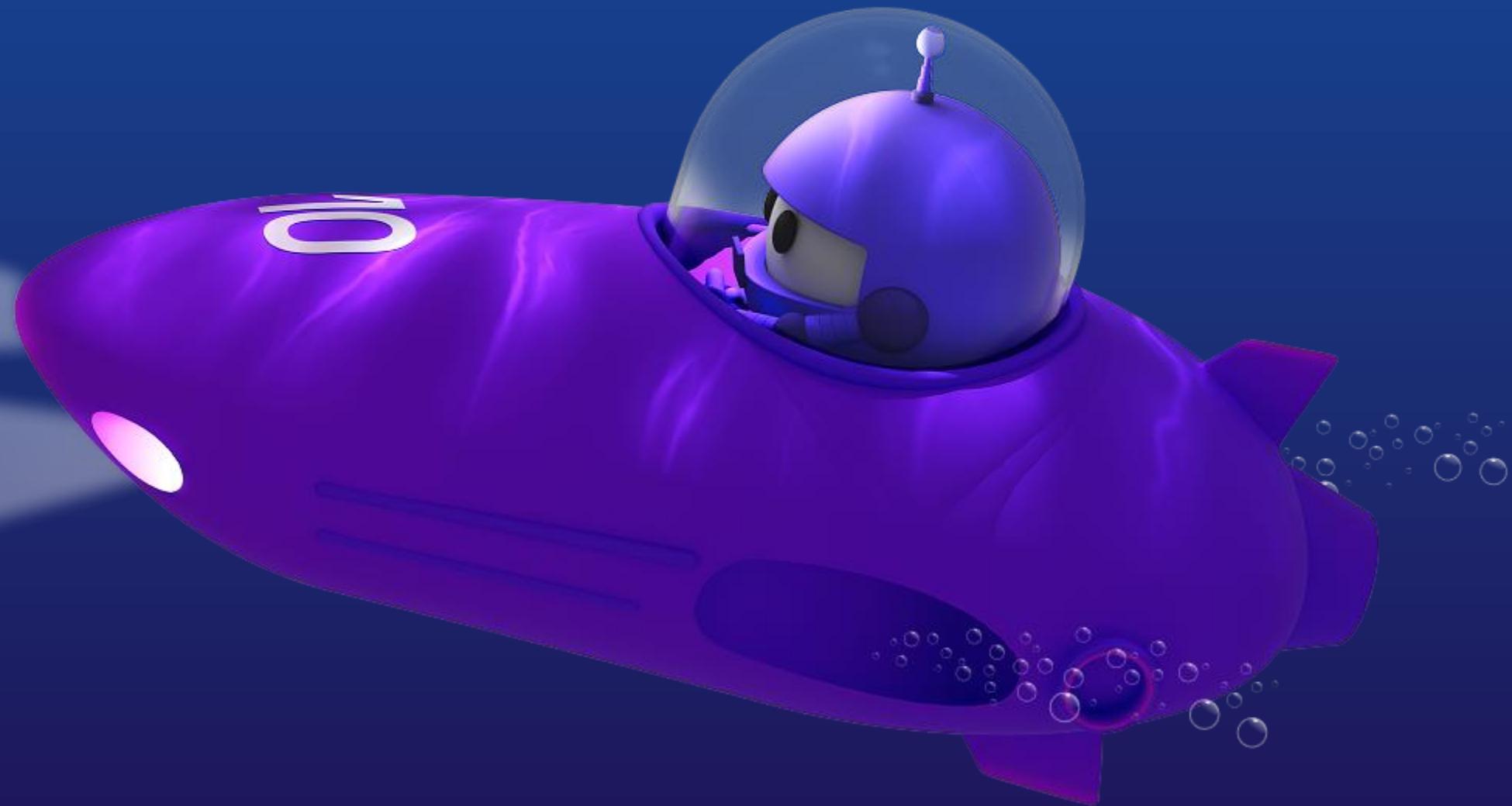
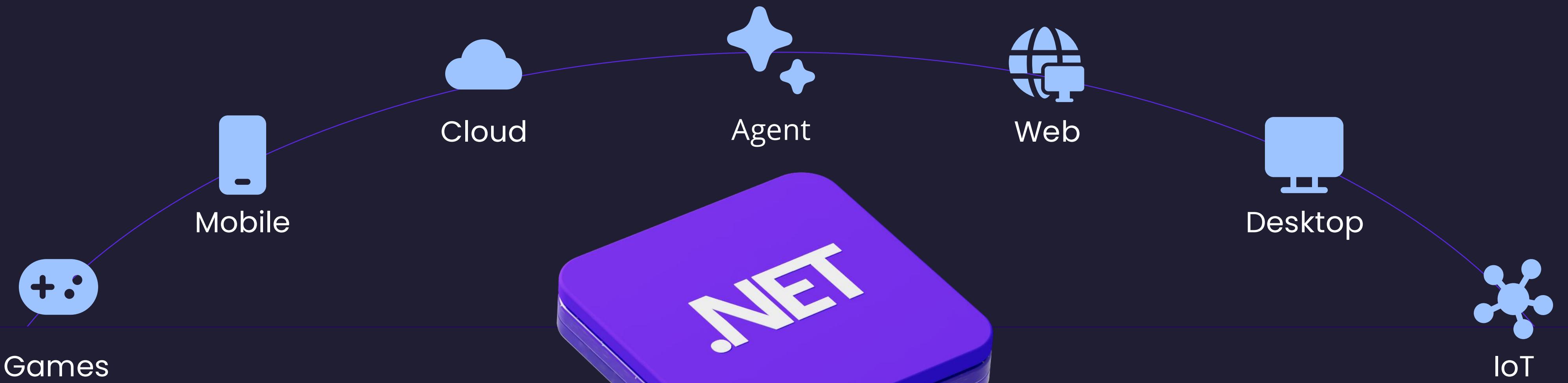


# Welcome to .NET Conf 2025



# Build any app with the tools and libraries you love



Azure



NuGet



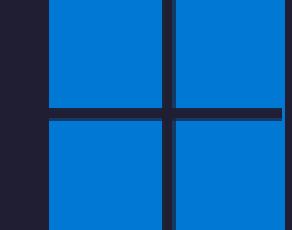
Aspire



Visual Studio



GitHub



Windows



Linux



macOS

# .NET ecosystem momentum

**7+ Million**

Monthly active users

**290K+**

Pull requests merged to .NET

**68K+**

Contributors to .NET

**Top 5**

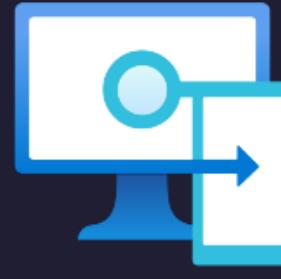
Highest velocity OSS project

**Top 5**

Programming language on GitHub

**.NET powers Microsoft  
at scale**

[aka.ms/dotnet-developer-stories](http://aka.ms/dotnet-developer-stories)





GE Aviation

endjin



**FINLOCKER**



RELEASED

# Announcing .NET 10

[get.dot.net/10](https://get.dot.net/10)

