



과학기술정보통신부

nipa 정보통신산업진흥원  
National IT Industry Promotion Agency



2021

공개SW

페스티벌

ONLINE FESTIVAL



개발자와  
함께  
성장하는  
오픈소스

# 오픈소스 생태계 문화와 Microsoft의 이너소스 사례

소속 : Microsoft  
이름 : 유저스틴

## 유저스틴

시니어 클라우드 아드보캇  
Microsoft  
Developer Relations

 @justinchronicle

 @justinyoo

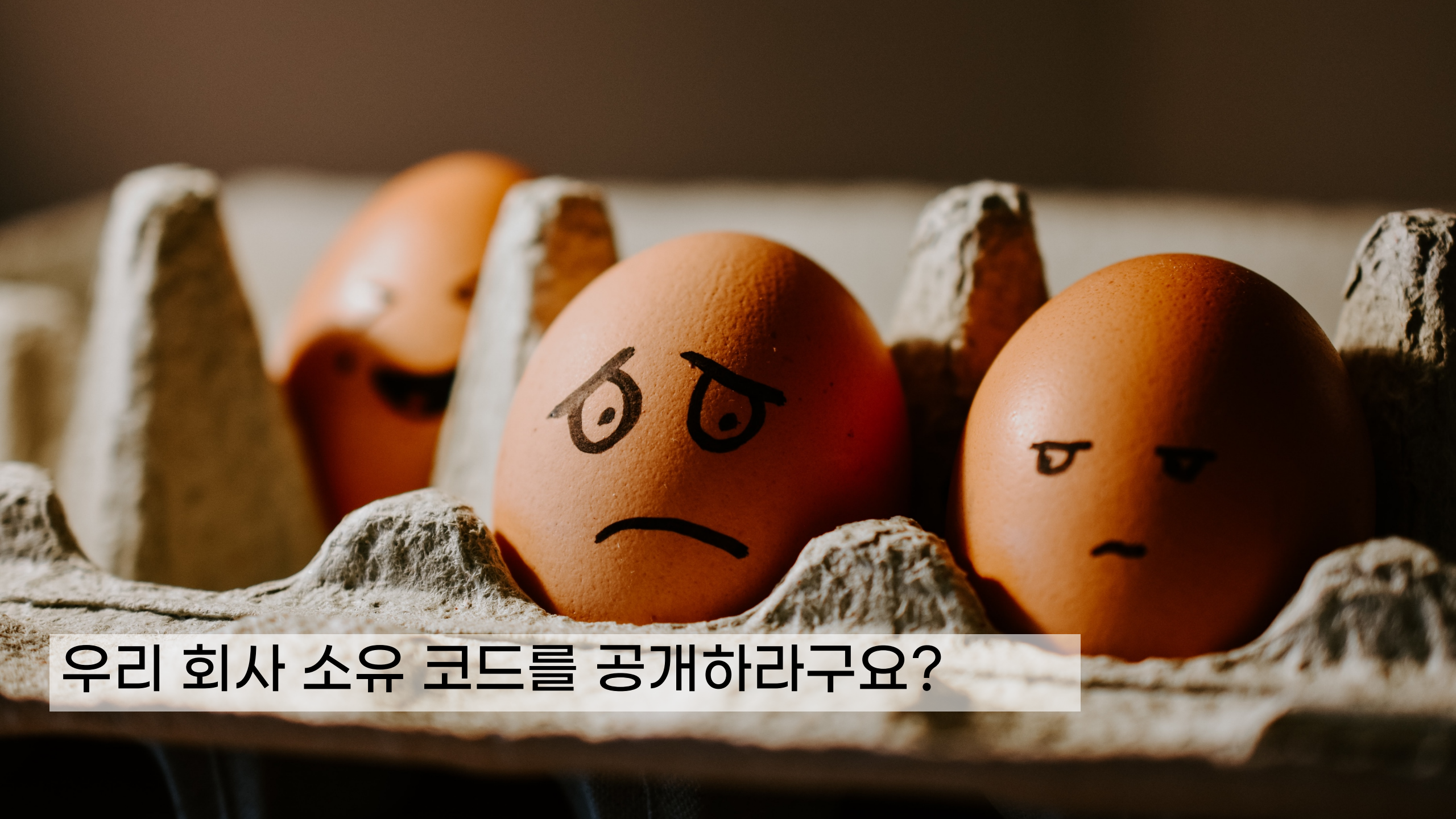


# 오픈소스 생태계 혹은 오픈소스 문화

무슨 의도인지  
어떤 의사 결정 과정을 거쳤는지  
어떻게 관리할 것인지  
누가 기여했는지  
...

