

# AWS re:Invent

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OPN207

# .NET open source on AWS

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# Agenda

.NET on AWS: A brief history

Why open source?

AWS .NET open-source investment themes

2022 OSS projects

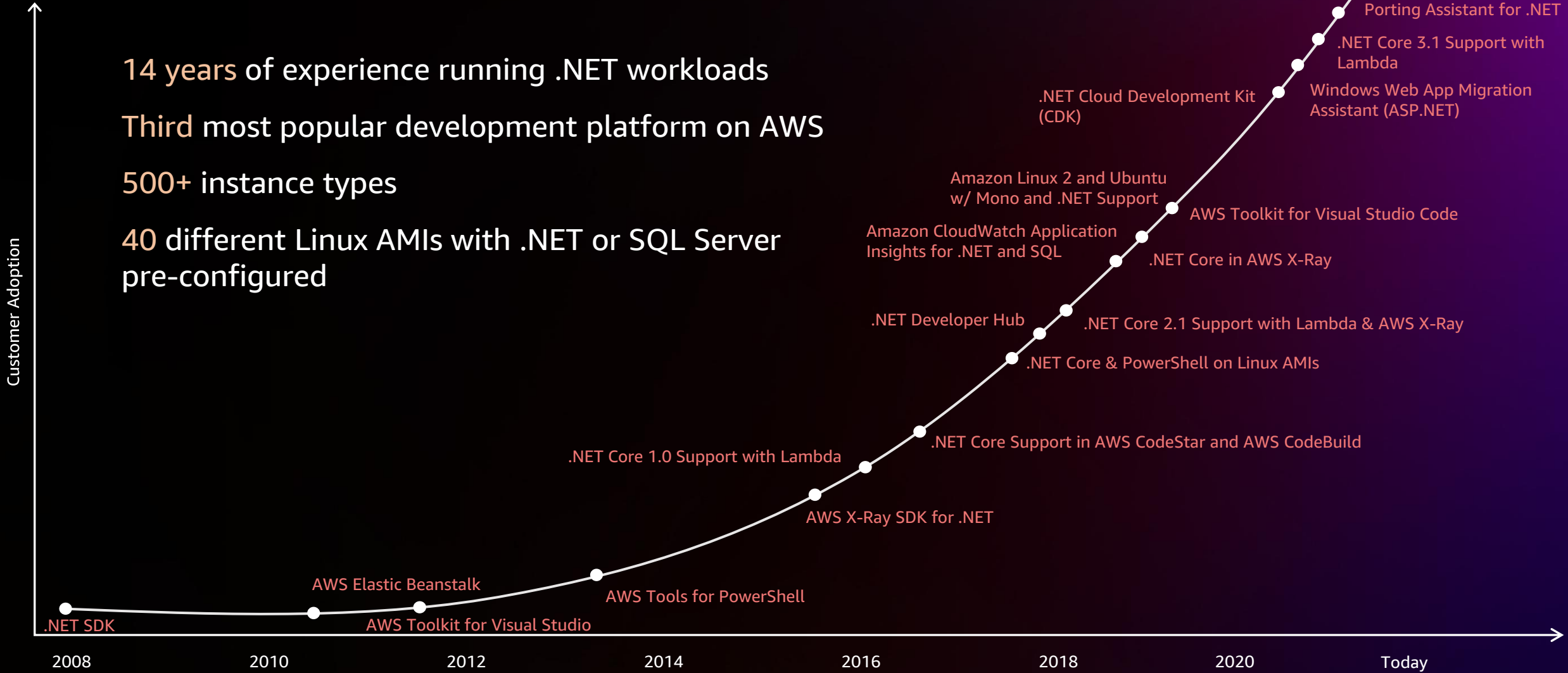
Q&A



# .NET on AWS: A brief history



# .NET history on AWS



# AWS compute services for .NET

## .NET Framework



Amazon EC2



AWS Elastic  
Beanstalk



Amazon  
Lightsail



Amazon Elastic  
Container Service  
(Amazon ECS)



Amazon Elastic  
Kubernetes Service  
(Amazon EKS)