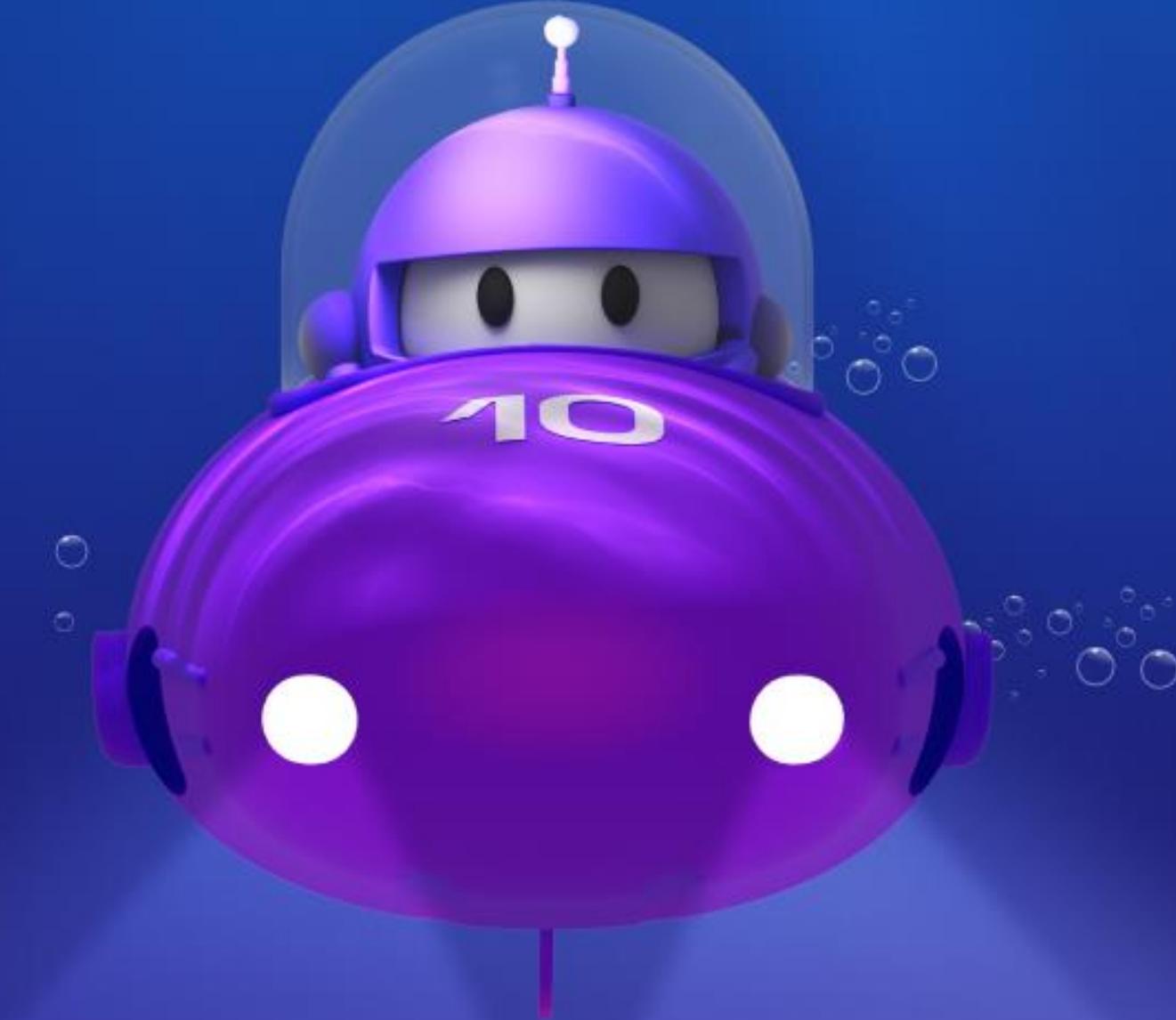
Faster, more elegant, and extensible code with C# 14

Industry leading performance with improvements to help apps launch quicker, run smoother, and scale effortlessly

Supercharged SDK and libraries let you build more secure and future-ready apps with confidence

Modern features for web, cloud, mobile, and cross-platform development designed for today and tomorrow's workloads

Long-Term Support (LTS) release



RELEASED

# Visual Studio 2026

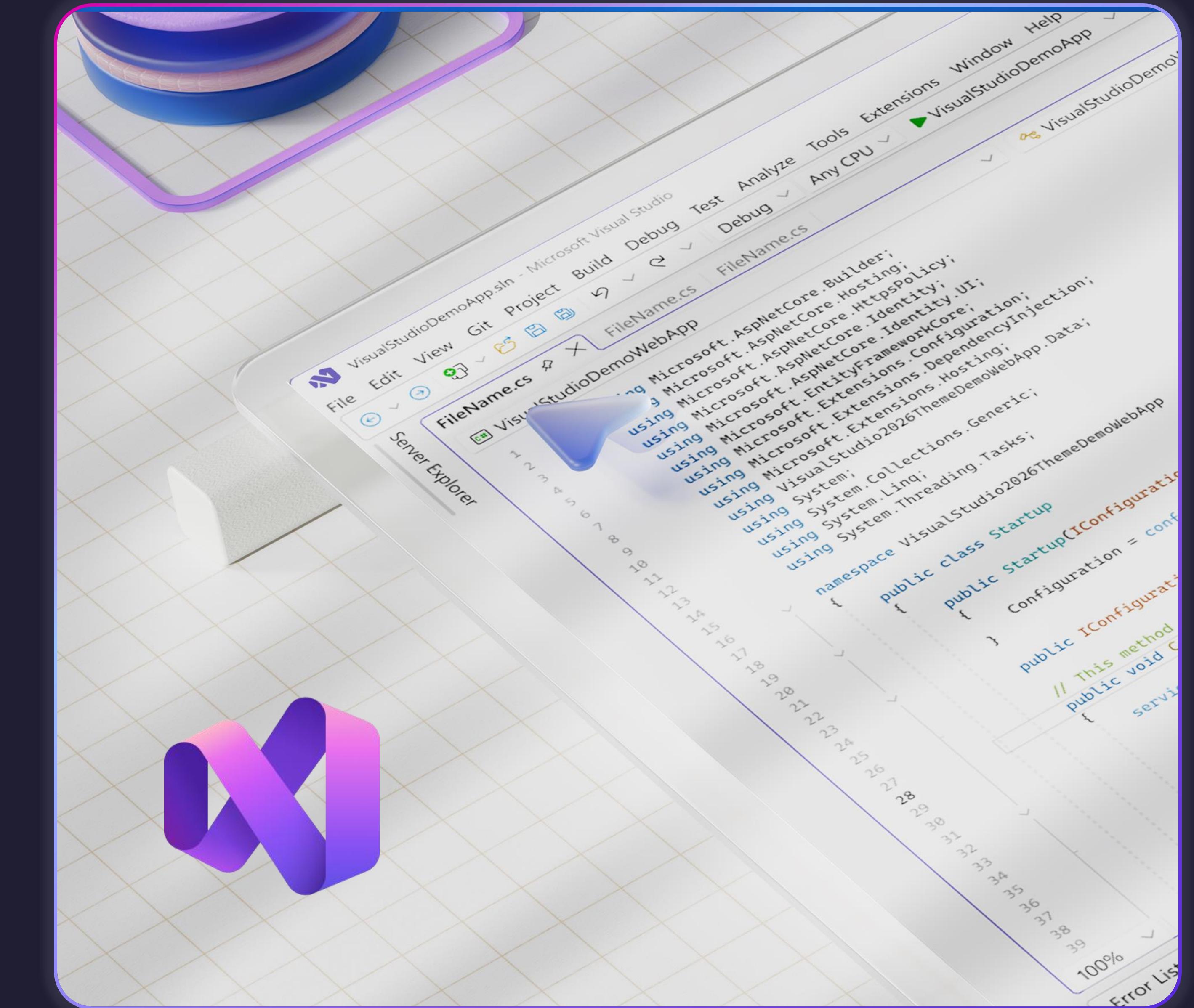
[Visualstudio.com/download](https://Visualstudio.com/download)

Optimized for .NET 10 and C++, and ready to grow with you with monthly feature updates

Instant startup with solutions loading up to 50% faster and a quicker build, edit, debug cycle even on massive codebases

Modern design with Fluent UI makes it lighter and easier to navigate and stay focused on code, not the tool

