

Welcome to C# 7.2 and Span



Mads Torgersen

November 15th, 2017

C# 7.2 is the latest [point release](#) of C#, and adds a number of small but useful features.

All the features are described in wonderful detail in the docs. Start with the overview, [What's new in C# 7.2](#), which gives you an excellent introduction to the new set of capabilities. It is worth celebrating that a significant portion of the docs are community contributed, not least the material on the new [private protected access modifier](#).

The dominant theme of C# 7.2 centers on improving expressiveness around working with structs by reference. This is important in particular for high performance scenarios, where structs help avoid the garbage collection overhead of allocation, whereas struct references help avoid excessive copying.

The docs go into detail on this set of features in [Reference semantics with value types](#), and they are shown in my new “talking head” video on Channel 9, [New Features in C# 7.1 and C# 7.2](#).

Several of these features, while generally useful, were added to C# 7.2 specifically in support of the new `Span<T>` family of framework types. This library offers a unified (and allocation-free) representation of memory from a multitude of different sources, such as arrays, stack allocation and native code. With its slicing capabilities, it obviates the need for expensive copying and allocation in many scenarios, such as string manipulation, buffer management, etc, and provides a safe alternative to unsafe code. This is really a game changer, in my opinion. While you may start out using it mostly for performance-intensive scenarios, it is lightweight enough that I think many new idioms will evolve for using it in every day code.

Jared Parsons gives a great introduction in his Channel 9 video [C# 7.2: Understanding Span](#). In the December 15 issue of the [MSDN Magazine](#), Stephen Toub will go into even more detail on `Span` and how to use it.

C# 7.2 ships with the 15.5 release of Visual Studio 2017.

Enjoy C# 7.2 and Span, and happy hacking!

Mads Torgersen, Lead Designer of C#



Mads Torgersen C# Lead Designer, .NET Team

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