# 투명성 / Transparency

# 협업 / Collaboration



우리 회사 소유 코드를 공개하라고요?



Tim O'Reilly

# 2000년 이너소스 개념 도입

굳이 오픈소스 프로젝트의  
라이선스 모델을 따를 필요 없음

굳이 오픈소스 프로젝트의  
라이선스 모델을 따를 필요 없음

**소스 코드를 공개할 필요 없음**

대신 오픈소스 프로젝트의 문화를 도입

무슨 의도인지  
어떤 의사 결정 과정을 거쳤는지  
어떻게 관리할 것인지  
누가 기여했는지  
...

A photograph of Satya Nadella, CEO of Microsoft, speaking at a podium. He is wearing a dark suit jacket over a light blue button-down shirt and glasses. His hands are clasped in front of him. The background features a large, illuminated Microsoft logo on a wall. The logo is in a dark blue color and is partially obscured by a white text box on the right side of the image.

# Microsoft

**내부적으로  
오픈소스 프로젝트 처럼 운영합시다.**

A photograph of Satya Nadella, CEO of Microsoft, speaking at a podium. He is wearing a dark suit jacket over a light blue button-down shirt and glasses. His hands are clasped in front of him. The background is a large, illuminated Microsoft logo on a wall.

# Microsoft

내부적으로  
오픈소스 프로젝트 처럼 운영합시다.

**직원이라면 누구든 다른 직원의 코드를  
필요에 따라 볼 수 있고  
이를 사용할 수 있어야 합니다.**



모든 소스 코드는 이너소스 방식으로 운영

많은 수는 아예 오픈소스 프로젝트 형식으로 운영



Search or jump to...