AI that works for you with new GitHub Copilot capabilities for profiling, testing, and modernization



# Partner contributions to .NET 10



**Red Hat**

Distro  
maintainer  
and security group  
partner



**Uno**  
PLATFORM<sup>®</sup>

Contributed  
Android 16  
support



Enhancing AI  
numerical computing  
through low-level  
hardware intrinsics



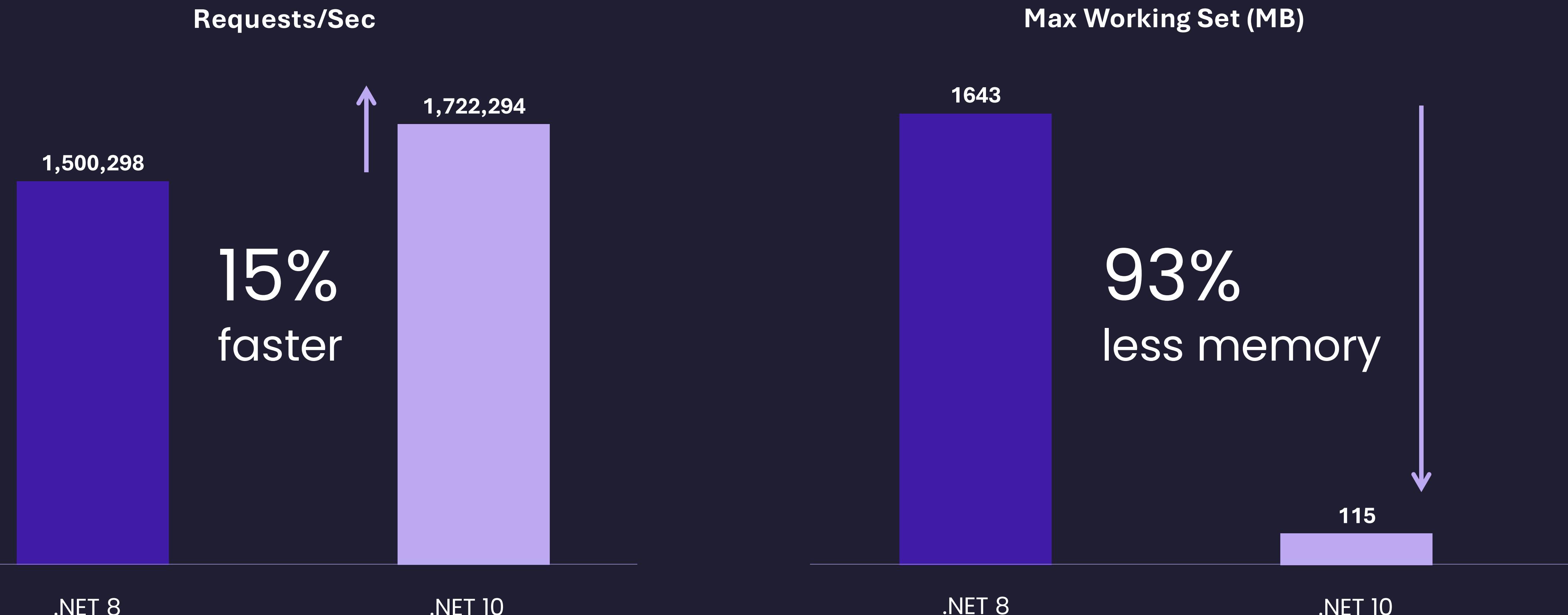
Over 60%  
of community PRs me  
to .NET MAUI repo



# .NET minimal APIs performance

TechEmpower Benchmarks

Intel Gold, 56 logical cores (Linux)



# .NET 10

## Secure, fast, future-ready



### Runtime

Performance improvements, Just-In-Time (JIT) compiler optimizations, improved Garbage Collector (GC), AVX10.2 support for cutting-edge Intel silicon



### .NET SDK

File-based apps with publish support & native AOT, natively create container images, Microsoft.Testing.Platform support in dotnet test, tab-completion scripts for popular shells



### .NET Libraries

MEAI enhancements, first-class support for MCP, new APIs in cryptography, globalization, numerics, serialization, collections, diagnostics, new JSON serialization options, networking enhancements



### Security

Security & cryptography enhancements, including Windows Cryptography API: Next Generation (CNG) support for Post-quantum Cryptography (PQC)



### ASP.NET Core

Simple security with WebAuthN & passkeys, validation for Minimal APIs, OpenAPI 3.1, enhanced app observability & diagnostics, smarter memory management, and improved JSON Patch handling



### Blazor

Improved scalability & reliability with declarative state persistence, complex form validation, QuickGrid enhancements, WebAssembly diagnostics, streamlined JavaScript interop, automated browser testing



### .NET MAUI

Editing, build & runtime performance, Aspire integration, many control enhancements and quality improvements, support for latest platform versions including Xcode 16, Android API 35 & 36



### EF Core

LINQ enhancements, performance optimizations, improved support for Azure Cosmos DB, and named query filters

# C# 14

## Faster, extensible, elegant

Null-conditional assignment

field backed properties

Extension members

Modifiers on simple lambda parameters

nameof supports unbound generic types

Implicit conversions for Span<T> and ReadOnlySpan<T>

Partial events and constructors

User defined compound assignment operators

```
Person? customer = Person.TryNewCustomer();
customer?.Name = "John Doe"; // Null-conditional assignment

public class Person
{
    // field backed property
    public required string Name
    {
        get;
        set => field = !string.IsNullOrWhiteSpace(value) ? value :
               throw new ArgumentException();
    }
}

static class MyEnumerable
{
    // Extension member
    extension<TSource>(IEnumerable<TSource> source)
    {
        public TSource? FirstOrDefault
        {
            get
            {
                foreach (TSource item in source) return item;
                return default;
            }
        }
    }
}
```

“C# has allowed us to be highly productive from the earliest days, and it’s a really solid foundation to build on.”