AWS Fargate



AWS App Runner



AWS Lambda

## .NET

# .NET development tools on AWS

## IDE integration

AWS Toolkit for Visual Studio



AWS Toolkit for Visual Studio Code



AWS Toolkit for Rider



## Programmable SDK

AWS SDK for .NET

.NET

AWS CDK for .NET



## Command line tools

AWS Tools for PowerShell



'dotnet' CLI extensions



AWS CLI



AWS SAM



.NET deployment tool



## CI/CD integration

AWS Toolkit for Azure DevOps



AWS CodePipeline/  
AWS CodeBuild



## Migration/ modernization tools

AWS App2Container



Porting Assistant  
for .NET



AWS Microservice  
Extractor for .NET



# Why open source?



**“The smartest people in every field are never in your own company.”**

**Bill Joy**

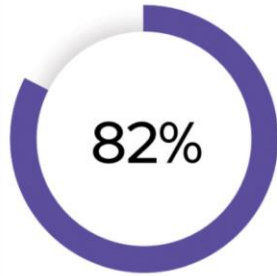
Co-founder and ex-CTO of Sun Microsystems



# Why are enterprises turning to open source?

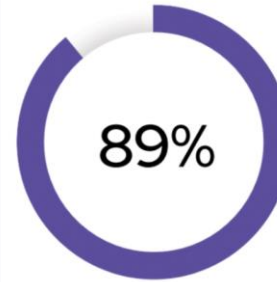
- Multiplier effect – innovate faster
- Benefit from latest innovation
- Upgrading internal developer skills, recruiting and retaining talent
- Share maintenance costs through community involvement
- Cost effectiveness

# Voice of the customer



of IT leaders are more likely to select a vendor who contributes to the open source community.

(APAC = 77%, EMEA = 82%, LATAM = 83%, U.S. = 82%)



of IT leaders believe enterprise open source is as secure or more secure than proprietary software.

(APAC = 89%, EMEA = 90%, LATAM = 87%, U.S. = 90%)

## Top uses for enterprise open source

1

IT infrastructure modernization

62%

2

Digital transformation

54%

3

Application development

52%

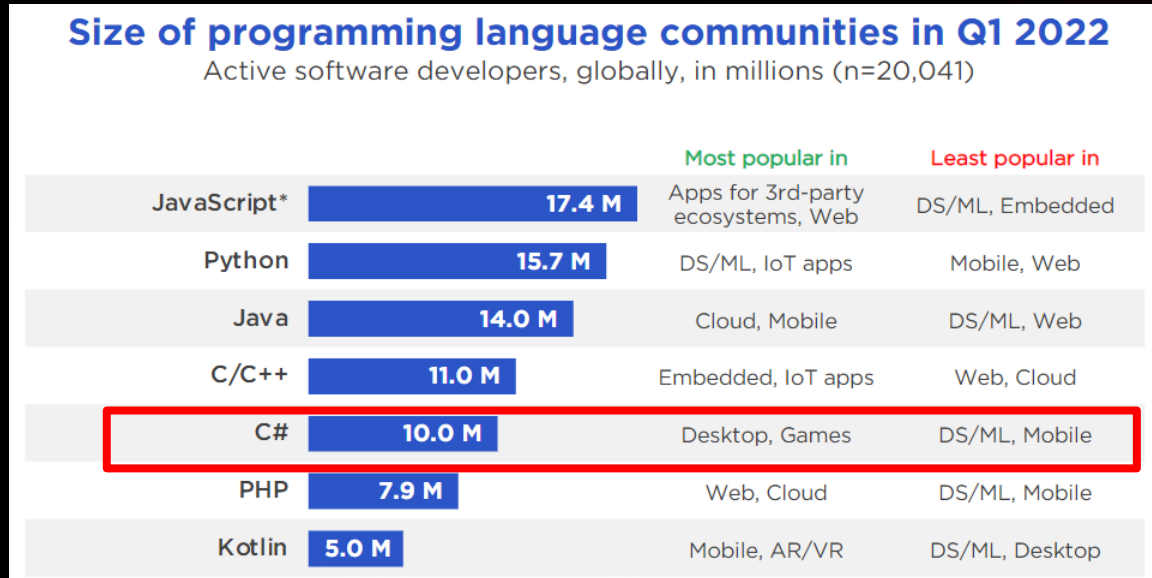
4

Application modernization

48%

Source: RedHat, State of Enterprise Open Source Report 2022  
<https://www.redhat.com/en/enterprise-open-source-report/2022>

