

System.Net.WebClient Class

```
[ILAsm]
.class public sealed WebClient extends System.MarshalByRefObject

[C#]
public sealed class WebClient: MarshalByRefObject
```

Assembly Info:

- Name: System
- 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)

Implements:

- System.IDisposable

Summary

Provides common methods for sending data to and receiving data from a resource identified by a URI.

Inherits From: System.MarshalByRefObject

Library: Networking

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: The System.Net.WebClient class provides common methods for sending data to or receiving data from any local, Intranet, or Internet resource identified by a URI.

The System.Net.WebClient class uses the System.Net.WebRequest class to provide access to Internet resources. System.Net.WebClient instances can access data with any class derived from System.Net.WebRequest that is registered with the System.Net.WebRequest.RegisterPrefix method.

By default, the CLI supports URIs with the "http:", "https:", and "file:" schemes.

The System.Net.WebClient class provides the following methods for uploading data to a resource.

1 · System.Net.WebClient.OpenWrite sends a System.IO.Stream to the server hosting
2 a resource.

3 · System.Net.WebClient.UploadData sends a byte array to the server hosting a
4 resource and returns a byte array containing the response from the server, if any.

5 · System.Net.WebClient.UploadFile sends a local file to the server hosting a
6 resource and returns a byte array containing the response from the server, if any.

7 · System.Net.WebClient.UploadValues sends a
8 System.Collections.Specialized.NameValueCollection collection to the server
9 hosting a resource and returns a byte array containing the response from the server,
10 if any.

11 The System.Net.WebClient class also provides the following methods for downloading data
12 from a resource.

13 · System.Net.WebClient.DownloadData downloads data from a resource and returns
14 a byte array.

15 · System.Net.WebClient.DownloadFile downloads data from a resource to a local
16 file.

17 · System.Net.WebClient.OpenRead returns the data from the resource as a
18 System.IO.Stream.

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WebClient() Constructor

```
[ILAsm]  
public rtspecialname specialname instance void .ctor()  
  
[C#]  
public WebClient()
```

Summary

Constructs a new instance of the `System.Net.WebClient` class.

Description

This constructor creates a new instance of the `System.Net.WebClient` class with properties set to `null`.

WebClient.DownloadData(System.String)

Method

```
[ILAsm]  
.method public hidebysig instance class System.Byte[] DownloadData(string  
address)  
  
[C#]  
public byte[] DownloadData(string address)
```

Summary

Downloads data from the resource identified by the specified URI.

Parameters

Parameter	Description
<i>address</i>	A System.String that specifies the URI from which data will be downloaded.

Return Value

A System.Byte array containing the data downloaded from the resource specified by *address*.

Description

If the System.Net.WebClient.BaseAddress property of the current instance is not System.String.Empty, *address* is combined with System.Net.WebClient.BaseAddress to form the absolute URI of the requested data. If the System.Net.WebClient.BaseAddress property of the current instance is System.String.Empty, *address* is required to be the absolute URI of the requested data. If the System.Net.WebClient.QueryString property of the current instance is not System.String.Empty, it is appended to *address*.

Exceptions

Exception	Condition
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System.Net.WebException

The absolute URI is not valid.

-or-

An error occurred while downloading data.

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WebClient.DownloadFile(System.String, System.String) Method

```
[ILAsm]  
.method public hidebysig instance void DownloadFile(string address, string  
fileName)  
  
[C#]  
public void DownloadFile(string address, string fileName)
```

Summary

Downloads data from the resource identified by the specified URI, and writes the data to the specified file.

Parameters

Parameter	Description
<i>address</i>	A System.String that specifies the URI from which data will be downloaded.
<i>fileName</i>	A System.String that specifies the name of the local file to which data will be written.

Description

If the System.Net.WebClient.BaseAddress property of the current instance is not System.String.Empty, *address* is combined with System.Net.WebClient.BaseAddress to form the absolute URI of the requested data. If the System.Net.WebClient.BaseAddress property of the current instance is System.String.Empty, *address* is required to be the absolute URI of the requested data. If the System.Net.WebClient.QueryString property of the current instance is not System.String.Empty, it is appended to *address*.

