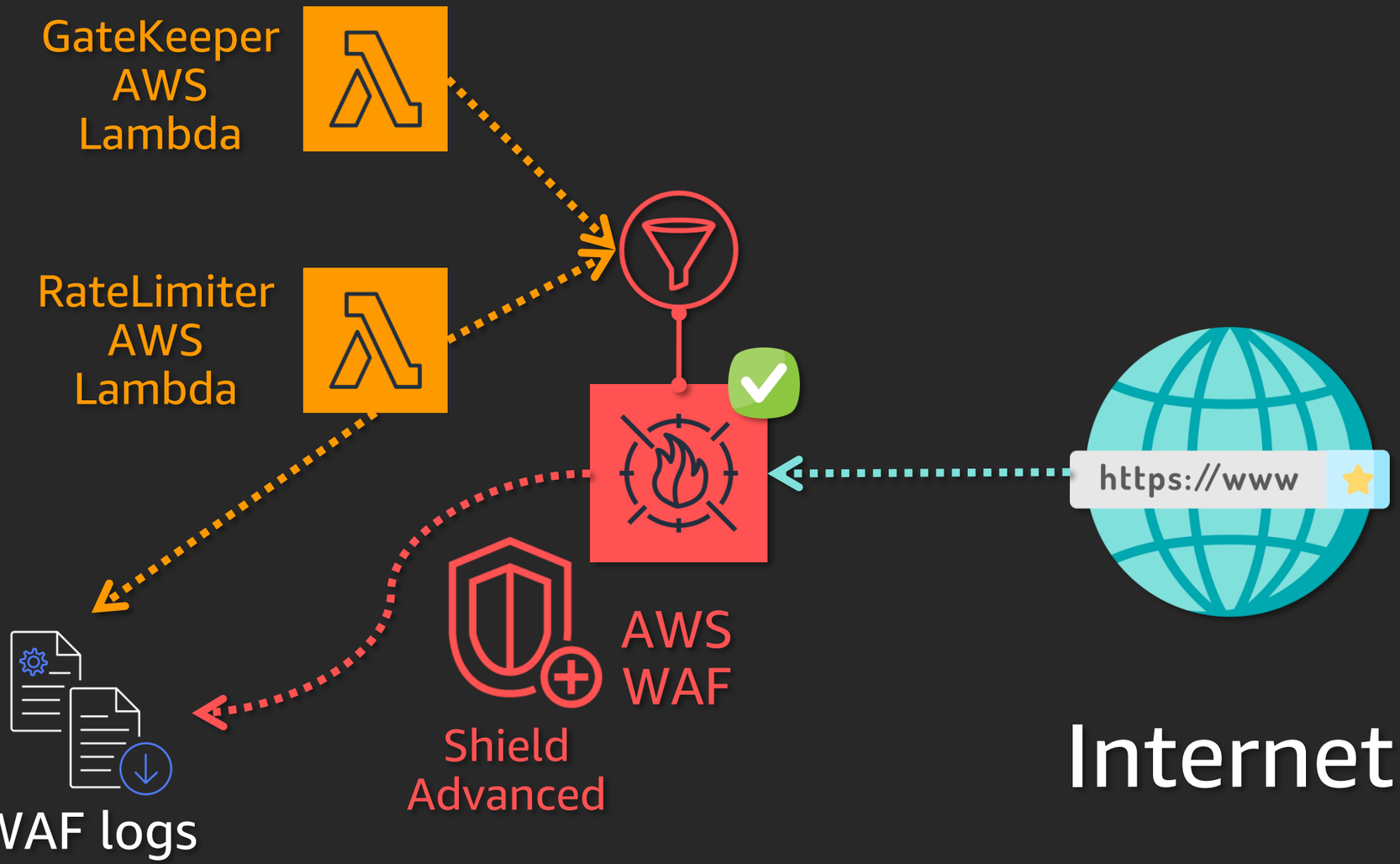