# Why we love .NET at AWS



Source: SlashData, State of the Developer Nation survey Q1 2022  
<https://bit.ly/3UoVbjT>

- Open source enables AWS to bring choice, technology, and community to our customers
- Top 30 most active OSS projects since 2017
- Vibrant community of 10 million enterprise developers worldwide
- 100K+ OSS contributions
- 3,700+ OSS company contributors
- Third most popular framework for developing on AWS

# AWS is not new to .NET open source

- There are 25+ .NET open source projects on AWS
- The top .NET open-source projects on AWS include:
  - AWS SDK for .NET (330 million+ downloads)
  - AWS Lambda Tools (10 million+ downloads)
  - X-Ray .NET Agent (6 million+ downloads)
  - Porting Assistant for .NET (2,400+ customers)
  - ... and several others

# Investment themes



# AWS .NET OSS investment themes

- Engineering contribution areas
  - Enable transition of .NET apps to Linux
    - Identity support among other areas
  - .NET developer tooling
- Provide financial support to community projects
- Free AWS credit codes for testing and hosting .NET OSS projects
- Support .NET user groups!

# Porting Assistant for .NET

- Porting Assistant for .NET helps you port .NET Framework apps to .NET
- Provides a pathway for .NET Framework apps to Linux
- We have been maintaining and building upon this project since 2019
- It is currently used by thousands of customers

## CALL TO ACTION

Contribute to making Porting Assistant better and help us tackle the long tail of incompatibilities



# 2022 projects



# Web Forms to Blazor conversion

- A capability in Porting Assistant for .NET
- Helps port ASP.NET Web Forms to Blazor

## CALL TO ACTION

It is far from complete, and if you care about Blazor, contribute to our code translation agent (CTA) – the powerhouse behind Porting Assistant for .NET



# Core WCF

## A port of WCF to .NET Core, available through Porting Assistant for .NET

- We are in lockstep with Microsoft
- We built federated identity support on CoreWCF
- Contributed to a design for transport layer enhancement
- Currently contributing to a RabbitMQ implementation (WIP)

### CALL TO ACTION

Come talk to us if you're interested in discussing Core WCF and looking to contribute to this project in some way



# gMSA for Linux containers

## AD connectivity from Linux Containers using gMSAs

- Launched open-source credentials-fetcher
- RPMs in Fedora
- Amazon Linux 2022 (in RC 3.1)
- gMSA support on Amazon ECS Linux containers (in preview)

### CALL TO ACTION

Contribute to credentials-fetcher to add more Linux distros

Come talk to us in the booth if you're interested in AD use case on AWS



# Native ahead of time (AOT) on AWS tooling

## Helps improve Lambda cold start performance

- Lambda to Native AOT converter AWS Labs project
- Native AOT support in .NET CLI through Lambda tools
- Native AOT support on SAM CLI
- We also added a localization feature to support Native AOT in .NET runtime

### CALL TO ACTION

Come talk to us if you're interested in discussing Native AOT and contributing to our OSS tools



# AWS Deploy Tool for .NET

## Helps improve the .NET deployment experience to AWS

- Currently supports deployment to AWS Elastic Beanstalk, Amazon ECS, and AWS AppRunner
- Supports ASP.NET Core Web apps, Blazor WebAssembly apps, and long-running services
- Easy to use tooling and works on .NET CLI and with AWS Toolkit for Visual Studio

### CALL TO ACTION

Come talk to us if you're interested in discussing about the AWS Deployment tool and contributing to our OSS projects