Pull requests Issues Marketplace Explore



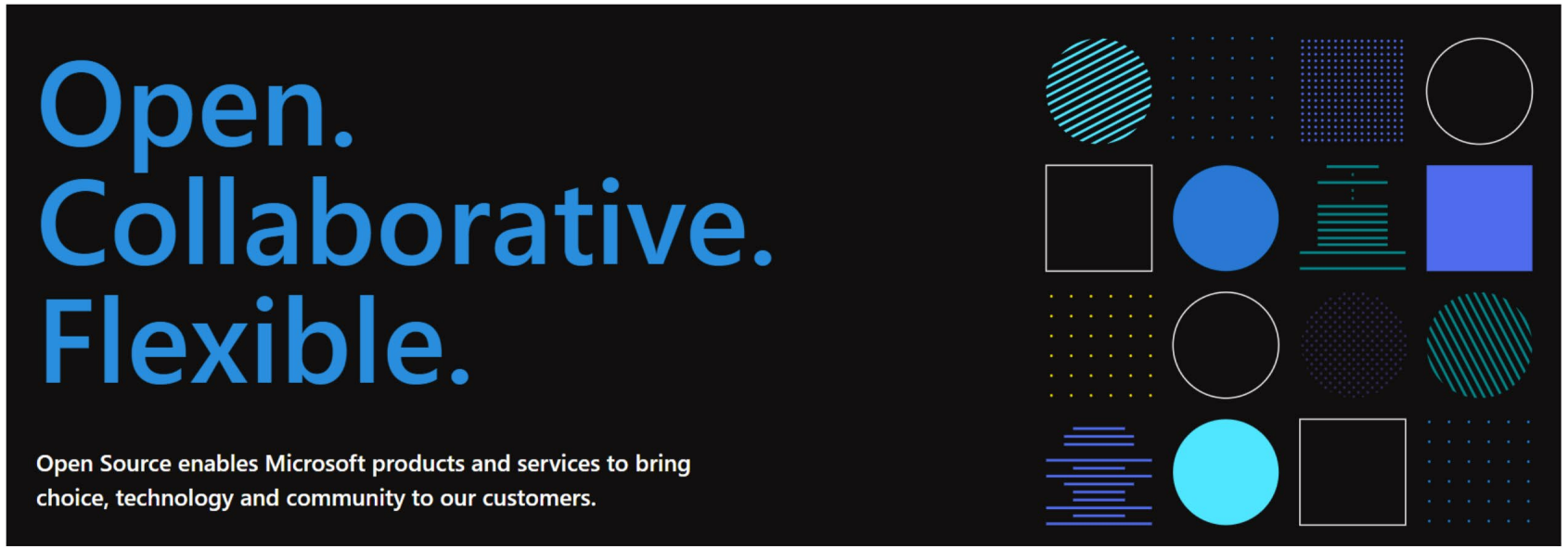
# Microsoft

Open source projects and samples from Microsoft

Redmond, WA <https://opensource.microsoft.com> @OpenAtMicrosoft [opensource@microsoft.com](mailto:opensource@microsoft.com) Part of Microsoft Open Source Verified

Overview Repositories 5.4k Packages People 23.2k Teams 3.0k Projects 82 Insights Sponsoring 24

README.md



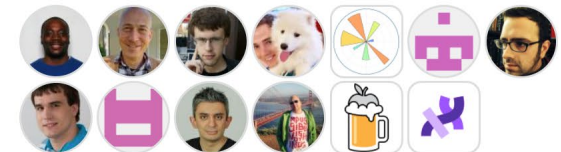
Open Source enables Microsoft products and services to bring choice, technology and community to our customers.

## People



[View all](#)

## Sponsoring



[View all](#)



Search or jump to...

Pull requests Issues Marketplace Explore



# Microsoft Azure

APIs, SDKs and open source projects from Microsoft Azure

## github.com/Azure

Redmond, WA & the cloud <https://docs.microsoft.com/en-us/a...> @Azure opensource@microsoft.com Part of Microsoft Open Source Verified

Overview Repositories 2.0k Packages People 16.5k Teams 1.4k Projects 57 Insights

### Pinned

**azure-sdk-for-net** Public

This repository is for active development of the Azure SDK for .NET. For consumers of the SDK we recommend visiting our public developer docs at <https://docs.microsoft.com/en-us/dotnet/azure/> or ou...

C# 3k 3k

**azure-powershell** Public

Microsoft Azure PowerShell

C# 2.8k 2.7k

**azure-iot-sdks** Public

SDKs for a variety of languages and platforms that help connect devices to Microsoft Azure IoT services

746 633

**azure-cli** Public

Azure Command-Line Interface

**azure-sdk-for-python** Public

This repository is for active development of the Azure SDK for Python. For consumers of the SDK we recommend visiting our public developer docs at <https://docs.microsoft.com/en->

### People



[View all](#)

### Top languages

C# Python TypeScript JavaScript PowerShell

### Most used topics

[Manage](#)


# Community Resources

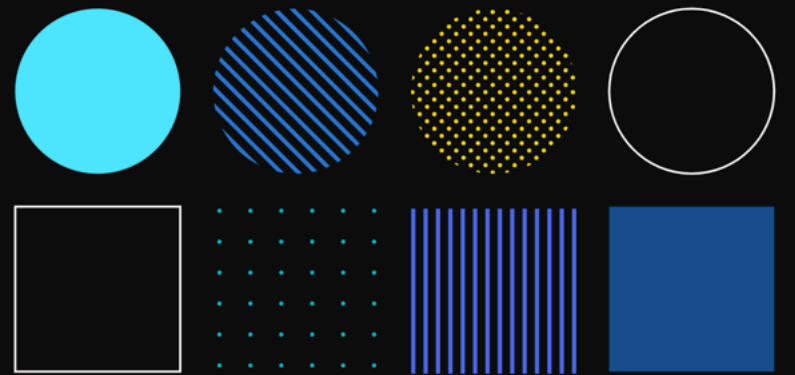
We welcome you to our open communities. Please check out our Code of Conduct and one-time Contributor License Agreement to help us all participate with care.

