System.Text.Encoder Class

```
[ILAsm]
.class public abstract serializable Encoder extends System.Object

[C#]
public abstract class Encoder
```

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

Converts blocks of characters into blocks of bytes.

Inherits From: System.Object

Library: BCL

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

Description

[*Note:* Following instantiation of a `System.Text.Encoder`, sequential blocks of characters are converted into blocks of bytes through calls to the `System.Text.Encoder.GetBytes` method. The encoder maintains state between the conversions, allowing it to correctly encode character sequences that span adjacent blocks. An instance of a specific implementation of the `System.Text.Encoder` class is typically obtained through a call to the `System.Text.Encoding.GetEncoder`.]

Example

The following example demonstrates using the `System.Text.UTF8Encoding` class to convert one character array to two byte arrays.

[C#]

```
using System;
using System.Text;
```

```
public class EncoderExample
{

   public static void Main()
   {

      string str = "Encoder";
      char[] cAry = str.ToCharArray();
      UTF8Encoding utf = new UTF8Encoding();

      Encoder e = utf.GetEncoder();
      int count1 =
         e.GetByteCount(cAry,0,cAry.Length-4,false);
      int count2 =
         e.GetByteCount(cAry,cAry.Length-4,4,true);
      byte[] bytes1 = new byte[count1];
      byte[] bytes2 = new byte[count2];

      e.GetBytes(cAry,0,cAry.Length-4,bytes1,0,false);
      e.GetBytes(cAry,cAry.Length-4,4,bytes2,0,true);

      Console.Write("Bytes1: ");
      foreach (byte b in bytes1)
         Console.Write(" '{0}' ", b);
      Console.WriteLine();

      Console.Write("Bytes2: ");
      foreach (byte b in bytes2)
         Console.Write(" '{0}' ", b);
      Console.WriteLine();

   }

}
```

The output is

```
Bytes1: '69' '110' '99'


Bytes2: '111' '100' '101' '114'
```

Encoder() Constructor

```
[ILAsm]
family rtspecialname specialname instance void .ctor()

[C#]
protected Encoder()
```

Summary

Constructs a new instance of the `System.Text.Encoder` class.

Description

This constructor is called only by classes that inherit from the `System.Text.Encoder` class.

Encoder.GetByteCount(System.Char[], System.Int32, System.Int32, System.Boolean) Method

```
[ILAsm]
.method public hidebysig virtual abstract int32 GetByteCount(char[]
chars, int32 index, int32 count, bool flush)

[C#]
public abstract int GetByteCount(char[] chars, int index, int count,
bool flush)
```

Summary

Determines the exact number of bytes required to encode the specified range in the specified array of characters.

Parameters

Parameter	Description
chars	A `System.Char` array of characters to encode.
index	A `System.Int32` that specifies the first index of *chars* to encode.
count	A `System.Int32` that specifies the number of elements in *chars* to encode.
flush	A `System.Boolean` value that determines whether the current instance flushes its internal state following a conversion. Specify `true` to flush the internal state of the current instance following a conversion; otherwise, specify `false`.

Return Value

A `System.Int32` containing the number of bytes required to encode the range in *chars* from *index* to *index* + *count* -1 for a particular encoding.

[*Note:* This value takes into account the state in which the current instance was left following the last call to `System.Text.Encoder.GetBytes`.]

Description

The state of the current instance is not affected by a call to this method.

Behaviors

As described above.

How and When to Override

Override this method to retrieve the exact number of bytes required to encode a specified range of an array of `System.Char` objects for a particular encoding.

Usage

Use this method to determine the exact number of bytes required to encode the specified range of an array of `System.Char` objects for a particular encoding.

Exceptions

Exception	Condition
System.ArgumentNullException	*chars* is `null`.
System.ArgumentOutOfRangeException	Return value is greater than `System.Int32.MaxValue`. -or- *index* < 0. -or- *count* < 0. -or- *index* and *count* do not specify a valid range in *chars* (i.e. (*index* + *count*) > *chars*.Length).

Encoder.GetBytes(System.Char[], System.Int32, System.Int32, System.Byte[], System.Int32, System.Boolean) Method

```
[ILAsm]
.method public hidebysig virtual abstract int32 GetBytes(char[]
chars, int32 charIndex, int32 charCount, class System.Byte[] bytes,
int32 byteIndex, bool flush)

[C#]
public abstract int GetBytes(char[] chars, int charIndex, int
charCount, byte[] bytes, int byteIndex, bool flush)
```

Summary

Encodes the specified range of the specified array of characters into the specified range of the specified array of bytes.

Parameters

Parameter	Description
chars	A `System.Char` array of characters to encode.
charIndex	A `System.Int32` that specifies the first index of *chars* to encode.
charCount	A `System.Int32` that specifies the number of elements in *chars* to encode.
bytes	A `System.Byte` array to encode into.
byteIndex	A `System.Int32` that specifies the first index of *bytes* to encode into.
flush	A `System.Boolean` value. Specify `true` to flush the internal state of the current instance following a conversion; otherwise, specify `false`. [*Note:* To ensure correct termination of a sequence of blocks of encoded bytes, it is recommended that the last call to `System.Text.Encoder.GetBytes` specify `true`.]

Return Value

A `System.Int32` containing the number of bytes encoded into *bytes* for a particular encoding.

Description

The encoding takes into account the state in which the current instance was left following the last call to this method if *flush* was specified as `true` for that call.

Behaviors

As described above.

How and When to Override

Override this method to encode the values of an array of `System.Char` objects as an array of `System.Byte` objects for a particular encoding.

Usage

Use this method to encode the values of an array of `System.Char` objects as an array of `System.Byte` objects for a particular encoding.

Exceptions

Exception	Condition
System.ArgumentException	*bytes* does not contain sufficient space to store the encoded characters.
System.ArgumentNullException	*chars* is `null`. -or- *bytes* is `null`.
System.ArgumentOutOfRangeException	*charIndex* < 0. -or- *charCount* < 0. -or- *byteIndex* < 0. -or- (*chars*.Length - *charIndex*) <

	charCount. -or- *byteIndex* > *bytes*.Length.