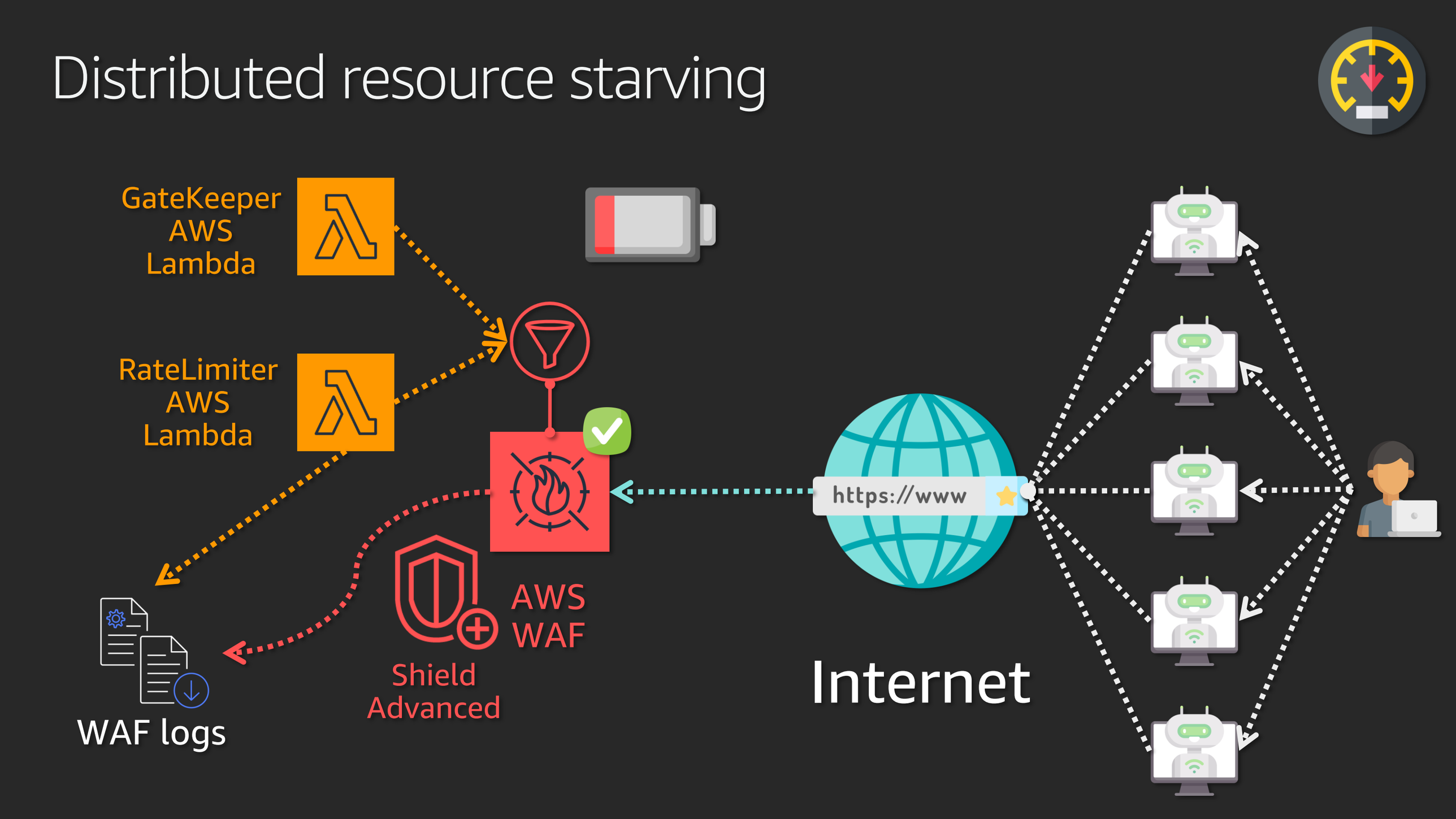
Resource starvation continues



