System.Runtime.InteropServices.Marshal AsAttribute 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:* 1.0.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

1   the file format, as described in Partition II of the CLI Specification.
2   Metadata consumers, such as the Reflection API, are required to
3   retrieve this data from the file format and return it as if it were a
4   custom attribute.

5

MarshalAsAttribute(System.Runtime.Inter opServices.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.

MarshalAsAttribute(System.Int16) Constructor

```
[ILASM]
public rtspecialname specialname instance void .ctor(int16
unmanagedType)

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

Summary

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

Parameters

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

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.CustomMars
haler 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.CustomMars
haler 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.