Sam Cox, Co-Founder & CTO  
Tracebit



# Aspire

Code-first, extensible, observable

## Aspire AppHost + CLI

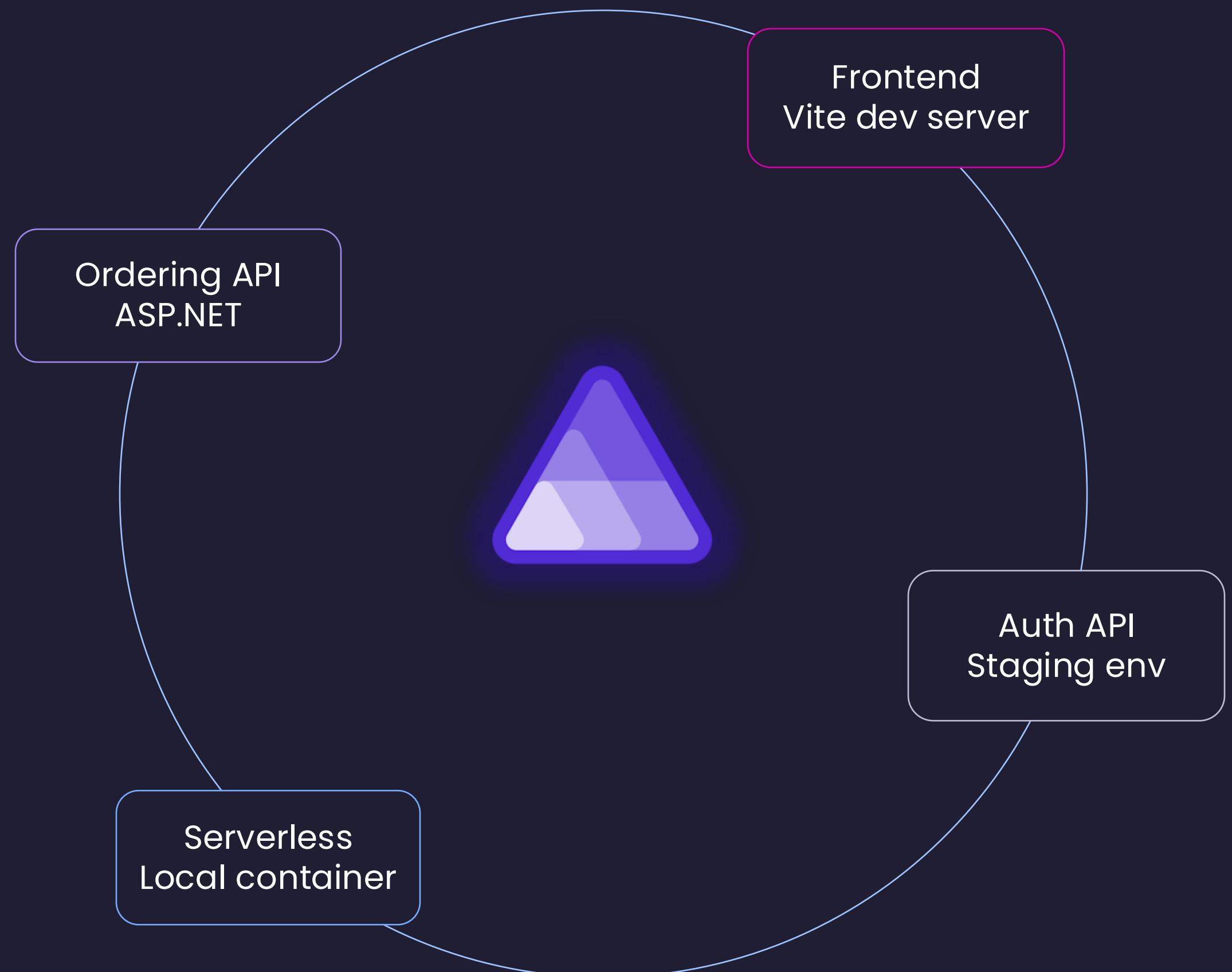
Define your stack in **code** — type-safe, readable, and **debuggable**. Aspire runs it all locally, then shifts to **real cloud services**.

## Aspire Integrations

Plug in **any code or service**, whether it's local or remote. Aspire brings **common patterns** – but can model **anything**.

## Aspire Dashboard

See your **entire stack** running in one place – all your **logs**, **endpoints**, **environment** variables, even full **OpenTelemetry**.



RELEASED

# Aspire 13.0

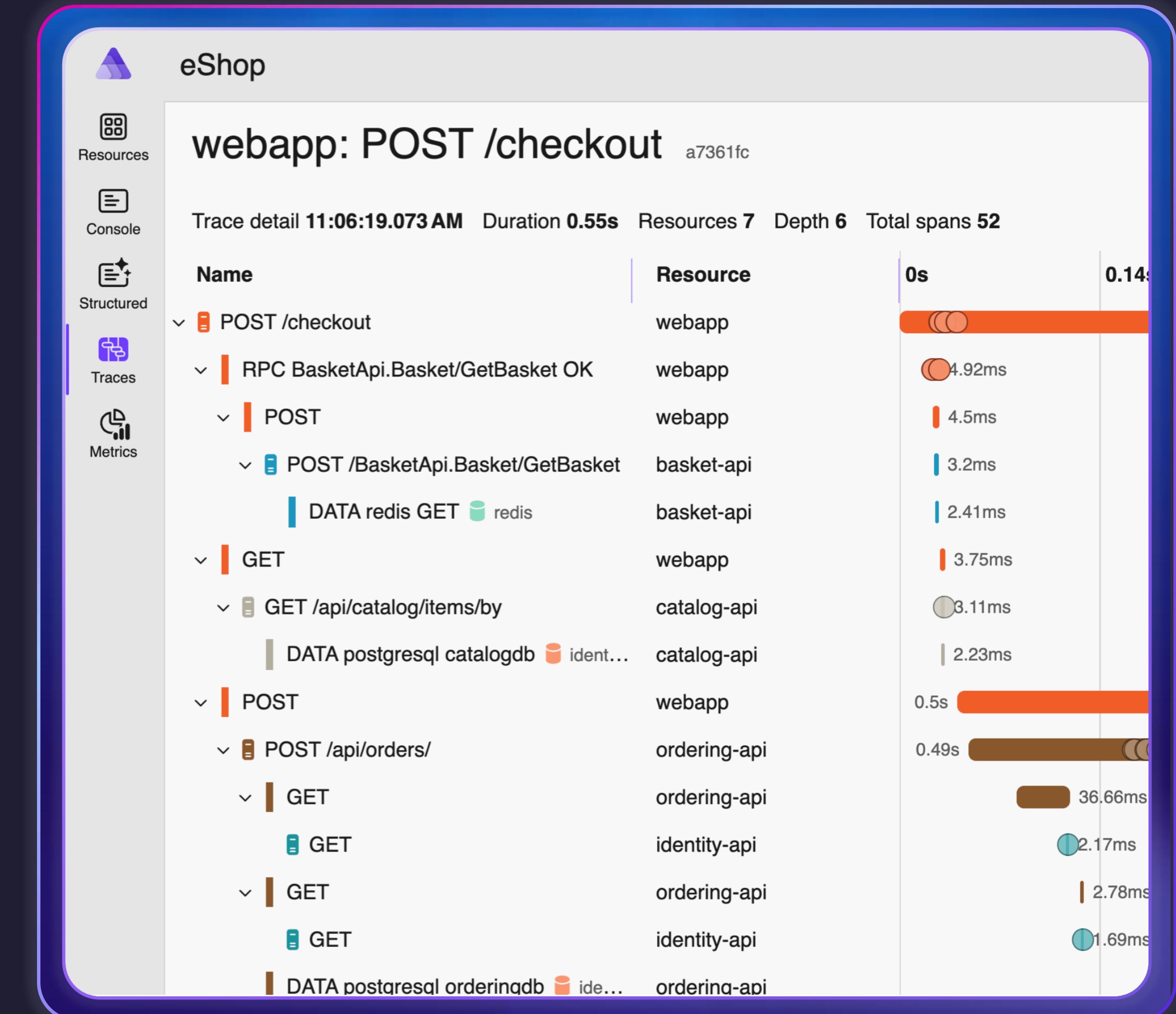
## Aspire.dev

Unified infrastructure across .NET, JavaScript, and Python with debugging, container-deployment, auto-generated Dockerfiles

Modern development experience with CLI enhancements, single-file AppHost support, and quicker onboarding

Seamless build & deployment, built in static file site support, and robust deploy parallelization

Enterprise-ready infrastructure & services with flexible connection strings and certificate trust across languages and containers



“With Aspire most of what we need is available out of the box and is easily extendable to meet any additional bespoke requirements.”

Andrew Johnston, Principal Developer  
Trayport



DEMO



# Aspire to .NET 10



# .NET app modernization

## Challenges of modernizing apps



### Dependency conflicts

Identifying dependencies and researching alternatives can be a guessing game and cause significant re-architecture.



### Deprecated APIs

Learning what APIs are deprecated and how to update them is not always immediately clear and can introduce bugs.



### Takes too long to refactor

Planning and executing an upgrade can take too long and it's hard to prove clear business value or ROI.

## Benefits of modernizing apps



### Reduced security risks

Mitigate and reduce security risks by staying up to date with security patches in runtime and libraries.



### Better performance and scale

Access a cross-platform runtime that delivers order-of-magnitude performance gains through a decade of performance investments.



### Modern APIs, tools, architectures

Access modern APIs, improved tooling and take advantage of cloud-native architectures for automated scaling, monitoring, and secure identity management.

