

Asynchronous Delegates

.NET Framework 1.1

[Other Versions](#)



- [.NET Framework \(current version\)](#)
- [Visual Studio 2010](#)
- [.NET Framework 4](#)
- [.NET Framework 3.5](#)
- [.NET Framework 3.0](#)
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Asynchronous delegates provide the ability to call a synchronous method in an asynchronous manner. When you call a delegate synchronously, the **Invoke** method calls the target method directly on the current thread. If the compiler supports asynchronous delegates, then it will generate the **Invoke** method and the **BeginInvoke** and **EndInvoke** methods. If the **BeginInvoke** method is called, the common language runtime will queue the request and return immediately to the caller. The target method will be called on a thread from the thread pool. The original thread, which submitted the request, is free to continue executing in parallel to the target method, which is running on a thread pool thread. If a callback has been specified on the **BeginInvoke**, it will be called when the target method returns. In the callback, the **EndInvoke** method is used to obtain the return value and the in/out parameters. If the callback was not specified on the **BeginInvoke**, then **EndInvoke** can be used on the original thread that submitted a request.

Note The Microsoft C# compiler currently supports an asynchronous delegate.

In This Section

[Using Delegates](#)

Describes how to implement asynchronous delegates programmatically.

[Compiler and Common Language Runtime Support](#)

Explains compiler support for the runtime, using **BeginInvoke** and **EndInvoke** with asynchronous method signatures.

[Compiler-Supplied Delegate BeginInvoke and EndInvoke Methods](#)

Discusses compiler-specific issues with **BeginInvoke** and **EndInvoke** methods.

[Asynchronous Delegates Programming Sample](#)

Demonstrates the use of asynchronous delegates in a simple sample, which factorizes some numbers.

Related Sections

[Asynchronous Programming](#)

Describes orientation for asynchronous programming with the .NET Framework.