This method downloads data from the absolute URI to local file, *fileName*. If *fileName* already exists, the existing file is overwritten.

Exceptions

Exception	Condition
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System.Net.WebException	<p>The absolute URI is not valid.</p> <p>-or-</p> <p><i>filename</i> is null or <code>System.String.Empty</code> or contains invalid characters, or the specified path to the file does not exist.</p> <p>-or-</p> <p>An error occurred while downloading data.</p>
System.Security.SecurityException	The caller does not have permission to write to local files.

Permissions

Permission	Description
System.Security.Permissions.FileIOPermission	Requires permission to write to files. See <code>System.Security.Permissions.FileIOPermissionAccess.Write</code> .

WebClient.OpenRead(System.String) Method

```
[ILAsm]  
.method public hidebysig instance class System.IO.Stream OpenRead(string  
address)  
  
[C#]  
public Stream OpenRead(string address)
```

Summary

Opens a readable `System.IO.Stream` containing the data downloaded from the resource identified by the specified URI.

Parameters

Parameter	Description
<i>address</i>	A <code>System.String</code> that specifies the URI from which data will be downloaded.

Return Value

A `System.IO.Stream` used to read data from a resource.

Description

If the `System.Net.WebClient.BaseAddress` property of the current instance is not `System.String.Empty`, *address* is combined with `System.Net.WebClient.BaseAddress` to form the absolute URI of the requested data. If the `System.Net.WebClient.BaseAddress` property of the current instance is `System.String.Empty`, *address* is required to be the absolute URI of the requested data. If the `System.Net.WebClient.QueryString` property of the current instance is not `System.String.Empty`, it is appended to *address*.

[*Note:* This method creates a `System.IO.Stream` instance used to access the data specified by the absolute URI. The caller of this method is responsible for calling `System.IO.Stream.Close` to release the resources allocated for the stream.]

Exceptions

Exception	Condition
System.Net.WebException	<p>The absolute URI is not valid.</p> <p>-or-</p> <p>An error occurred while downloading data.</p>

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WebClient.OpenWrite(System.String) Method

```
[ILAsm]  
.method public hidebysig instance class System.IO.Stream OpenWrite(string  
address)  
  
[C#]  
public Stream OpenWrite(string address)
```

Summary

Opens a `System.IO.Stream` for writing data to the resource identified by the specified URI.

Parameters

Parameter	Description
<i>address</i>	A <code>System.String</code> that specifies the URI to receive the data.

Return Value

A `System.IO.Stream` used to write data to the resource.

Description

This method is equivalent to `System.Net.WebClient.OpenWrite(address, "POST")`.

If the `System.Net.WebClient.BaseAddress` property of the current instance is not `System.String.Empty`, *address* is combined with `System.Net.WebClient.BaseAddress` to form the absolute URI of the requested data. If the `System.Net.WebClient.BaseAddress` property of the current instance is `System.String.Empty`, *address* is required to be the absolute URI of the requested data. If the `System.Net.WebClient.QueryString` property of the current instance is not `System.String.Empty`, it is appended to *address*.

[*Note:* The underlying request is made with the POST method.]

Exceptions

Exception	Condition
System.Net.WebException	<p>The absolute URI is not valid.</p> <p>-or-</p> <p>An error occurred while opening the stream.</p>

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WebClient.OpenWrite(System.String, System.String) Method

```
[ILAsm]  
.method public hidebysig instance class System.IO.Stream OpenWrite(string  
address, string method)  
  
[C#]  
public Stream OpenWrite(string address, string method)
```

Summary

Opens a `System.IO.Stream` for writing data to the resource identified by the specified URI using the specified protocol method.

Parameters

Parameter	Description
<i>address</i>	A <code>System.String</code> that specifies the URI of the resource to receive the data.
<i>method</i>	A <code>System.String</code> that specifies the protocol method used to send the data to the resource identified by <i>address</i> .