RELEASED

# GitHub Copilot app modernization

Available in Visual Studio 2026

Quickly upgrade .NET versions and associated frameworks with AI agents to increase app performance

Perform end-to-end code assessment and remediation for apps to migrate to Azure

Use AI agents to automatically make code changes for moving to Azure app platform services

The screenshot shows the GitHub Copilot Chat interface integrated into Visual Studio 2026. The main area displays C# code for a service client, with the GitHub Copilot Chat sidebar on the right. The sidebar features a large GitHub Copilot logo and the heading "Modernize with Copilot". It includes three buttons: "Upgrade to a newer version of .NET", "Migrate to Azure", and "Explore more modernization options". Below these buttons, a note says "I might make mistakes, so check for accuracy." A text input field at the bottom contains the placeholder "/help what can you do?". The status bar at the bottom shows file navigation information like "dotnet-cloud-native-build-2023".

```
tServiceClient
r<ProductServiceClient> logger, Products.ProductsClient client)

Fulfill(string productId, int amount)

inventory for {ProductId}", productId);

productInventoryAsync(new Products.CheckProductInventoryRequest

check for {ProductId} complete. Available: {IsEnoughAvailable}", productId, result.

string productId, int amount)

inventory for {ProductId}", productId);

sync(new Products.InventorySubtractionRequest

update for {ProductId} complete.", productId);
```

“Once installed, it just worked — upgrading more than a dozen applications seamlessly in just a matter of hours. That speaks volumes.”

Jordan, Staff Platform Engineer  
FMG



Public Preview

# GitHub Copilot testing for .NET

Available in Visual Studio 2026 Insiders

Automate repetitive testing tasks and turn unit testing into a productivity boost

Create and run tests without slowing your flow, so you can ship faster with fewer bugs

Tests are deterministic and reliable, built on the proven C# compiler and language for predictable, high-quality results

The screenshot shows the Visual Studio 2026 interface with a dark theme. A GitHub Copilot Chat window is open on the right, showing a summary of test generation. It includes sections for 'Test (Preview)', 'Summary of Test Generation', 'Status' (Completed Successfully), 'Total Unit Tests Generated: 335 tests', 'Files Created/Modified: 16 files', 'Test Projects Touched: 1 project', 'Test Coverage Impact' (Initial Coverage: 0.0%, Final Coverage: 16.9%, Coverage Change: +16.9pp), 'Quality Indicators' (Pass/Fail Summary: All tests build and pass), 'Insights & Recommendations' (Uncovered Code Areas: 14 file(s) were skipped), and 'Potential Bugs Detected' (SchoolContext.cs: All DbSet properties (lines 14-22) must). The main code editor shows C# test code for a CoursesController.

```
ContosoUniversity
ContosoUniversity.UnitTests.Controllers.CoursesControllerTests
    [Test]
    public void DeleteConfirmed_CourseWithoutImage_DeletesCourse()
    {
        // Arrange
        var testableCoursesController = new TestableCoursesController(
            context,
            env,
            logger);
        var coursesController = new CoursesController(
            context,
            env,
            logger);

        // Act
        var result = testableCoursesController.DeleteConfirmed("1");

        // Assert
        Assert.Equal("Course deleted.", result.Value.Message);
    }

    [Test]
    public void DeleteConfirmed_CourseWithImage_DeletesCourseAndImage()
    {
        // Arrange
        var testableCoursesController = new TestableCoursesController(
            context,
            env,
            logger);
        var coursesController = new CoursesController(
            context,
            env,
            logger);

        // Act
        var result = testableCoursesController.DeleteConfirmed("1");

        // Assert
        Assert.Equal("Course deleted.", result.Value.Message);
    }

    [Test]
    public void DeleteConfirmed_CourseWithImage_ThrowsException()
    {
        // Arrange
        var testableCoursesController = new TestableCoursesController(
            context,
            env,
            logger);
        var coursesController = new CoursesController(
            context,
            env,
            logger);

        // Act
        var result = coursesController.DeleteConfirmed("1");

        // Assert
        Assert.Equal("Course deleted.", result.Value.Message);
    }
```

Ln: 23, Ch: 2 SPC CRLF Windows 1252

2, 26 Skipped) run in 2.9 sec

Duration

Duration
2.5 sec
85 ms
1.4 sec
1.1 sec
57 ms
49 ms
144 ms
5 ms
66 ms
980 ms
< 1 ms

Run | Debug | Profile

Group Summary

ContosoUniversity.UnitTests

Tests in group: 335

Total Duration: 2.5 sec

Outcomes

335 Passed

Error List Output Code Coverage Res...

GitHub Copilot Chat

@test #C:\Users\cathys\source\repos\ContosoU...

Test (Preview)

0 references

Summary of Test Generation

Status: Completed Successfully

Total Unit Tests Generated: 335 tests

Files Created/Modified: 16 files

Test Projects Touched: 1 project

Projects: ContosoUniversity.UnitTests.csproj

Test Coverage Impact

Initial Coverage: 0.0%

Final Coverage: 16.9%

Coverage Change: +16.9pp

Quality Indicators

Pass/Fail Summary: All tests build and pass

Insights & Recommendations

Uncovered Code Areas: 14 file(s) were skipped (e.g., auto-generated code, no testable members, or LLM restrictions)

