System.Runtime.InteropServices.DllImpor tAttribute Class

```
[ILASM]
.class public sealed DllImportAttribute extends
System.Attribute


[C#]
public sealed class DllImportAttribute: 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.Method, AllowMultiple=false, Inherited=false)

Summary

Indicates that the target method of this attribute is an export from an unmanaged shared library.

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 provides the information needed to call a method exported from an unmanaged shared library. This attribute provides the name of the shared library file, the name of the method within that library, the calling convention, and character set of the unmanaged function.

[*Note:* A shared library refers to Dynamically Linked Libraries on Windows systems, and Shared Libraries on Unix systems.]

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

Example

The following example demonstrates the use of the
System.Runtime.InteropServices.DllImportAttribute.

[*Note:* The non-standard **GetLocalTime** API used in this example
indicates the current local system time.]

```
[C#]

using System;
using System.Runtime.InteropServices;

[ StructLayout(LayoutKind.Sequential)]
public class SystemTime {
 public ushort year;
 public ushort month;
 public ushort dayOfWeek;
 public ushort day;
 public ushort hour;
 public ushort minute;
 public ushort second;
 public ushort milliseconds;
}

public class LibWrap {
 [ DllImportAttribute("Kernel32", CharSet=CharSet.Auto,
CallingConvention=CallingConvention.StdCall,
EntryPoint="GetLocalTime")]
 public static extern void GetLocalTime(SystemTime st);
}

public class DllImportAttributeTest {
 public static void Main() {

 SystemTime st = new SystemTime();

 LibWrap.GetLocalTime(st);
 Console.Write("The Date and Time is: ");
 Console.Write("{0:00}/{1:00}/{2} at ", st.month, st.day,
st.year);
 Console.WriteLine("{0:00}:{1:00}:{2:00}", st.hour,
st.minute, st.second);
 }
}
```

1 When run at the given time on the given date, the output produced
2 was
3
4 The Date and Time is: 05/16/2001 at 11:39:17
5

6

DllImportAttribute(System.String) Constructor

```
[ILASM]
public rtspecialname specialname instance void .ctor(string
dllName)

[C#]
public DllImportAttribute(string dllName)
```

Summary

Constructs and initializes a new instance of the
System.Runtime.InteropServices.DllImportAttribute class.

Parameters

Parameter	Description
dllName	A **System.String** that specifies the name of the shared library containing the unmanaged method to import.

Description

If the shared library specified in *dllName* is not found, an error occurs
at runtime.

DllImportAttribute.CallingConvention Field

```
[ILASM]
.field public valuetype
System.Runtime.InteropServices.CallingConvention
CallingConvention

[C#]
public CallingConvention CallingConvention
```

Summary

A **System.Runtime.InteropServices.CallingConvention** value that specifies the calling convention used when passing arguments to the unmanaged implementation of a method in a shared library.

Description

The default **System.Runtime.InteropServices.CallingConvention** value is **System.Runtime.InteropServices.CallingConvention.StdCall**.

DllImportAttribute.CharSet Field

```
[ILASM]
.field public valuetype
System.Runtime.InteropServices.CharSet CharSet

[C#]
public CharSet CharSet
```

Summary

A **System.Runtime.InteropServices.CharSet** value that controls function name modification and indicates how the **System.String** arguments to the method will be marshaled.

Description

This field is set to one of the **System.Runtime.InteropServices.CharSet** values to indicate the required modifications to the name of the imported function and to the **System.String** arguments of the function. The default value for **System.Runtime.InteropServices.DllImportAttribute.CharSet** is **System.Runtime.InteropServices.CharSet.Ansi**.

If **System.Runtime.InteropServices.DllImportAttribute.CharSet** is set to **System.Runtime.InteropServices.CharSet.Unicode**, all string arguments are converted to Unicode characters before being passed to the unmanaged implementation. If the field is set to **System.Runtime.InteropServices.CharSet.Ansi** the string characters are converted to ANSI characters. If **System.Runtime.InteropServices.DllImportAttribute.CharSet** is set to **System.Runtime.InteropServices.CharSet.Auto**, the **System.String** and function name conversion is platform dependent.

The **System.Runtime.InteropServices.DllImportAttribute.CharSet** field might also be used to determine which version of a function is imported from the specified shared library by modifying the provided name of the function. The name modification is platform specific, and includes additional characters to indicate the character set.

The default value of this field is **System.Runtime.InteropServices.CharSet.Ansi**.

DllImportAttribute.EntryPoint Field

```
[ILASM]
.field public string EntryPoint


[C#]
public string EntryPoint
```

Summary

A **System.String** that specifies the name of the shared library entry point.

DllImportAttribute.ExactSpelling Field

```
[ILASM]
.field public bool ExactSpelling


[C#]
public bool ExactSpelling
```

Summary

A **System.Boolean** value indicating whether the name of the entry point in the unmanaged library is modified to correspond to the **System.Runtime.InteropServices.CharSet** value specified in the **System.Runtime.InteropServices.DllImportAttribute.CharSet** field.

DllImportAttribute.Value Property

```
[ILASM]
.property string Value { public hidebysig specialname
instance string get_Value() }

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

Summary

Gets the name of the shared library file with the entry point.

Property Value

A **System.String** containing the name of the shared library file from which a function implementation is imported.

Description

This property is read-only.