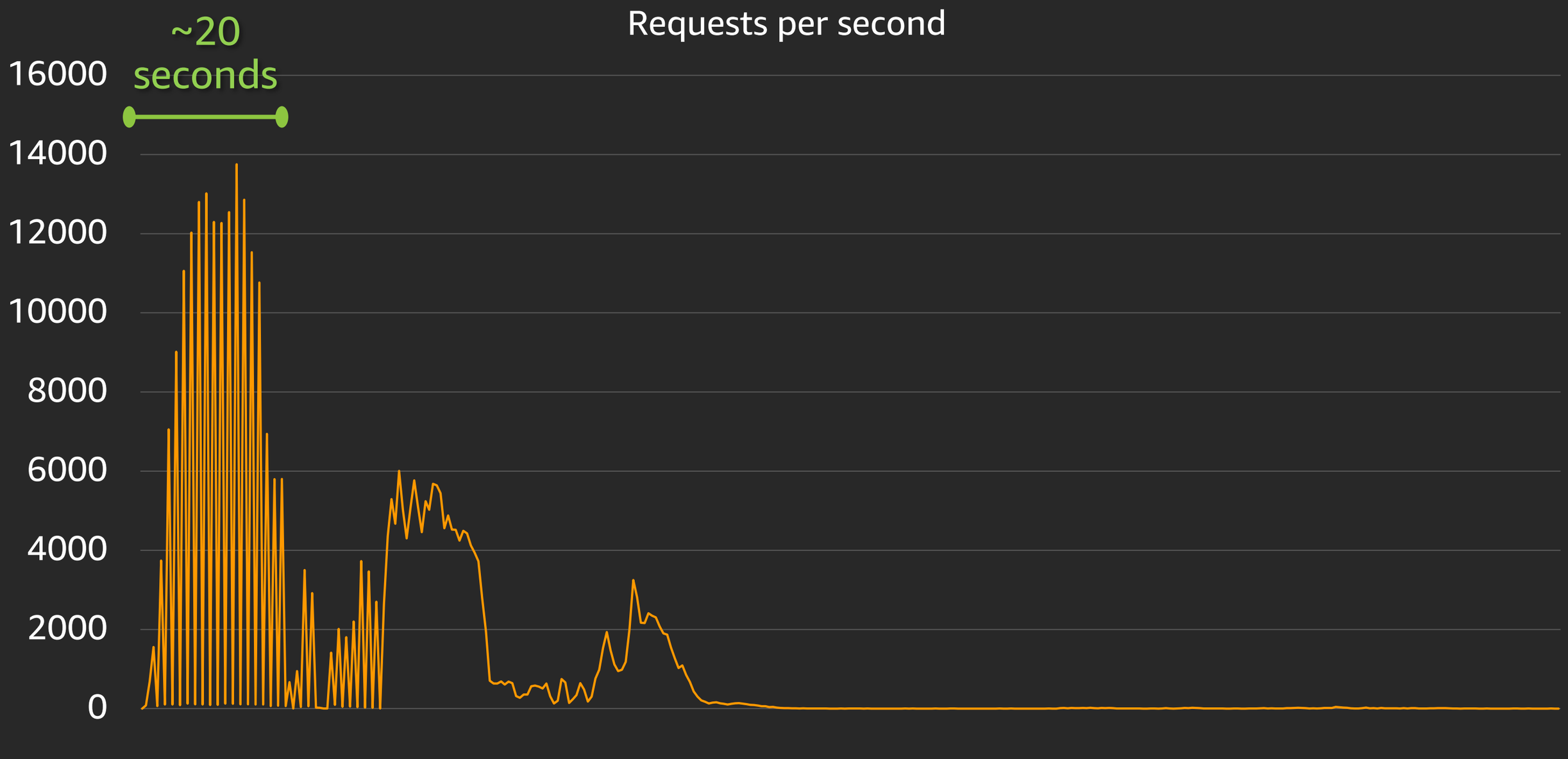
Enter ‘Rate Limiting’!