Potential Bugs Detected

SchoolContext.cs: All DbSet properties (lines 14-22) must

Active Document X

Ask Copilot or use @workspace

Agent Claude Sonnet 4.5

0 / 0 ^ 30 upgrade-to-NET10 ^ ContosoUniversity1027-2 ^

DEMO



# Modernize to .NET 10



# Build intelligent apps, intelligently

.NET

## Agentic Apps

AI-powered agents infused into  
your .NET apps



Cloud



Web



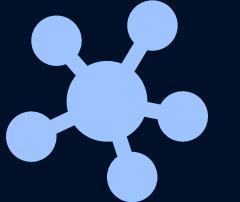
Desktop



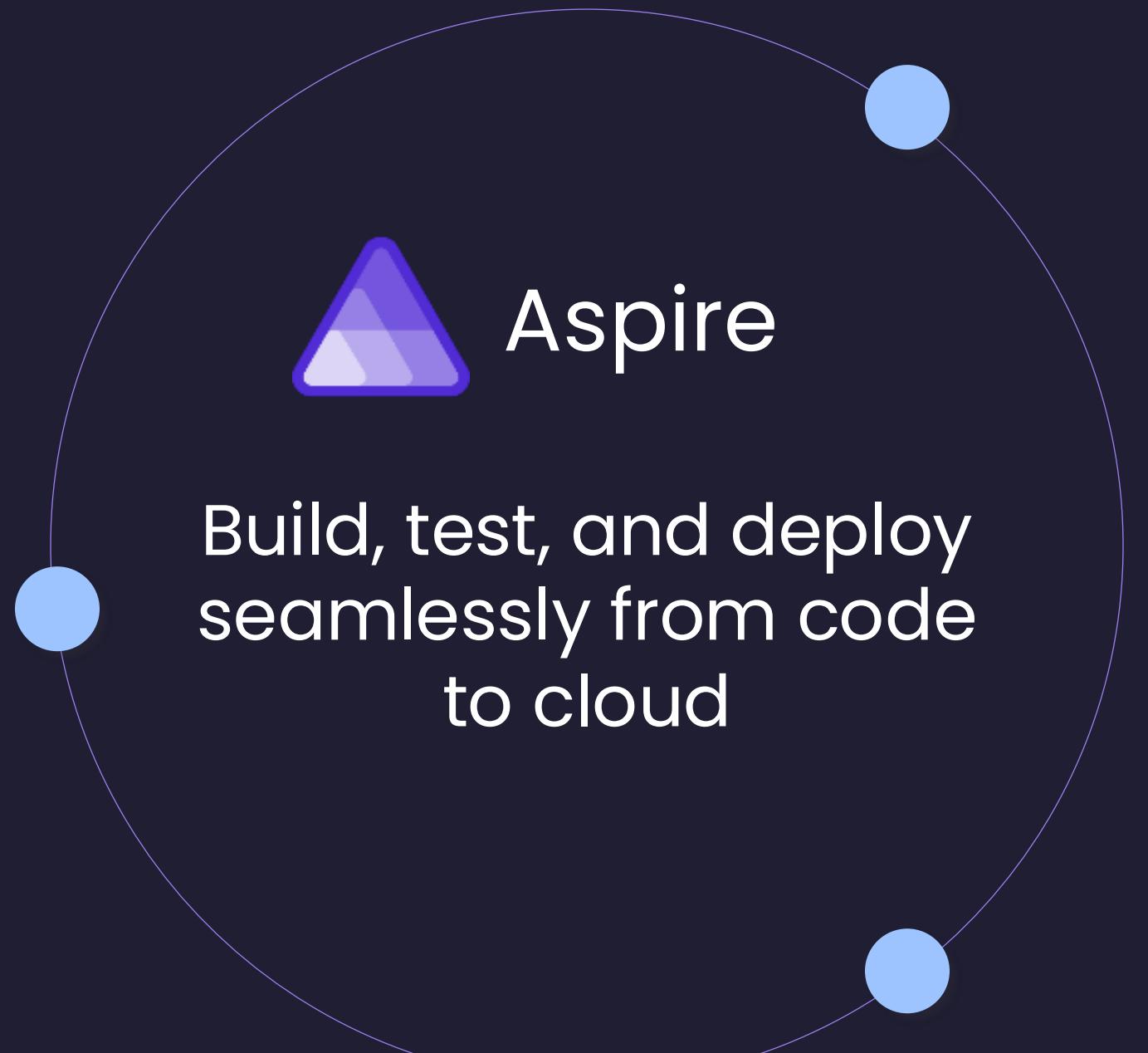
Mobile



Games



IoT