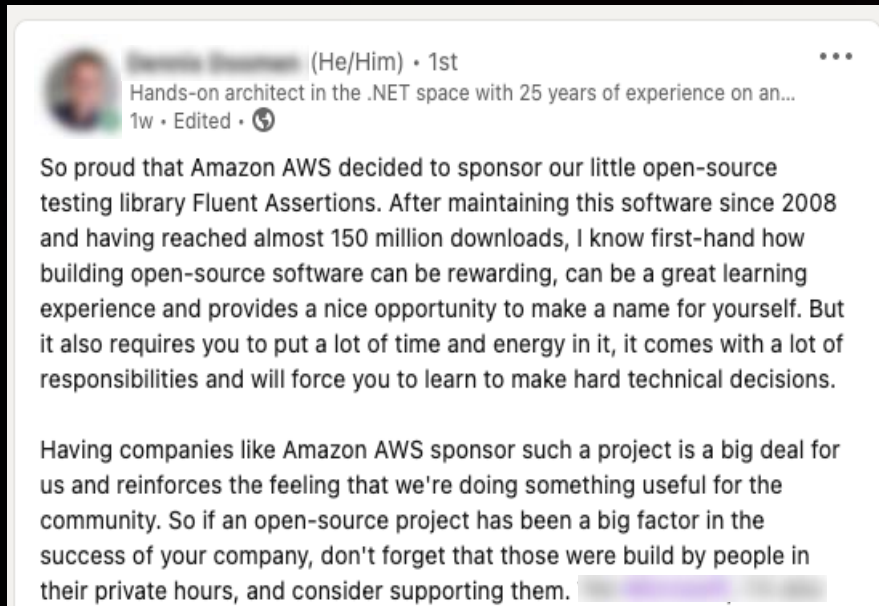
# Our presence in the .NET OSS community



# Funding of community projects

AWS has pledged to fund 10 community projects up to \$5,000 each in 2022

Funded projects to date – Moq, FluentValidation, FluentAssertions, Autofac, Buildalyzer, AutoMapper, ImageSharp, RestSharp, and Swashbuckle



**[Profile Picture]** (He/Him) • 1st  
Hands-on architect in the .NET space with 25 years of experience on an...  
1w • Edited • 🔒

So proud that Amazon AWS decided to sponsor our little open-source testing library Fluent Assertions. After maintaining this software since 2008 and having reached almost 150 million downloads, I know first-hand how building open-source software can be rewarding, can be a great learning experience and provides a nice opportunity to make a name for yourself. But it also requires you to put a lot of time and energy in it, it comes with a lot of responsibilities and will force you to learn to make hard technical decisions.

Having companies like Amazon AWS sponsor such a project is a big deal for us and reinforces the feeling that we're doing something useful for the community. So if an open-source project has been a big factor in the success of your company, don't forget that those were build by people in their private hours, and consider supporting them.



**[Profile Picture]**

Huge thanks to Amazon's .NET on AWS team [@dotnetonAWS](#) for sponsoring the development of **FluentValidation** 🙏