[aka.ms/open-at-msft](https://aka.ms/open-at-msft)

- [Microsoft's Open Source Code of Conduct ↗](#)
- [Microsoft Contributor License Agreement ↗](#)
- [Third-Party Disclosures ↗](#)
- [Microsoft's Open Source Program ↗](#)
- [The Open Source Guides ↗](#)

 [OpenAtMicrosoft ↗](#)

 [microsoft/opensource.microsoft.com ↗](https://github.com/microsoft/opensource.microsoft.com)



# FOSS Fund

[aka.ms/foss-fund](https://aka.ms/foss-fund)

The Free and Open Source Software Fund (FOSS Fund) is a way for our employees to collectively select open source projects to receive \$10,000 sponsorship awards throughout the year.

Microsoft's engineers select projects they are super passionate about. Only employees who contribute to open source projects can participate in the selection process.

[Learn about the Microsoft FOSS Fund process](#) ↗



# 직원들이 선택한 커뮤니티 오픈소스 프로젝트

연간 1만불 상당 현금 지원





## ajv

The fastest JSON validator for Node.js and browser.

Used in many Microsoft projects.

[ajv.js.org](http://ajv.js.org) ↗



## Ngrx

Reactive Extensions for Angular. Used by many Microsoft projects.

Sponsorship towards core contributor Brandon Roberts.

<https://ngrx.io/> ↗



## ESLint

Find and fix problems in your JavaScript code.

ESLint is an Open Source project maintained by the ESLint community.



## Chayn

Award-winning feminist tech project helping survivors of abuse get the information & support they need. Open-source. Volunteer-run. 'Design with, not for.'

Chayn is a global nonprofit, run by survivors and allies from around the world, creating resources to inform and support the healing of survivors of gender-based violence. We create open source online resources and services for survivors of abuse that are trauma-informed, intersectional, multi-lingual and feminist.

[chayn.co](http://chayn.co) ↗

## Ooui

A small cross-platform UI library that brings the simplicity of native UI development to the web.

Ooui(pronounced weee!) is a small cross-platform UI library for .NET that uses web technologies.

[github.com/praecclarum/Ooui](https://github.com/praecclarum/Ooui) ↗



## dbaTools

dbatools is PowerShell module that you may think of like a command-line SQL Server Management Studio.



## .NET Nano Framework

.NET nanoFramework goal is to be a platform that enables the writing of managed code applications for constrained embedded devices. Developers can harness the familiar IDE Visual Studio and their .NET (C#) knowledge to quickly write applications without having to worry about the low level hardware intricacies of a micro-controller.

Developers can harness the familiar IDE Visual Studio and their .NET (C#) knowledge to quickly write applications without having to worry about the low level hardware intricacies of a micro-controller.

[nanoframework.net](http://nanoframework.net) ↗

## syn

Syn is a parsing library for parsing a stream of Rust tokens into a syntax tree of Rust source code.

47% of all published Rust crates on crates.io depend transitively on syn. The Microsoft windows crate as well as the Azure SDK for Rust depend on syn for code generation. Sponsorship to maintainer David Tolnay.

[github.com/dtolnay/syn](https://github.com/dtolnay/syn) ↗

## Colorama

A simple cross-platform colored terminal text in Python

개인적인 사례를 하나 들어볼까요?