Return Value

A `System.IO.Stream` used to write data to the resource.

Description

If the `System.Net.WebClient.BaseAddress` property of the current instance is not `System.String.Empty`, *address* is combined with `System.Net.WebClient.BaseAddress` to form the absolute URI of the requested data. If the `System.Net.WebClient.BaseAddress` property of the current instance is `System.String.Empty`, *address* is required to be the absolute URI of the requested data. If the `System.Net.WebClient.QueryString` property of the current instance is not `System.String.Empty`, it is appended to *address*.

[Note: This method returns a writable stream that is used to send data to a resource. The underlying request is made with the protocol method specified by *method*. For more information about protocol methods, see `System.Net.WebRequest.Method`.

If the *method* parameter specifies a method that is not recognized by the server, the

underlying protocol classes determine what occurs. Typically, a `System.Net.WebException` is thrown with the `System.Net.WebException.Status` property set to indicate the error.

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Exceptions

Exception	Condition
System.Net.WebException	The absolute URI is not valid. -or- An error occurred while opening the stream.

WebClient.UploadData(System.String, System.String, System.Byte[]) Method

```
[ILAsm]  
.method public hidebysig instance class System.Byte[] UploadData(string  
address, string method, class System.Byte[] data)  
  
[C#]  
public byte[] UploadData(string address, string method, byte[] data)
```

Summary

Uploads the specified data to the resource identified by the specified URI using the specified protocol method.

Parameters

Parameter	Description
<i>address</i>	A System.String that specifies the URI of the resource to receive the data.
<i>method</i>	A System.String that specifies the protocol method used to send the data to the resource identified by <i>address</i> .
<i>data</i>	A System.Byte array containing data to send to the resource.

Return Value

A System.Byte array containing the body of the response, if any, from the server hosting the resource.

Description

If the System.Net.WebClient.BaseAddress property of the current instance is not System.String.Empty, *address* is combined with System.Net.WebClient.BaseAddress to form the absolute URI of the requested data. If the System.Net.WebClient.BaseAddress property of the current instance is System.String.Empty, *address* is required to be the absolute URI of the requested data. If the System.Net.WebClient.QueryString property of the current instance is not System.String.Empty, it is appended to *address*.

[Note: For more information about protocol methods, see

1 `System.Net.WebRequest.Method`.

2
3 This method does not encode the contents of *data* before uploading it to the resource.

4
5 If *method* specifies a method that is not recognized by the server, the underlying
6 protocol classes determine what occurs. Typically, a `System.Net.WebException` is
7 thrown with the `System.Net.WebException.Status` property set to indicate the error.

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10 Exceptions

Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>data</i> is null.
	-or-
	An error occurred while opening the stream or uploading the data.
	-or-
	There was no response from the server hosting the resource.

WebClient.UploadData(System.String, System.Byte[]) Method

```
[ILAsm]  
.method public hidebysig instance class System.Byte[] UploadData(string  
address, class System.Byte[] data)  
  
[C#]  
public byte[] UploadData(string address, byte[] data)
```

Summary

Uploads the specified data to the resource identified by the specified URI.

Parameters

Parameter	Description
<i>address</i>	A System.String that specifies the URI of the resource to receive the data.
<i>data</i>	A System.Byte array containing data to send to the resource.

Return Value

A System.Byte array containing the body of the response, if any, from the server hosting the resource.

Description

This method is equivalent to `System.Net.WebClient.UploadData (address, "POST", data)`.

If the `System.Net.WebClient.BaseAddress` property of the current instance is not `System.String.Empty`, *address* is combined with `System.Net.WebClient.BaseAddress` to form the absolute URI of the requested data. If the `System.Net.WebClient.BaseAddress` property of the current instance is `System.String.Empty`, *address* is required to be the absolute URI of the requested data. If the `System.Net.WebClient.QueryString` property of the current instance is not `System.String.Empty`, it is appended to *address*.

