Visual Studio

Visual Studio is an integrated development environment (IDE) that is made by Microsoft. Visual Studio is far more than an IDE, it is a complete development platform. It offers services for the first code written to the last build deployed. Visual Studio comes in three versions, catering to the development needs of developers in all size teams.

The versions are:

**Community**

The Community edition was announced on 12 November 2014. It offers 98% of the features of the professional version. It can be used by individual developers to create commercial applications. It can also be used by up to five developers if the company they work for has less than 250 employees and less that one million dollars in revenue. It can also be used for Open Source, Education and Demonstration by anyone. Community is a far cry from Express proceeded it as it was limited and only supported a small fraction of languages.

**Professional**

As of Visual Studio 2010, the Professional edition is the entry level commercial edition of Visual Studio. (Previously, a more feature restricted Standard edition was available.) It provides an IDE for all supported development languages. MSDN support is available as MSDN Essentials or the full MSDN library depending on licensing. It supports XML and XSLT editing, and can create deployment packages that only use ClickOnce and MSI. It includes tools like Server Explorer and integration with Microsoft SQL Server also. Windows Mobile development support was included in Visual Studio 2005 Standard, however, with Visual Studio 2008, it is only available in Professional and higher editions. Windows Phone 7 development support was added to all editions in Visual Studio 2010. Development for Windows Mobile is no longer supported in Visual Studio 2010; it is superseded by Windows Phone 7.

**Enterprise**

In addition to the features provided by the Professional edition, the Enterprise edition provides a new set of software development, database development, collaboration, metrics, architecture, testing and reporting tools.

**Redefined fundamentals**

A new setup experience means that you can install more quickly and install what you want when you need it. Whether you want to load large solutions and projects, or work on folders of code, or even a single file of code, Visual Studio starts faster. And, Visual Studio helps you stay focused on the big picture, especially for teams embracing DevOps.

**Performance and productivity**. We have focused on new and modern mobile, cloud, and desktop development capabilities. And, we've also improved the overall acquisition, performance, and general developer productivity experiences. Visual Studio starts faster, is more responsive, and uses less memory than before.

**Cloud app development with Azure**. A built-in suite of Azure tools enable you to easily create cloud-first apps powered by Microsoft Azure. Visual Studio makes it easy to configure, build, debug, package, and deploy apps and services on Azure.

**Windows app development**. Use the UWP templates in Visual Studio 2017 to create a single project for all Windows 10 devices – PC, tablet, phone, Xbox, HoloLens, Surface Hub, and more. Then, produce an app package and submit it to Microsoft Store from within Visual Studio to get your app out to customers.

**Mobile app development**. In Visual Studio 2017, you can innovate and get results fast with Xamarin, which unifies your multi-platform mobile requirements by using one core codebase and set of skills. Go mobile with your existing teams, technology investments, and C# code to deliver consumer-grade experiences ahead of schedule and under budget. Accelerate every step of the mobile lifecycle to deliver world-class consumer experiences or a portfolio of productivity apps to empower your workforce.

**Cross-platform development**. Seamlessly deliver software to any targeted platform. Extend DevOps processes to SQL Server through Redgate Data Tools and safely automate database deployments from Visual Studio. Or, use .NET Core to write apps and libraries that run unmodified across Windows, Linux, and macOS operating systems. (And **new in 15.3**: Get side-by-side support for .NET Core 2.0 SDKs.)

**Games development**. With Visual Studio Tools for Unity (VSTU), you can use Visual Studio to write game and editor scripts in C# and then use its powerful debugger to find and fix errors. The latest release of VSTU includes syntax coloring for Unity's ShaderLab shader language, better debugger visualizations, and improved code generation for the MonoBehavior wizard. VSTU also brings your Unity project files, console messages, and the ability to start your game into Visual Studio so you can spend less time switching to and from the Unity Editor while writing code.

**AI development**. With Visual Studio Tools for AI (**new in 15.5**), you can use the productivity features of Visual Studio to accelerate AI innovation. Build, test, and deploy Deep Learning / AI solutions that seamlessly integrate with Azure Machine Learning for robust experimentation capabilities, such as submitting data preparation and model training jobs transparently to different compute targets. And, Visual Studio Tools for AI provides support for custom metrics and run history tracking, which enable data science reproducibility and auditing.

Languages

Code in C#, Visual Basic, F#, C++, HTML, JavaScript, TypeScript, Python

Operating System

Windows

Linux

Mac OS

Workloads

Universal Windows Platform development

The Universal Windows Platform development workload in Visual Studio 2017 gives you all the tools you need to build, debug, and publish UWP applications. Build applications that target Windows Desktop, Windows Phone, Xbox, HoloLens, SurfaceHub, and even Windows 10 IoT! Building performant and beautiful Windows UI has never been easier with XAML UI Analysis and XAML Edit & Continue.

.NET desktop development

The .NET Desktop application development workload in Visual Studio 2017 is designed for building WPF, Windows Forms and console apps using .NET Framework. Shorter solution load time, improved IntelliSense, code navigation, and refactoring for C# and XAML save you time and effort on everyday tasks. With features like XAML Edit & Continue, and Run to Click debugging, you can build desktop apps with great UI and better performance.

Windows desktop development with C++

The Windows desktop development with C++ workload enables you to create, build, and debug native applications that run on versions ranging from Windows XP to the latest Windows 10 release. Utilize world-class debugging and profiling tools and tweak the performance of your Windows desktop apps.