내 개인 프로젝트가  
마이크로소프트 프로젝트가 된  
썰 폰다.txt



# 개인이 운영하던 오픈소스 프로젝트가

개인이 운영하던 오픈소스 프로젝트가  
회사가 운영하는 오픈소스 프로젝트로 이관되고

개인이 운영하던 오픈소스 프로젝트가  
회사가 운영하는 오픈소스 프로젝트로 이관되고  
이너소스 형태로 지원을 받게된 얘기



Azure

탐색 ▾ 제품 ▾ 솔루션 ▾ 가격 ▾ 파트너 ▾ 리소스 ▾

체험 계정

검색



Docs 지원 문의하기 로그인

aka.ms/azfunc

홈 / 서비스 / Azure Function

# Azure Function

서버를 사용하지 않는 코드로 이벤트 처리

체험 계정 만들기

제품 개요 기능 보안 가격 설명서 시작하기 고객 사례 업데이트 FAQ

## 서버리스 컴퓨팅으로 서버리스 애플리케이션 개발을 가속화 및 간소화

복잡한 오케스트레이션 문제도 해결할 수 있는 이벤트 기반 서버리스 컴퓨팅 플랫폼인 Functions를 사용하여 더 효율적으로 개발하세요. 추가 설정 없이 로컬에서 빌드 및 디버그하고 클라우드에서 대규모로 배포 및 운영하며 트리거와 바인딩을 사용하여 서비스를 통합하세요.

영업 팀과 채팅

# 오픈소스 서버리스 런타임



# OpenAPI 기능 지원을 안함

내가 만들어 봐야겠다!



Search or jump to...



Pull requests Issues Marketplace Explore



This repository has been archived by the owner. It is now read-only.

aliencube / AzureFunctions.Extensions Public archive

Unwatch 9 Star 78 Fork 48

Code Issues 13 Pull requests Discussions Actions Projects Wiki Security Insights Settings

dev 2 branches 40 tags

Go to file Add file Code

justinyoo Update README.md aca0051 on May 26 355 commits

.github/workflows	Comment out .NET 5 SDK	12 months ago
.vscode	Update debugging settings	12 months ago
docs	Update README.md	15 months ago
icons	Add Configuration.AppSettings package	3 years ago
samples	generate proper names of generic types (#130)	11 months ago
scripts	Update README.md	16 months ago
src	generate proper names of generic types (#130)	11 months ago
templates/OpenApiEndpoints	Update TFM	12 months ago

### About

This provides some useful extensions for Azure Functions.

- extensions
- dependency-injection
- swagger
- azure-functions
- ioc-container
- swagger-ui
- open-api
- hacktoberfest

Readme

MIT License

### Releases 18

Release "swagger-v3.1.1" Latest on Aug 31, 2020

# OpenAPI 문서 실시간 자동 생성



매니저와 1:1 미팅 중



“ 애저 평션에  
이 기능이  
아직 부족하다

“ 내 오픈소스  
프로젝트가  
딱 그 기능인데?







“

오... 그래?  
한 번 볼까?



Search or jump to...



Pull requests Issues Marketplace Explore



Azure / azure-functions-openapi-extension Public

aka.ms/azfunc-openapi

30

Star 161

Fork 67

Code Issues 45 Pull requests 8 Discussions Actions Projects Wiki Security Insights

main 2 branches 13 tags

Go to file Add file Code

justinyoo Update test cases for DataMember attribute 540625c 4 days ago 237 commits

.github	Add PR template	29 days ago
.vscode	Tag filtering for Swagger UI and OpenAPI document (#221)	2 months ago
builds	Add sign key	18 days ago
docs	Update docs for 0.9.0-preview (#256)	22 days ago
images	Revising .NET 5 Isolated Worker (#187)	3 months ago
release-notes	Add release note for v0.9.0-preview	22 days ago
samples	Add authorisation feature to OpenApiHttpContext (#255)	23 days ago
src	Update test cases for DataMember attribute	4 days ago
templates	Revising .NET 5 Isolated Worker (#187)	3 months ago

About

This extension provides an Azure Functions app with Open API capability for better discoverability to consuming parties

www.nuget.org/packages/microso...

- azure
- openapi
- azure-functions
- swagger-ui
- hacktoberfest
- power-platform

Readme

MIT License

Releases 13

v0.9.0-preview: Update Latest

# 이전 논의 시작 2020년 6월

이전 완료  
2021년 5월



Search for packages...



# Microsoft.Azure.WebJobs.Extensions.OpenApi 0.9.0-preview

Prefix Reserved

This is a prerelease version of Microsoft.Azure.WebJobs.Extensions.OpenApi.