[Note: This method sends a data buffer to a resource. The underlying request is made using the POST method.]

1 This method does not encode the contents of *data* before uploading it to the resource.
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4 Exceptions

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Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>data</i> is null.
	-or-
	An error occurred while opening the stream or uploading the data.
	-or-
	There was no response from the server hosting the resource.

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WebClient.UploadFile(System.String, System.String, System.String) Method

```
[ILAsm]  
.method public hidebysig instance class System.Byte[] UploadFile(string  
address, string method, string fileName)  
  
[C#]  
public byte[] UploadFile(string address, string method, string fileName)
```

Summary

Uploads the specified local file using the specified protocol method to the resource identified by the specified URI.

Parameters

Parameter	Description
<i>address</i>	A System.String that specifies the URI of the resource to receive the file.
<i>method</i>	A System.String that specifies the protocol method used to send the data to the resource identified by <i>address</i> .
<i>fileName</i>	A System.String that specifies the file to send to the resource.

Return Value

A System.Byte array containing the body of the response, if any, from the server hosting the resource.

Description

If the System.Net.WebClient.BaseAddress property of the current instance is not System.String.Empty, *address* is combined with System.Net.WebClient.BaseAddress to form the absolute URI of the requested data. If the System.Net.WebClient.BaseAddress property of the current instance is System.String.Empty, *address* is required to be the absolute URI of the requested data. If the System.Net.WebClient.QueryString property of the current instance is not System.String.Empty, it is appended to *address*.

[Note: For more information about protocol methods, see

1 `System.Net.WebRequest.Method.`

2
3 If *method* specifies a protocol method that is not recognized by the server, the
4 underlying protocol classes determine what occurs. Typically, a
5 `System.Net.WebException` is thrown with the `System.Net.WebException.Status`
6 property set to indicate the error.

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9 Exceptions

Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>filename</i> is null or <code>System.String.Empty</code> or contains invalid characters, or the specified path to the file does not exist.
	-or-
	An error occurred while opening the stream or uploading the file.
	-or-
	There was no response from the server hosting the resource.
	-or-
	The Content-Type header begins with "multipart".
System.Security.SecurityException	The caller does not have the required permissions.

13 Permissions

Permission	Description
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System.Security.Permissions. FileIOPermission	Requires permission to access path information and read files. See System.Security.Permissions.FileIOPermissionAccess. PathDiscovery and System.Security.Permissions.FileIOPermissionAccess. Read.
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WebClient.UploadFile(System.String, System.String) Method

```
[ILAsm]  
.method public hidebysig instance class System.Byte[] UploadFile(string  
address, string fileName)  
  
[C#]  
public byte[] UploadFile(string address, string fileName)
```

Summary

Uploads the specified local file to the resource identified by the specified URI.

Parameters

Parameter	Description
<i>address</i>	A System.String that specifies the URI of the resource to receive the file.
<i>fileName</i>	A System.String that specifies the file to send to the resource.

Return Value

A System.Byte array containing the body of the response, if any, from the server hosting the resource.

Description

This method is equivalent to `System.Net.WebClient.UploadFile (address, "POST", filename)`.

If the `System.Net.WebClient.BaseAddress` property of the current instance is not `System.String.Empty`, *address* is combined with `System.Net.WebClient.BaseAddress` to form the absolute URI of the requested data. If the `System.Net.WebClient.BaseAddress` property of the current instance is `System.String.Empty`, *address* is required to be the absolute URI of the requested data. If the `System.Net.WebClient.QueryString` property of the current instance is not `System.String.Empty`, it is appended to *address*.

[Note: This method sends a local file to a resource. The underlying request is made using the POST method.]

Exceptions

Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>filename</i> is null or <code>System.String.Empty</code> or contains invalid characters, or the specified path to the file does not exist.
	-or-
	An error occurred while opening the stream or uploading the file.
	-or-
	There was no response from the server hosting the resource.
	-or-
	The Content-Type header begins with "multipart".
System.Security.SecurityException	Local file access has not been granted.

