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Build Configurations Reference

Reference guide for solution and project build configurations.



PREREQUISITE TOPICS



In order to understand and use the content on this page, make sure you are familiar with the following topics:

- [Hardware and Software Specifications](#)



Google has informed developers of a vulnerability in versions (earlier than M102) of WebRTC. Impacts, workarounds, and updates can be found [here](#).

Choose your operating system

 Windows  macOS  Linux

Build Configuration Descriptions

Unreal Engine (UE) uses a custom building method via the **Unreal Build Tool (UBT)**. This tool processes the information necessary to build the engine's reflection system, integrating your

C++ code with Blueprints, replication, serialization, and garbage collection.

Every build configuration contains two keywords. The first keyword indicates the state of the engine and your game project. For instance, if you compile using a **Debug** configuration, the build process forgoes optimization making it easier to debug. To be clear, every configuration, even Shipping builds, produce symbols for debugging if built from Visual Studio or if **Project Settings > Project > Packaging > Project > Include Debug Files** is turned on in the Unreal Editor. This means that you can still debug Development and Shipping configurations, they just may not be as easy to debug as the Debug configuration. The second keyword indicates the target you are building for. For example, if you want to open a project in Unreal, you need to build with the **Editor** target keyword.

Build Configuration - State	Description
Debug	This configuration builds both engine and game code in debug configuration without optimizations. This makes things slower, but is easier to debug. If you compile your project using the Debug configuration and want to open the project with the Unreal Editor, you must use the <code>-debug</code> flag in order to see your code changes reflected in your project.
DebugGame	This configuration builds game code without optimizations. This configuration is ideal for debugging only game modules.
Development	This configuration enables all but the most time-consuming engine and game code optimizations, which makes it ideal for development and performance reasons. Unreal Editor uses the Development configuration by default. Compiling your project using the Development configuration enables you to see code changes made to your project reflected in the editor.
Shipping	This is the configuration for optimal performance and shipping your game. This configuration strips out console commands, stats, and profiling tools.
Test	This configuration is the Shipping configuration, but with some console commands, stats, and profiling tools enabled.

Build Configuration - Target	Description
Game	This configuration builds a stand-alone executable version of your project, but requires cooked content specific to the platform. Please refer to the Packaging Projects Reference page to learn more about cooked content.
Editor	To open a project in Unreal Editor and see all code changes reflected, the project must be built in an Editor configuration.
Client	If you are working on a multiplayer project using UE networking features, this target designates the specified project as being a Client in UE's client-server model for multiplayer games. If there is a <code><GAME_NAME>Client.Target.cs</code> file, the Client build configurations will be valid.
Server	If you are working on a multiplayer project using UE networking features, this target designates the specified project as being a Server in UE's client-server model for multiplayer games. If there is a <code><GAME_NAME>Server.Target.cs</code> file, the Server build configurations will be valid.

Build Configuration for UE Solution

When compiling a UE solution, you are compiling our engine's source code together with your project's source code. The following build configurations are available when building your project this way:

	Debug	DebugGame	Development	Shipping	Test
Game	✓	✓	✓	✓	✓
Editor	✓	✓	✓		
Client	✓	✓	✓	✓	✓

	Debug	DebugGame	Development	Shipping	Test
Server	✓	✓	✓	✓	✓

Build Configuration for UE Project

When compiling a UE project, you are only compiling your project's source code. The following build configurations are available when building your project this way:

	Debug	DebugGame	Development	Shipping	Test
Game		✓	✓	✓	
Editor		✓	✓		
Client					
Server					

	Debug	DebugGame	Development	Shipping	Test
Game		✓	✓	✓	
Editor		✓	✓		
Client					
Server					

We do not currently provide a binary installer of Unreal Engine for Linux.



Linux users should refer to the [Build Configuration for UE Solution](#) section.

Refer to our [Installing Unreal Engine](#) documentation to learn how to build Unreal Engine from source.