

System.IAsyncResult Interface

```
[ILAsm]
.class interface public abstract IAsyncResult

[C#]
public interface IAsyncResult
```

Assembly Info:

- *Name:* mscorlib
- *Public Key:* [00 00 00 00 00 00 00 00 04 00 00 00 00 00 00 00]
- *Version:* 2.0.x.x
- *Attributes:*
 - CLSCompliantAttribute(true)

Summary

Supported by objects that represent the state of an asynchronous operation.

Library: BCL

Description

An object that supports the `System.IAsyncResult` interface stores state information for an asynchronous operation, and provides a synchronization object to allow threads to be signaled when the operation completes.

`System.IAsyncResult` objects are returned by methods that begin asynchronous operations, such as `System.IO.FileStream.BeginRead`, and are passed to methods used to complete asynchronous operations, such as `System.IO.FileStream.EndRead`. `System.IAsyncResult` objects are also passed to methods invoked by `System.AsyncCallback` delegates when an asynchronous operation completes.

IAsyncResult.AsyncState Property

```
[ILAsm]  
.property object AsyncState { public hidebysig virtual abstract  
specialname object get_AsyncState() }  
  
[C#]  
object AsyncState { get; }
```

Summary

Gets the user-provided state object supplied at the time the asynchronous operation was started.

Property Value

The supplied `System.Object`.

Behaviors

The object returned by this property is required to be the object specified as the last parameter to methods that begin asynchronous operations, such as `System.IO.FileStream.BeginRead`.

This property is read-only.

How and When to Override

Implement this property to allow the caller of an asynchronous operation to obtain an application-defined object specified at the start of the operation.

Usage

The object returned by this property can be used to pass state information for the asynchronous operation to a `System.AsyncCallback` delegate.

1 IAsyncResult.AsyncWaitHandle Property

```
2 [ILAsm]  
3 .property class System.Threading.WaitHandle AsyncWaitHandle { public  
4 hidebysig virtual abstract specialname class System.Threading.WaitHandle  
5 get_AsyncWaitHandle() }  
  
6 [C#]  
7 WaitHandle AsyncWaitHandle { get; }
```

8 Summary

9 Gets a System.Threading.WaitHandle that can be used to block a thread until an
10 asynchronous operation completes.

11 Property Value

13 A System.Threading.WaitHandle that is signaled when an asynchronous operation
14 completes.

15 Behaviors

16 The object returned by System.IAsyncResult.AsyncWaitHandle can be allocated in
17 advance or on demand. However, once allocated it is required to be kept alive until the
18 user calls a method that ends the asynchronous operation, such as
19 System.IO.FileStream.EndRead. Only after the operation completes or is canceled, can
20 the object be disposed of.

21
22 [Note: WaitHandle supplies methods that support waiting for synchronization objects to
23 become signaled, such as System.Threading.WaitHandle.WaitOne.]
24
25
26

27 This property is read-only.

28 Usage

29 Clients that wait for the operation to complete (as opposed to polling), use this property
30 to obtain a synchronization object to wait on.

1 IAsyncResult.CompletedSynchronously

2 Property

```
3 [ILAsm]  
4 .property bool CompletedSynchronously { public hidebysig virtual abstract  
5 specialname bool get_CompletedSynchronously() }  
  
6 [C#]  
7 bool CompletedSynchronously { get; }
```

8 Summary

9 Gets a `System.Boolean` value that specifies whether the asynchronous operation
10 completed synchronously.

11 Property Value

13 `true` if the operation synchronously; otherwise `false`.

14 Behaviors

15 As described above.

16
17 [Note: Most implementations of the `System.IAsyncResult` interface will not use this
18 property, and should return `false`.]
19
20
21

22 This property is read-only.

23 Usage

24 Use this property to determine if the asynchronous operation completed synchronously.
25 For example, this property can return `true` for an asynchronous IO operation if the IO
26 request was small.

IAsyncResult.IsCompleted Property

```
[ILAsm]  
.property bool IsCompleted { public hidebysig virtual abstract specialname  
bool get_IsCompleted() }  
  
[C#]  
bool IsCompleted { get; }
```

Summary

Gets a `System.Boolean` value that specifies whether an asynchronous operation has completed.

Property Value

true if the operation has completed; otherwise false.

Behaviors

As described above.

This property is read-only.

Usage

Clients that poll for operation status (as opposed to waiting on a synchronization object) use this property to determine the status of the operation.