Web development

The web development workload in Visual Studio 2017 is designed to maximize your productivity developing web applications using ASP.NET, and standards-based technologies like HTML, and JavaScript. Visual Studio 2017 also adds container development tools that enable you to package and deploy your web applications as software containers. Shorter solution load time, improved IntelliSense, code navigation, refactoring for C#, and browser link save you time and effort on everyday tasks building web applications.

Azure development

The Azure development workload in Visual Studio 2017 installs the latest Azure SDK for .NET and tools for Visual Studio. Once installed, you can view resources in Cloud Explorer, create resources using Azure Resource Manager tools, build applications for Azure Web and Cloud Services, and perform big data operations using Azure Datalake tools.

Office/Sharepoint development

The Office/SharePoint development workload provides all the tools you need to extend Office and SharePoint. Get started with various project templates for Office add-ins, VSTO add-ins, SharePoint add-ins, and SharePoint solutions. Easily build, debug, and publish your add-ins and solutions from Visual Studio.

Node.js development

The Node.js development workload transforms Visual Studio into a robust, hyper-focused Node.js IDE. With powerful IntelliSense, local and remote debugging, profiling, npm integration, an interactive window, test runners, and tight Azure integration, you have everything you need to build the largest Node.js apps.

Data storage and processing

The Data workload enables you to develop across a wide range of relational and big data assets. It provides you the tools to develop queries against databases, data warehouses and data lakes whether on-premises or in Azure. It provides support for SQL, U-SQL, and Hive.

Mobile development with .NET

Mobile development with .NET allows developers to build fully-native iOS, Android, and Universal Windows Platform apps using a shared C# codebase. With Xamarin technology, every C# developer is a mobile developer, and anything you can do in Objective-C, Swift or Java, you can do in C#.

Mobile development with JavaScript

Tools for Apache Cordova is the only toolset you need to build an app that deploys on iOS, Android and Windows using the skills of web development. Skip setup–get started building immediately with a hassle-free installation that stands up your build tools, testing environments and publishing pipeline.

Mobile development with C++

The mobile development with C+ workload allows you to create and build native C++ apps for Android and iOS. With this workload you can share common code in libraries that can be built for each platform. Code reuse can save both time and effort when creating apps for multiple platforms.

Game development with C++

The game development workload with C++ provides you the tools for making games that run on Windows, Xbox, and beyond. Use powerful game engines like Cocos and Unreal to create cutting-edge graphics. This workload includes the DirectX templates and debugging tools that will help you create great games.

Game development with Unity

The Unity engine integrates into one unparalleled platform to create 2D and 3D games and interactive content. Create once and publish to 21 platforms, including all mobile platforms, WebGL, Mac, PC and Linux desktop, web or consoles. Write code quickly and with precision using IntelliSense. Navigate through your scripts easily and use powerful refactoring capabilities.  
Identify issues quickly by debugging your Unity games in Visual Studio.

Linux development with C++

The Linux development with C++ workload enables you to author C++ code for Linux servers, desktops and devices. You can manage your connections to these machines from within VS. VS will automatically copy and remote build your sources and can launch your application with the debugger. Our project system supports targeting specific architectures, including ARM

Visual Studio extension development

Extend the Visual Studio environment with new features and languages. This workload adds the SDKs and tools you need to create new commands, code analyzers, tool windows and language services using C#, Visual Basic or C++. Then share your extension with the community, adding to the thousands of extensions on the Visual Studio Marketplace that enable new capabilities for Visual Studio.

Editions

Microsoft Visual Studio is available in the following editions

Visual Studio Team Services

Plan better, code together and ship faster.

Create the perfect dev environment for your team

Code in any IDE/language and build applications for any target platform. Integrate your favorite tools from the marketplace.

Stay connected from idea to release

Track and manage all your great ideas on kanban or scrum boards with agile tools. Collaborate as they turn into code with unlimited Git or TFVC repos. And delight your customers with every deployment using hosted builds and automated release pipelines.

Improve code quality and catch issues early

Get social with powerful code reviews. Test and build each commit before you merge your code. Raise the quality bar every time you ship with manual, unit, exploratory, performance and load testing.

Automate and simplify your Azure deployments

Use built-in tasks and templates to set up CI and CD to an Azure web app, VM, container, Xamarin Test Cloud, HockeyApp and more. Building apps for the cloud and mobile devices has never been easier.

Increase productivity with powerful features

Agile Tools

Track work and manage your backlog with Agile planning tools.

Git

Everything you love about git – plus free private repos, social code reviews, code search and more…

Continuous Integration

Simplify continuous integration for your apps for any platform or language.

Tools for Java teams

Eclipse, IntelliJ, Android Studio plugins and Maven, Ant, Gradle and Jenkins for your Java teams.

Package Management

Build, manage, secure and share your software components.

TFVC

A centralized version control system with free private repos.

Testing

Tools for manual, performance and automated testing.

Reporting

Insights that lead to action for fewer bottlenecks and increased productivity.

Wiki

Create rich documents to get your team on the same page.

Expand VSTS functionality with extensions

HockeyApp

Octopus Deploy Build and Release Tasks

Github Integration

Tower Git Client

Slack Integration

Trello

Deployment

<https://docs.microsoft.com/en-us/visualstudio/ide/whats-new-in-visual-studio>

<https://www.visualstudio.com/vs/visual-studio-workloads/>

<https://www.visualstudio.com/team-services/>