

System.Runtime.InteropServices.FieldOffsetAttribute Class

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

[C#]
public sealed class FieldOffsetAttribute: 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, AllowMultiple=false, Inherited=false)

Summary

Indicates the physical position of a field within the unmanaged representation of a class or structure.

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

The target objects for this attribute are non-static fields of classes and structures qualified with the `System.Runtime.InteropServices.StructLayoutAttribute` set to `System.Runtime.InteropServices.LayoutKind.Explicit`. All non-static fields within an object with an explicit layout are required to have this attribute. No static or constant fields within an object with explicit layout are allowed to have this attribute.

The physical layout of the data members of a class or structure is automatically arranged in managed memory. When a managed object is passed as an argument to unmanaged code, the system creates its unmanaged representation.

`System.Runtime.InteropServices.StructLayoutAttribute` provides explicit control over this unmanaged representation.

`System.Runtime.InteropServices.FieldOffsetAttribute` indicates the offset of a target data member within the unmanaged representation of a class or structure.

1
2 If `System.Runtime.InteropServices.FieldOffsetAttribute` instances on target fields
3 of an exported object are set to overlap each other, one field is overwritten by another
4 field. For example, if an integer field has the
5 `System.Runtime.InteropServices.FieldOffsetAttribute` set to 4, and another
6 integer field has the `System.Runtime.InteropServices.FieldOffsetAttribute` set to
7 6, the last two bytes of the unmanaged representation of the first integer overlap the
8 first two bytes of the second integer. In such a situation writing to one of the fields
9 might corrupt the data in the other.

10
11 [*Note:* See the `System.Runtime.InteropServices.StructLayoutAttribute` class
12 overview for an example that uses
13 `System.Runtime.InteropServices.FieldOffsetAttribute`.]
14
15

16
17 Compilers are required to not preserve this type in metadata as a custom attribute.
18 Instead, compilers are required to emit it directly in the file format, as described in
19 Partition II of the CLI Specification. Metadata consumers, such as the Reflection API, are
20 required to retrieve this data from the file format and return it as if it were a custom
21 attribute.

22

1 FieldOffsetAttribute(System.Int32)

2 Constructor

```
3 [ILAsm]  
4 public rtspecialname specialname instance void .ctor(int32 offset)  
  
5 [C#]  
6 public FieldOffsetAttribute(int offset)
```

7 Summary

8 Constructs and initializes a new instance of the
9 System.Runtime.InteropServices.FieldOffsetAttribute class with the specified
10 field offset in the class or structure.

11 Parameters

Parameter	Description
<i>offset</i>	A System.Int32 that specifies the offset in bytes from the beginning of the structure to the beginning of the field.

12 13 Description

14 If *offset* is negative, its value is interpreted as an unsigned System.Int64 value, and the
15 system behavior is implementation-defined.

16
17 The System.Runtime.InteropServices.FieldOffsetAttribute.Value property of the
18 new instance is initialized to *offset*.

19

1 FieldOffsetAttribute.Value Property

```
2 [ILAsm]  
3 .property int32 Value { public hidebysig specialname instance int32  
4 get_Value() }  
  
5 [C#]  
6 public int Value { get; }
```

7 Summary

8 Gets the offset from the beginning of the exported data object to the beginning of the
9 target field.

10 Property Value

11 A `System.Int32` containing the offset from the beginning of the exported data object to
12 the beginning of the target field.

13 Description

14 This property is read-only.

15