## Agentic DevOps

AI-powered agents operating  
as a member of your  
dev team



Visual Studio



Visual Studio  
Code



GitHub



Azure

Applications

Tools

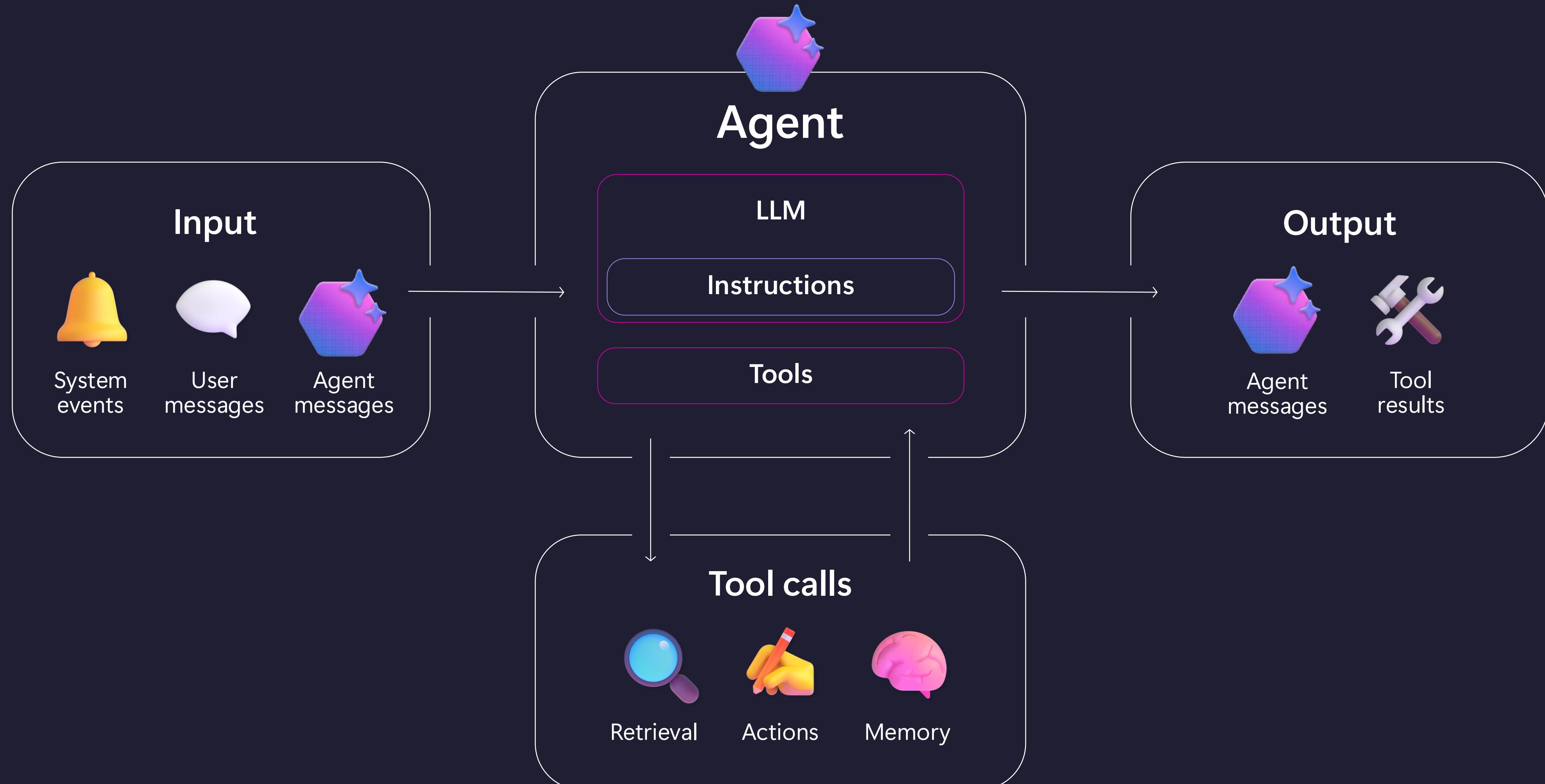


# SHORELESS

Making the impossible  
possible with AI

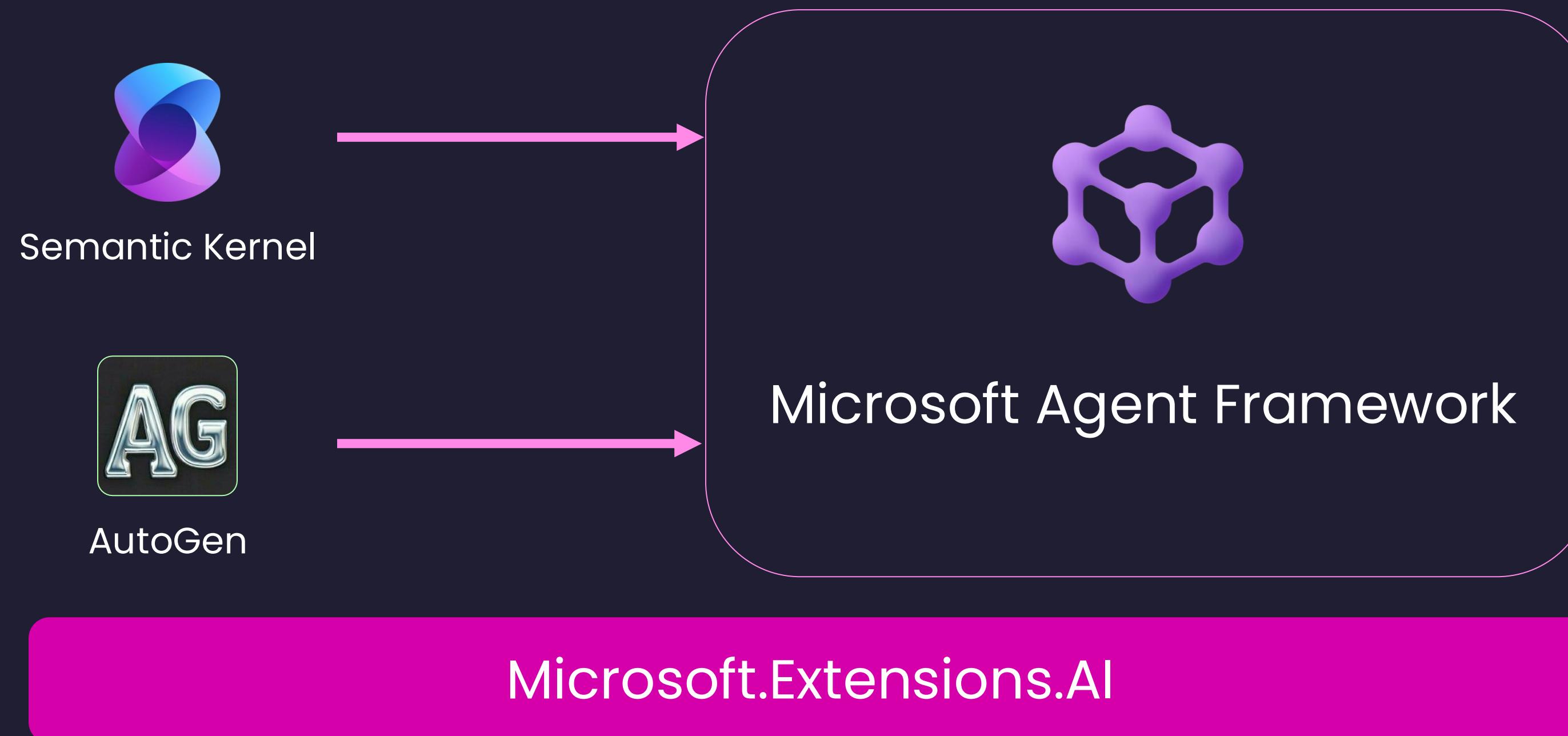


# What is an agent?



# Microsoft Agent Framework

Reliability, flexibility, developer-friendly API



Public Preview

# Microsoft Agent Framework

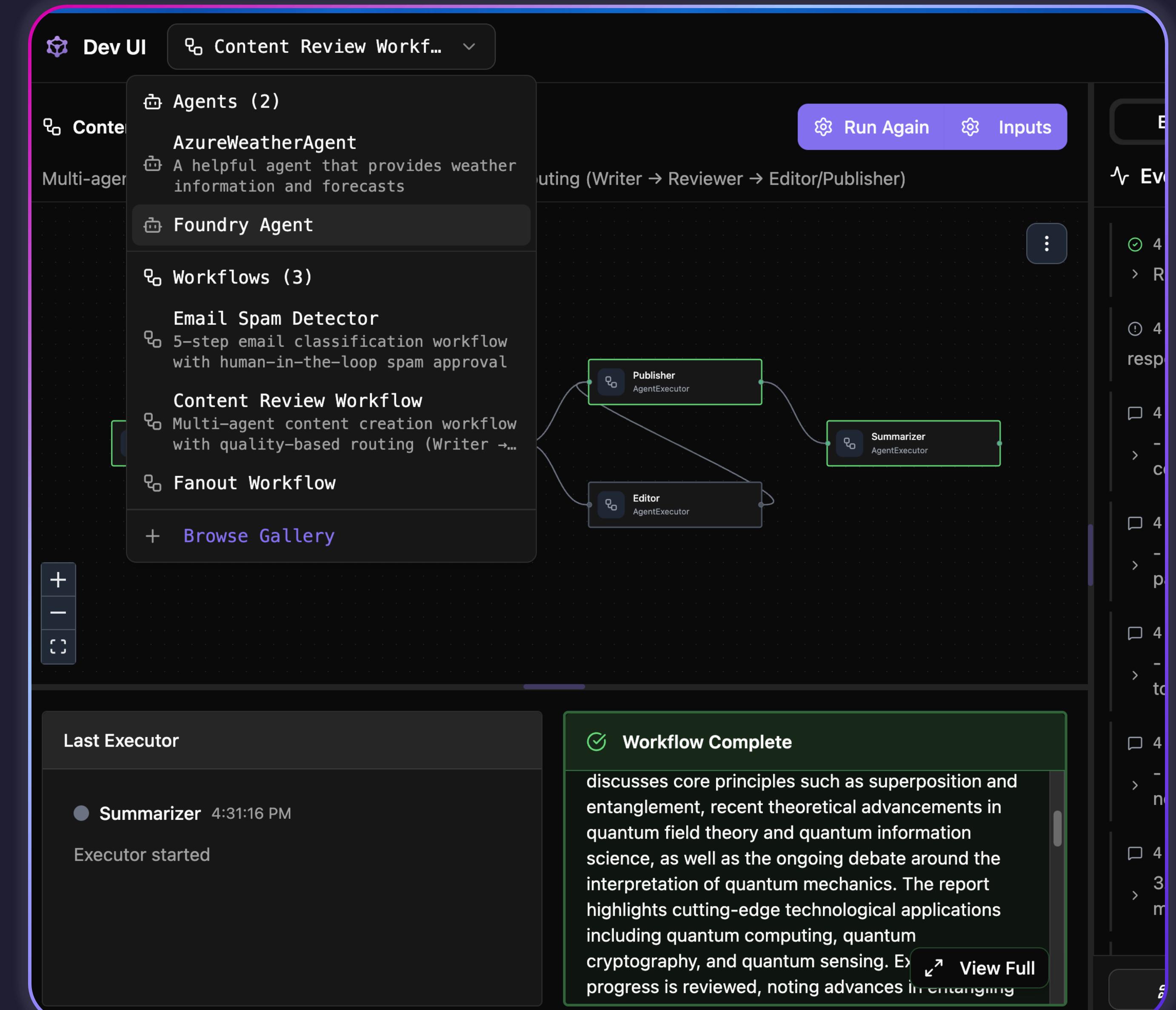
[aka.ms/AgentFramework](https://aka.ms/AgentFramework)