Permissions

Permission	Description
System.Security.Permissions.FileIOPermission	Requires permission to access path information and read files. See <code>System.Security.Permissions.FileIOPermissionAccess.PathDiscovery</code> and <code>System.Security.Permissions.FileIOPermissionAccess.</code>

	Read.
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WebClient.UploadValues(System.String, System.String, System.Collections.Specialized.NameValueCollection) Method

```
[ILAsm]
.method public hidebysig instance class System.Byte[] UploadValues(string
address, string method, class
System.Collections.Specialized.NameValueCollection data)

[C#]
public byte[] UploadValues(string address, string method,
NameValueCollection data)
```

Summary

Uploads the specified name/value collection to the specified resource using the specified method.

Parameters

Parameter	Description
<i>address</i>	A System.String that specifies the URI of the resource to receive the collection <i>data</i> .
<i>method</i>	A System.String that specifies the protocol method used to send <i>data</i> to the resource.
<i>data</i>	The System.Collections.Specialized.NameValueCollection to send to the resource identified by <i>address</i> .

Return Value

A System.Byte array containing the body of the response, if any, from the server hosting the resource.

Description

If the Content-Type header is null, this method sets it to "application/x-www-form-urlencoded".

If the `System.Net.WebClient.BaseAddress` property of the current instance is not `System.String.Empty`, *address* is combined with `System.Net.WebClient.BaseAddress` to form the absolute URI of the requested data. If the `System.Net.WebClient.BaseAddress` property of the current instance is `System.String.Empty`, *address* is required to be the absolute URI of the requested data. If the `System.Net.WebClient.QueryString` property of the current instance is not `System.String.Empty`, it is appended to *address*.

[*Note:* If *method* specifies a protocol method that is not recognized by the server, the underlying protocol classes determine what occurs. Typically, a `System.Net.WebException` is thrown with the `System.Net.WebException.Status` property set to indicate the error.]

Exceptions

Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>data</i> is null.
	-or-
	An error occurred while opening the stream or uploading the data.
	-or-
	There was no response from the server hosting the resource.
	-or-
	The Content-Type header is not null, and is not "application/x-www-form-urlencoded".

WebClient.UploadValues(System.String, System.Collections.Specialized.NameValueCollection) Method

```
[ILAsm]  
.method public hidebysig instance class System.Byte[] UploadValues(string  
address, class System.Collections.Specialized.NameValueCollection data)  
  
[C#]  
public byte[] UploadValues(string address, NameValueCollection data)
```

Summary

Uploads the specified name/value collection to the specified resource.

Parameters

Parameter	Description
<i>address</i>	A <code>System.String</code> that specifies the URI of the resource to receive the collection <i>data</i> .
<i>data</i>	The <code>System.Collections.Specialized.NameValueCollection</code> to send to the resource identified by <i>address</i> .

Return Value

A `System.Byte` array containing the body of the response, if any, from the server hosting the resource.

Description

This method is equivalent to `System.Net.WebClient.UploadValues (address, "POST", data)`.

If the Content-Type header is `null`, this method sets it to "application/x-www-form-urlencoded".

If the `System.Net.WebClient.BaseAddress` property of the current instance is not `System.String.Empty`, *address* is combined with `System.Net.WebClient.BaseAddress` to form the absolute URI of the requested data. If the `System.Net.WebClient.BaseAddress` property of the current instance is

`System.String.Empty`, *address* is required to be the absolute URI of the requested data. If the `System.Net.WebClient.QueryString` property of the current instance is not `System.String.Empty`, it is appended to *address*.

[*Note:* The underlying request is made using the POST method.]

Exceptions

Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>data</i> is null.
	-or-
	An error occurred while opening the stream or uploading the data.
	-or-
	There was no response from the server hosting the resource.
	-or-
	The Content-Type header is not null, and is not "application/x-www-form-urlencoded".