Distributed resource starving



Traffic during the attack



Where are OUA now

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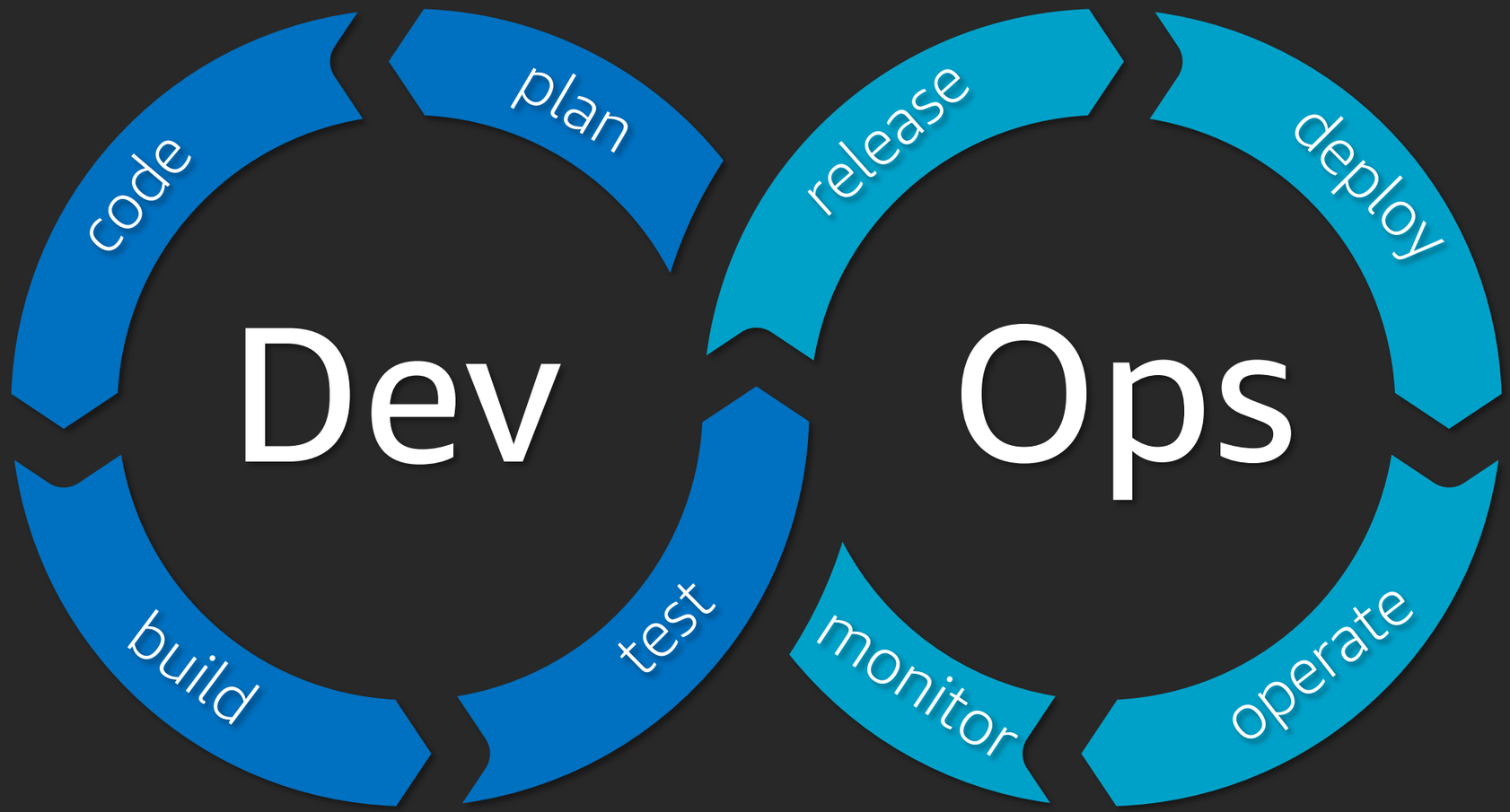
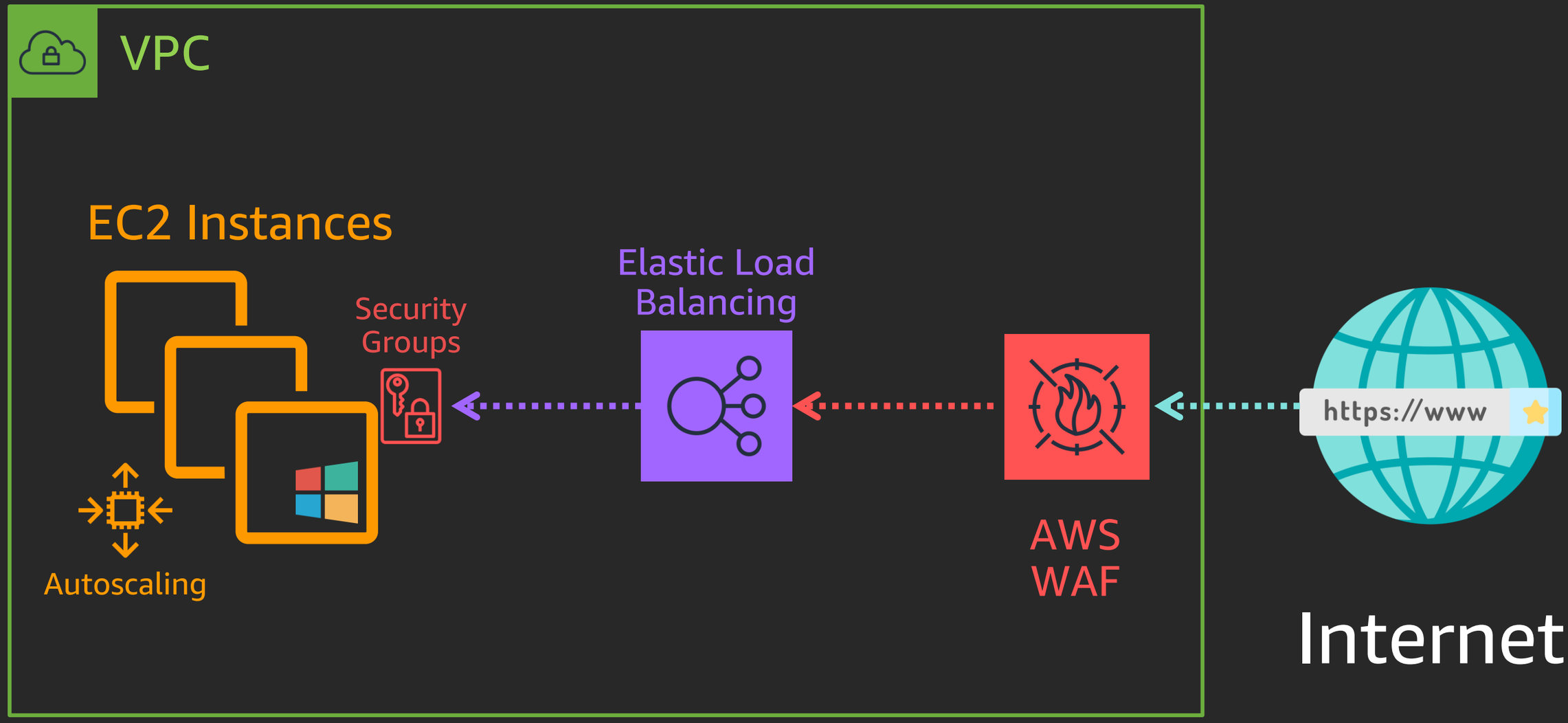
DevSecOps