2:17 AM · May 20, 2022 · Twitter for iPhone

24 Retweets 3 Quote Tweets 218 Likes

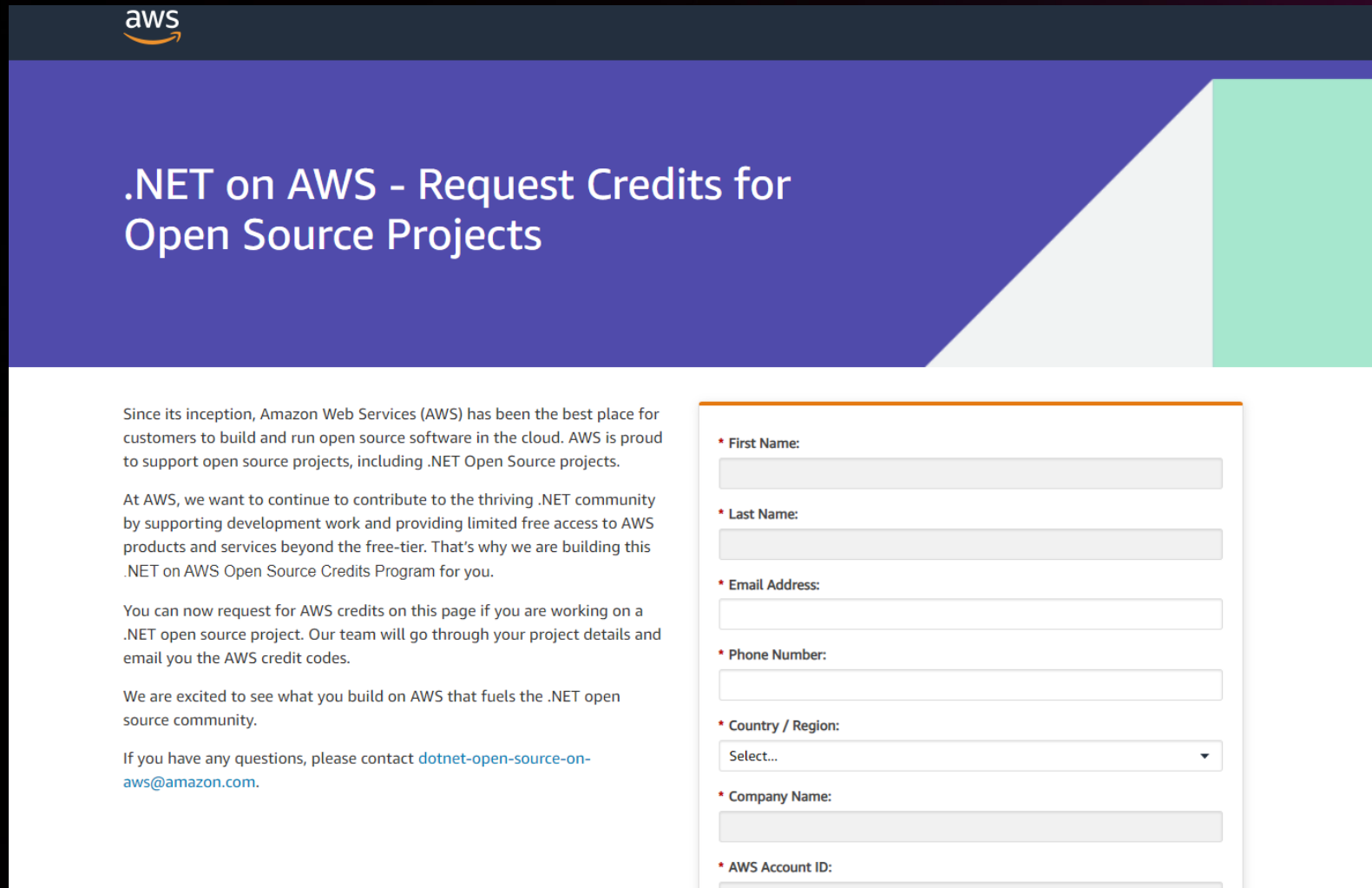


**[Profile Picture]**

Huge thanks to AWS and [@dotnetonAWS](#) for being a great OSS partner and sponsoring Buildalyzer, which they use in several of their own projects. This is how it's supposed to work. They've also been engaging me and others in discussions around how to help the .NET community ☀️.

10:22 AM · May 23, 2022 · Twitter for iPhone

# Free AWS credits for .NET OSS projects



**aws**

## .NET on AWS - Request Credits for Open Source Projects

Since its inception, Amazon Web Services (AWS) has been the best place for customers to build and run open source software in the cloud. AWS is proud to support open source projects, including .NET Open Source projects.

At AWS, we want to continue to contribute to the thriving .NET community by supporting development work and providing limited free access to AWS products and services beyond the free-tier. That's why we are building this .NET on AWS Open Source Credits Program for you.

You can now request for AWS credits on this page if you are working on a .NET open source project. Our team will go through your project details and email you the AWS credit codes.

We are excited to see what you build on AWS that fuels the .NET open source community.

If you have any questions, please contact [dotnet-open-source-on-aws@amazon.com](mailto:dotnet-open-source-on-aws@amazon.com).