WebClient.BaseAddress Property

```
[ILAsm]  
.property string BaseAddress { public hidebysig specialname instance  
string get_BaseAddress() public hidebysig specialname instance void  
set_BaseAddress(string value) }  
  
[C#]  
public string BaseAddress { get; set; }
```

Summary

Gets or sets the base URI for requests made by a `System.Net.WebClient`.

Property Value

A `System.String` containing the base URI for requests made by a `System.Net.WebClient` or, `System.String.Empty`, if no value was set or `null` was specified for a set operation.

Description

[*Note:* The `System.Net.WebClient.BaseAddress` property contains a base URI that is combined with the relative address specified when calling an upload or download method.]

Exceptions

Exception	Condition
System.ArgumentException	The value specified for a set operation is not <code>null</code> or <code>System.String.Empty</code> , and is not a URI in a format recognized by the <code>System.Uri</code> class.

WebClient.Credentials Property

```
[ILAsm]
.property class System.Net.ICredentials Credentials { public hidebysig
specialname instance class System.Net.ICredentials get_Credentials()
public hidebysig specialname instance void set_Credentials(class
System.Net.ICredentials value) }

[C#]
public ICredentials Credentials { get; set; }
```

Summary

Gets or sets the network credentials used to authenticate the client making the current request.

Property Value

A `System.Net.ICredentials` containing the authentication credentials for the request. The default is `null`.

Description

The `System.Net.WebClient.Credentials` property contains the authentication credentials required to access the Internet resource.

WebClient.Headers Property

```
[ILAsm]
.property class System.Net.WebHeaderCollection Headers { public hidebysig
specialname instance class System.Net.WebHeaderCollection get_Headers()
public hidebysig specialname instance void set_Headers(class
System.Net.WebHeaderCollection value) }

[C#]
public WebHeaderCollection Headers { get; set; }
```

Summary

Gets or sets a collection of header name/value pairs associated with the request.

Property Value

A `System.Net.WebHeaderCollection` containing header name/value pairs associated with the request or, if this property has not been set or was set to null, a new instance of the `System.Net.WebHeaderCollection` class.

Description

[*Note:* This property stores the header information that the current instance sends with a request. This is an unrestricted collection of headers; setting headers that are protected in `System.Net.WebRequest` descendants like `System.Net.HttpWebRequest` is allowed.]

WebClient.QueryString Property

```
[ILAsm]
.property class System.Collections.Specialized.NameValueCollection
QueryString { public hidebysig specialname instance class
System.Collections.Specialized.NameValueCollection get_QueryString()
public hidebysig specialname instance void set_QueryString(class
System.Collections.Specialized.NameValueCollection value) }

[C#]
public NameValueCollection QueryString { get; set; }
```

Summary

Gets or sets a collection of query name/value pairs associated with the request.

Property Value

A `System.Collections.Specialized.NameValueCollection` that contains query name/value pairs associated with the request or, if this property has not been set or was set to null, a new instance of the `System.Collections.Specialized.NameValueCollection` class.

Description

The `System.Net.WebClient.QueryString` property contains a `System.Collections.Specialized.NameValueCollection` instance containing name/value pairs that are appended to the URI as a query string. The contents of the `System.Net.WebClient.QueryString` property are preceded by a question mark (?), and each name/value pair is separated by an ampersand (&).

WebClient.ResponseHeaders Property

```
[ILAsm]
.property class System.Net.WebHeaderCollection ResponseHeaders { public
hidebysig specialname instance class System.Net.WebHeaderCollection
get_ResponseHeaders() }

[C#]
public WebHeaderCollection ResponseHeaders { get; }
```

Summary

Gets a collection of header name/value pairs associated with the response.

Property Value

A `System.Net.WebHeaderCollection` containing header name/value pairs associated with the response.

Description

This property is read-only.

The `System.Net.WebClient.ResponseHeaders` property contains a `System.Net.WebHeaderCollection` instance containing header information the `System.Net.WebClient` receives from the Internet resource.