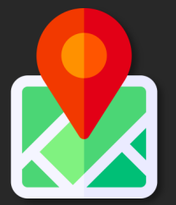
Sec



Being safe behind walls



Being safe behind walls



CI/CD Pipelines

Admins

Production environments

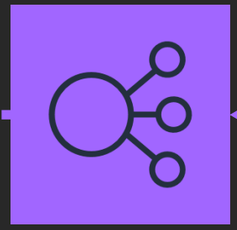
VPC

EC2 Instances

Security Groups

Autoscaling

Elastic Load Balancing

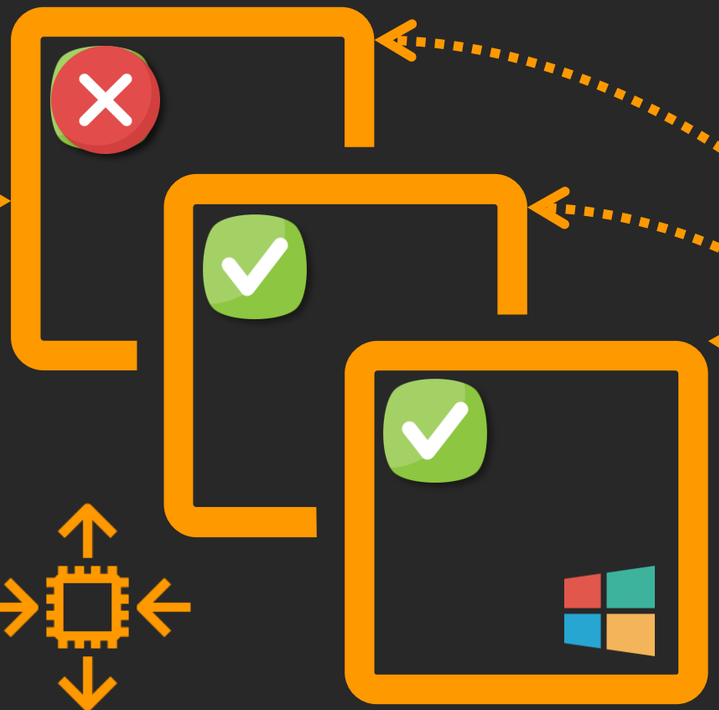


API Ingress

Being safe behind walls

Malicious actor

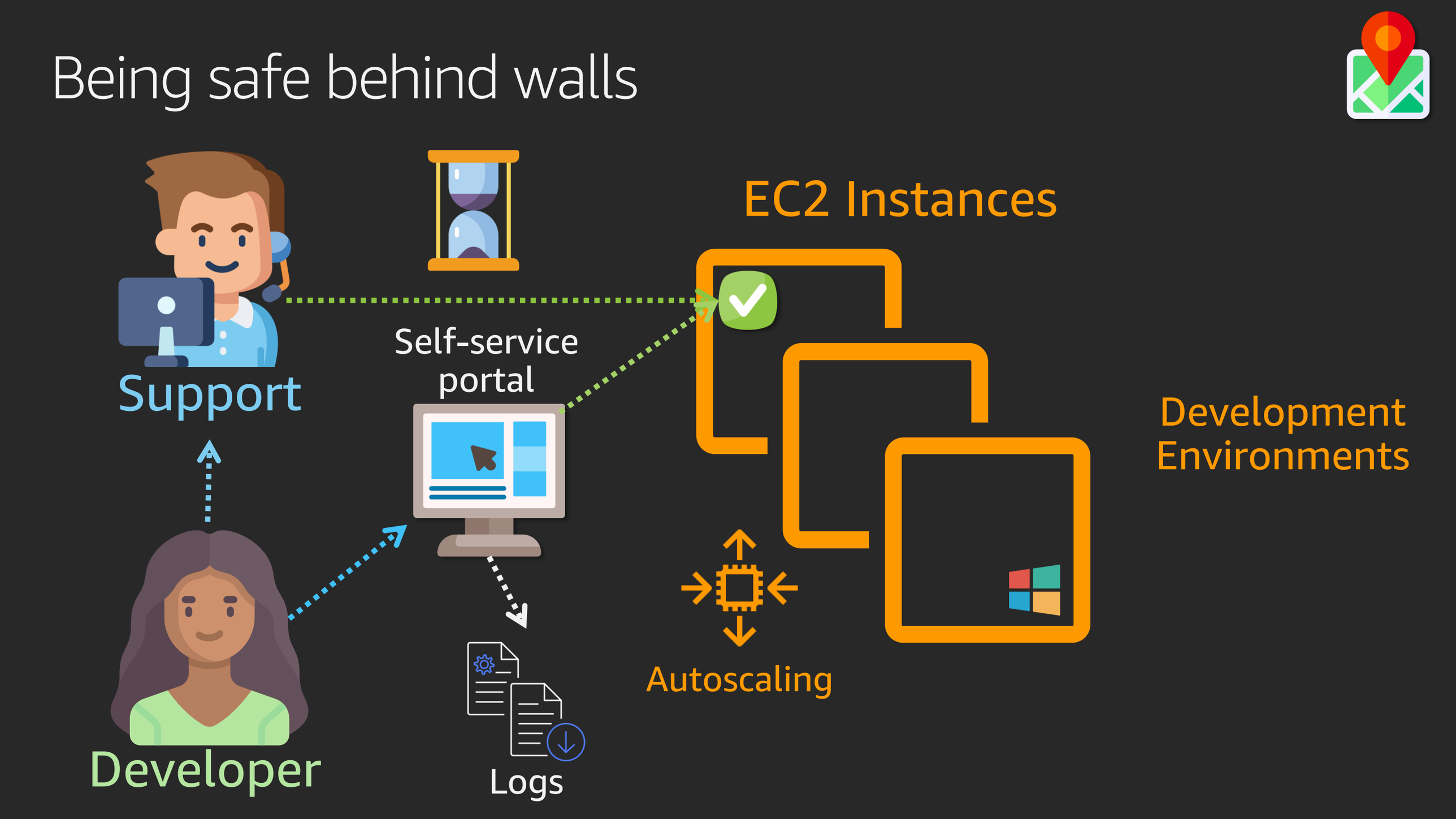
EC2 Instances



Autoscaling

Golden Amazon Machine Image (AMI)

Being safe behind walls



Lessons learned

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Working with a small team?

Automation

OUA Team

Prioritise

AWS Shield Advanced
DDoS Response Team

partner network

Lessons Learned

Things change **quickly**

There’s no **one tool**

Start **early** with **security** and **scalability**

What next?

Implement

AWS WAF

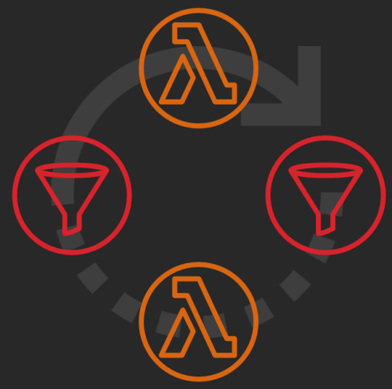
bit.ly/SEC05-WAF

Automate

AWS Lambda

bit.ly/SEC05-Lambda

Iterate



Thank you!

Sam Annis-Brown

ansamual@amazon.com

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