System.Runtime.InteropServices.MarshalAsAttribute Class

```
[ILAsm]
.class public sealed MarshalAsAttribute extends System.Attribute


[C#]
public sealed class MarshalAsAttribute: Attribute
```

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)

Type Attributes:

- AttributeUsageAttribute(AttributeTargets.Field | AttributeTargets.Parameter | AttributeTargets.ReturnValue, AllowMultiple=false, Inherited=false)

Summary

Specifies how data is to be marshaled between managed and unmanaged code.

Inherits From: System.Attribute

Library: RuntimeInfrastructure

Thread Safety: All public static members of this type are safe for multithreaded operations. No instance members are guaranteed to be thread safe.

Description

This attribute can be applied to parameters, fields, or return values.

Each data type has a default marshaling behavior that is used if this attribute is not present. This attribute is only required when a type can be marshaled as more than one possible types. [*Note:* The System.Runtime.InteropServices.UnmanagedType enumeration specifies possible data types.]

Compilers are required to not preserve this type in metadata as a custom attribute. Instead, compilers are required to emit it directly in the file format, as described in Partition II of the CLI Specification. Metadata consumers, such as the Reflection API, are

1 required to retrieve this data from the file format and return it as if it were a custom
2 attribute.

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MarshalAsAttribute(System.Runtime.InteropS ervices.UnmanagedType) Constructor

```
[ILAsm]
public rtspecialname specialname instance void .ctor(valuetype
System.Runtime.InteropServices.UnmanagedType unmanagedType)


[C#]
public MarshalAsAttribute(UnmanagedType unmanagedType)
```

Summary

Constructs and initializes a new instance of the
System.Runtime.InteropServices.MarshalAsAttribute class with the specified
System.Runtime.InteropServices.UnmanagedType value.

Parameters

Parameter	Description
unmanagedType	A System.Runtime.InteropServices.UnmanagedType value indicating how the data is to be marshaled.

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1 # MarshalAsAttribute(System.Int16)
2 # Constructor

3 ```
[ILAsm]
4 public rtspecialname specialname instance void .ctor(int16 unmanagedType)

5 [C#]
6 public MarshalAsAttribute(short unmanagedType)
```

7 ## Summary

8 Constructs and initializes a new instance of the
9 `System.Runtime.InteropServices.MarshalAsAttribute` class with the specified value.

10 ## Parameters

| Parameter | Description |
|---|---|
| *unmanagedType* | A `System.Int16` containing a `System.Runtime.InteropServices.UnmanagedType` value indicating how the data is to be marshaled. |

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# MarshalAsAttribute.ArraySubType Field

```
[ILAsm]
.field public valuetype System.Runtime.InteropServices.UnmanagedType
ArraySubType


[C#]
public UnmanagedType ArraySubType
```

Summary

A `System.Runtime.InteropServices.UnmanagedType` enumeration value that specifies the type of elements in an array.

MarshalAsAttribute.MarshalCookie Field

```
[ILAsm]
.field public string MarshalCookie

[C#]
public string MarshalCookie
```

Summary

A `System.String` that is used with
`System.Runtime.InteropServices.UnmanagedType.CustomMarshaler` to hold a cookie
that is passed to the custom marshaler. The value of the cookie is defined by the custom
marshaler implementation.

Description

This field is used only with
`System.Runtime.InteropServices.UnmanagedType.CustomMarshaler` and is optional.

MarshalAsAttribute.MarshalType Field

```
[ILAsm]
.field public string MarshalType

[C#]
public string MarshalType
```

Summary

A `System.String` that identifies the `System.Type` of a custom marshaler.

Description

This field is used only with
`System.Runtime.InteropServices.UnmanagedType.CustomMarshaler` and is required.

A custom marshaler is a type that is capable of marshaling calls from a specific managed type to a specific unmanaged type and vice versa.

MarshalAsAttribute.MarshalTypeRef Field

```
[ILAsm]
.field public class System.Type MarshalTypeRef

[C#]
public Type MarshalTypeRef
```

Summary

Specifies the managed `System.Type` of the argument being marshaled.

Description

This field is used only with
`System.Runtime.InteropServices.UnmanagedType.CustomMarshaler` and is required.

MarshalAsAttribute.SizeConst Field

```
[ILAsm]
.field public int32 SizeConst


[C#]
public int SizeConst
```

Summary

A `System.Int32` that specifies the size, in bytes, of the constant size array being marshaled.

Description

This field is used only with the
`System.Runtime.InteropServices.UnmanagedType.ByValArray` or
`System.Runtime.InteropServices.UnmanagedType.LPArray` enumeration value. When using either of these unmanaged types, either this field or
`System.Runtime.InteropServices.MarshalAsAttribute.SizeParamIndex` is required.

MarshalAsAttribute.SizeParamIndex Field

```
[ILAsm]
.field public int16 SizeParamIndex


[C#]
public short SizeParamIndex
```

Summary

A `System.Int16` that identifies the position (starting with zero) of the method argument that identifies the size of the array being marshaled.

Description

This field is used only with the
`System.Runtime.InteropServices.UnmanagedType.ByValArray` or
`System.Runtime.InteropServices.UnmanagedType.LPArray` enumeration value. When using either of these unmanaged types, either this field or
`System.Runtime.InteropServices.MarshalAsAttribute.SizeConst` is required.

MarshalAsAttribute.Value Property

```
[ILAsm]
.property valuetype System.Runtime.InteropServices.UnmanagedType Value {
public hidebysig specialname instance valuetype
System.Runtime.InteropServices.UnmanagedType get_Value() }


[C#]
public UnmanagedType Value { get; }
```

Summary

Gets the `System.Runtime.InteropServices.UnmanagedType` value the data is to be marshaled as.

Property Value

The `System.Runtime.InteropServices.UnmanagedType` value indicating how the data is to be marshaled.

Description

This property is read-only.