\* First Name:

\* Last Name:

\* Email Address:

\* Phone Number:

\* Country / Region:

\* Company Name:

\* AWS Account ID:

<https://pages.awscloud.com/dotNETOpenSourceOnAWSCreditsProgram.html>



# .NET user groups support

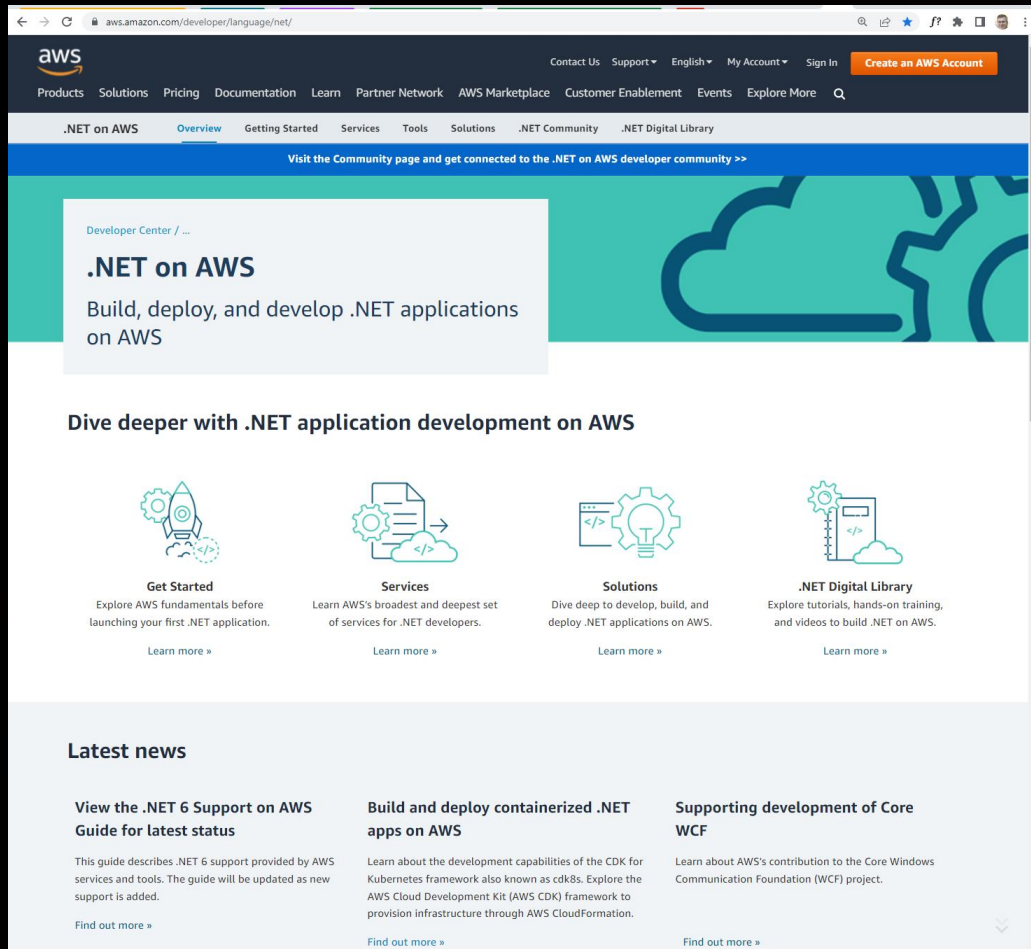
- Need a technical .NET presenter?
- Need help offsetting costs of your events?
- Need some AWS swag?

**Let us know!**



# Interested in knowing more?

Check out <https://aws.amazon.com/developer/language/net/>



The screenshot shows the AWS .NET on AWS developer page. The header includes the AWS logo, navigation links (Products, Solutions, Pricing, Documentation, Learn, Partner Network, AWS Marketplace, Customer Enablement, Events, Explore More), and user options (Contact Us, Support, English, My Account, Sign In, Create an AWS Account). The main content area features a hero section with the title ".NET on AWS" and the subtitle "Build, deploy, and develop .NET applications on AWS". Below this is a section titled "Dive deeper with .NET application development on AWS" with four cards: "Get Started", "Services", "Solutions", and ".NET Digital Library". Each card has an icon and a "Learn more" link. The bottom section is titled "Latest news" and contains three articles: "View the .NET 6 Support on AWS Guide for latest status", "Build and deploy containerized .NET apps on AWS", and "Supporting development of Core WCF".



The banner features the AWS logo in the top left corner. The main text reads "Connect with the .NET on AWS Community". Below the text are four social media icons: Twitter, a community icon, GitHub, and a document icon.



# Thank you!

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