Unified foundation for building AI agents and multi-agent workflows

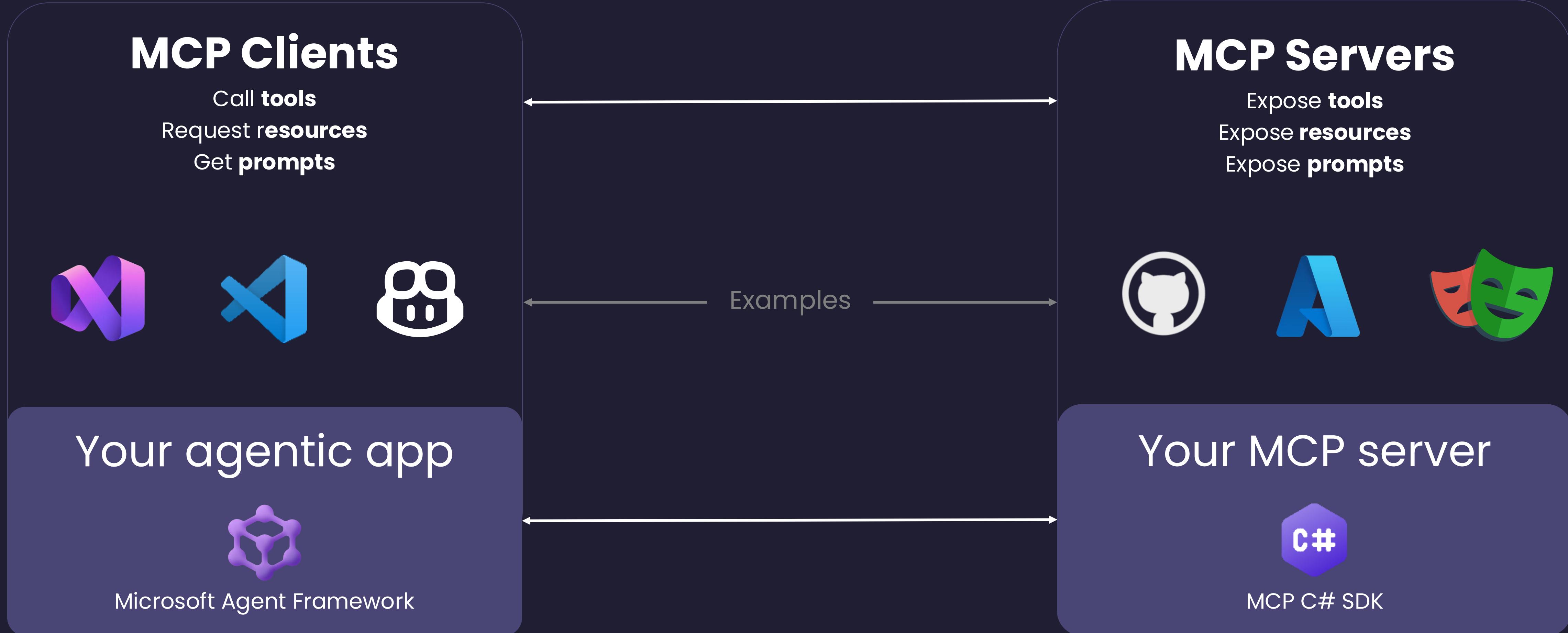
Interactive developer UI for agent development, testing, and debugging workflows

Built on open standards for interoperability and flexibility

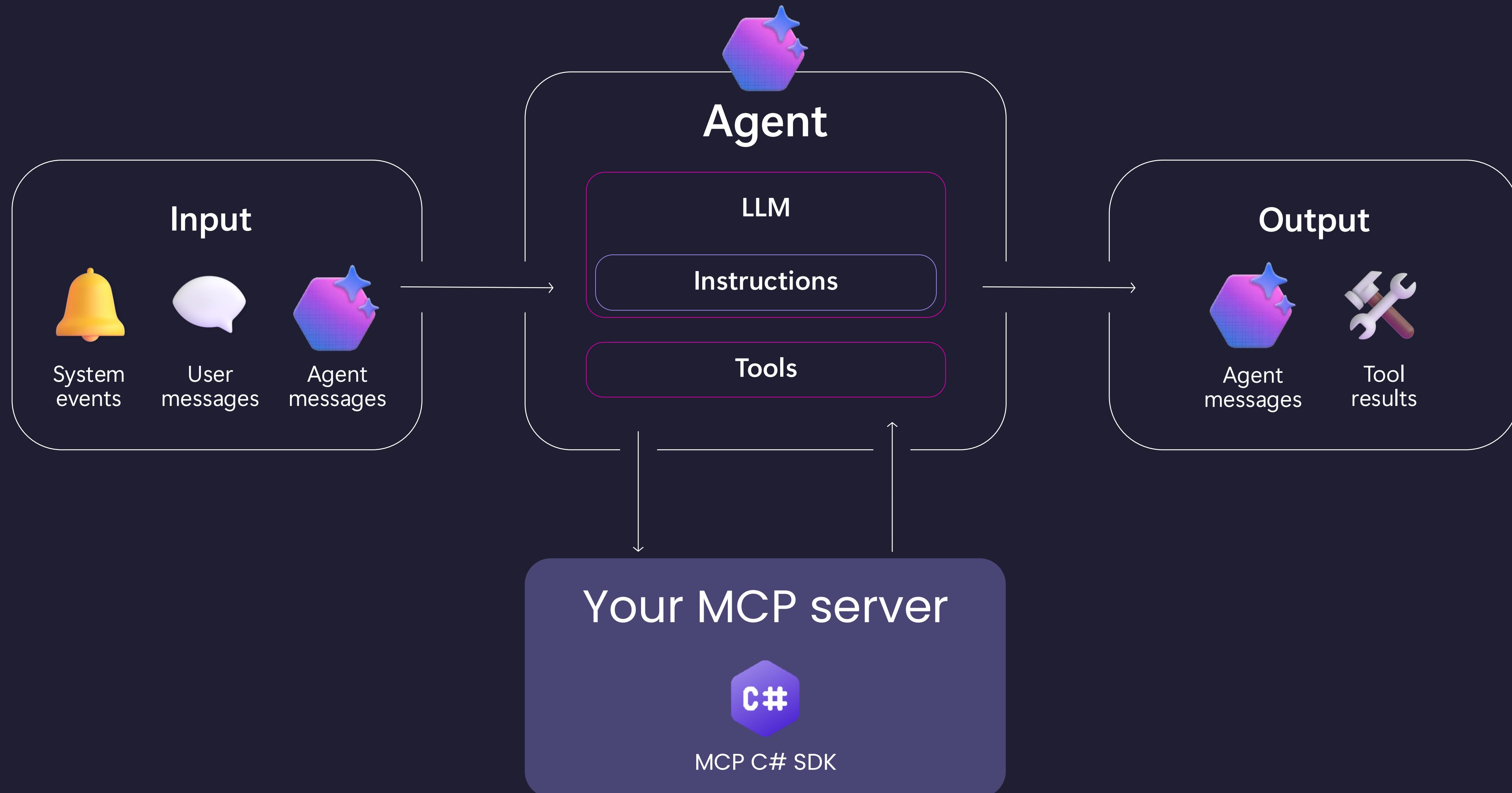
Community-driven, open-source and extensible by design



# Model Context Protocol (MCP)



# An agent enhanced by MCP



Public Preview

# MCP C# SDK

[aka.ms/mcp-cs-sdk](https://aka.ms/mcp-cs-sdk)

Full support for current MCP spec

Tools, resources, prompts

Elicitation, sampling

Stdio and HTTP transports

Widely used across Microsoft

More features accepted and coming soon



# Model Context Protocol

DEMO



# Intelligence with .NET 10



.NET Conf 2025

## Discover what's in store this week



### .NET

**Learn all about the new release and the best version of .NET yet, .NET 10!**

Learn what's new in ASP.NET Core, C# 14, Blazor, .NET MAUI, Windows Development and Aspire. Dive deep into performance improvements and learn how to build intelligent, agentic apps all with .NET.



### Code Party

Come join our Code Party later today to play games and **win awesome prizes!**



### Visual Studio

**Visual Studio 2026 is faster, smarter, and packed with AI-powered tools to boost your productivity.**

From Copilot-assisted debugging to intelligent test generation, see how you are getting supercharged workflows. Dive into real-world profiling, diagnostics, CI automation and more.



### Local Events

**Connect with your local community** at a .NET Conf event in your area.



### Azure

**Discover how Azure is revolutionizing cloud-native development with .NET.**

Explore the latest innovations in Azure services designed specifically for .NET developers. Learn how to build, deploy, scale intelligent, cloud-native applications that leverage the full power of Azure.



### Community Day

November 13 is our community day with speakers from around the world. Watch **over 40 jam-packed sessions from real-world experts** on a variety of .NET topics. From AI-enhanced developer tools and MCP server creation to Blazor migrations, MAUI tips & tricks, retro C# coding on a Commodore 64, plus a whole lot more.



### Student Zone

November 14 is the .NET Conf **Student Zone**, a beginner-friendly virtual event where experts teach you how to build amazing projects - all using C# and .NET! Join us to learn more about AI, web development, mobile development, and game development!

# Thank you