Package Manager

.NET CLI

PackageReference

Paket CLI

Script & Interactive

Cake

```
PM> Install-Package Microsoft.Azure.WebJobs.Extensions.OpenApi -Version 0.9.0-preview
```

README

Dependencies

Used By

**Versions**

Version	Downloads	Last updated
0.9.0-preview	2,608	19 days ago
0.8.1-preview	21,338	3 months ago
0.7.2-preview	120,455	6 months ago

## Downloads

Full stats →

Total **242.8K**



Current version **2.6K**

Per day average **686**

## About

Last updated 19 days ago

[Project website](#)

[Source repository](#)

[MIT license](#)

[Download package](#) (55.16 KB)

[Open in NuGet Package Explorer](#)

[Open in FuGet Package Explorer](#)

[Report package](#)

images	Revising .NET 5 Isolated Worker (#187)	3 months ago
release-notes	Add release note for v0.9.0-preview	22 days ago
samples	Add authorisation feature to OpenApiHttpContext (#255)	23 days ago
src	Update test cases for DataMember attribute	4 days ago
templates	Revising .NET 5 Isolated Worker (#187)	3 months ago
test-integration	Update test cases for DataMember attribute	4 days ago
test	Update test cases for DataMember attribute	4 days ago
.editorconfig	Initial code commit (#1)	14 months ago
.gitignore	Revising .NET 5 Isolated Worker (#187)	3 months ago
CODE_OF_CONDUCT.md	Initial CODE_OF_CONDUCT.md commit	15 months ago
CONTRIBUTING.md	Add issue template	29 days ago
LICENSE	Initial LICENSE commit	15 months ago
Microsoft.Azure.WebJobs.Extensi...	Add integration testing for OpenAPI document rendering (#219)	2 months ago
README.md	Add issue template	29 days ago
SECURITY.md	Initial SECURITY.md commit	15 months ago
Settings.StyleCop	Initial code commit (#1)	14 months ago
key.snk	Add sign key	18 days ago

power-platform

📖 Readme

📄 MIT License

Releases 13

📦 v0.9.0-preview: Update Latest

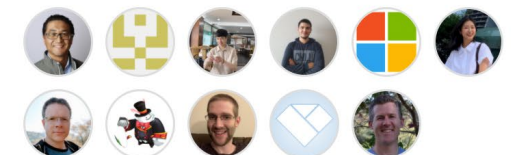
16 days ago

+ 12 releases

Used by 212



Contributors 22



+ 11 contributors

Languages

# 이너소스 관점 눈여겨 볼 것들



커뮤니티 주도의 오픈소스 정책  
VS  
대기업 주도의 오픈소스 정책

개인의 기여에 의존하는 오픈소스 프로젝트  
VS  
팀이 지원하는 오픈소스 프로젝트

# 기존 서비스 런타임과 긴밀한 통합

퓨전 개발팀의 한 부분으로 다른 제품/서비스와 연동

퓨전 개발팀의 한 부분으로 다른 제품/서비스와 연동  
매저, Microsoft 365, 파워플랫폼, 비주얼 스튜디오 등



### Web-Dev-For-Beginners

24 Lessons, 12 Weeks, Get Started as a Web Developer

☆ 35,247 🍴 4,866 JavaScript

[Web-Dev-For-Beginners repository](#) →



### ML-For-Beginners

12 weeks, 25 lessons, 50 quizzes, classic Machine Learning for all

☆ 22,389 🍴 4,589 Jupyter Notebook

[ML-For-Beginners repository](#) → <https://microsoft.github.io/ML-For-Beginners/> ↗



### PowerToys

Windows system utilities to maximize productivity

☆ 60,876 🍴 3,354 C#

[PowerToys repository](#) →



### vscode

Visual Studio Code

☆ 121,916 🍴 20,121 TypeScript

[vscode repository](#) → <https://code.visualstudio.com> ↗



### terminal

The new Windows Terminal and the original Windows console host, all in the same place!

☆ 77,500 🍴 6,000

aka.ms/open-at-msft

# 오픈소스 생태계 문화와 Microsoft의 이너소스 사례

유저스틴

 @justinchronicle  
 @justinyoo



# 감사합니다



과학기술정보통신부



정보통신산업진흥원  
National IT Industry Promotion Agency