

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]
- Version: 1.0.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.

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

- 3 • **System.Net.WebClient.OpenWrite** sends a
4 **System.IO.Stream** to the server hosting a resource.
- 5 • **System.Net.WebClient.UploadData** sends a byte array to
6 the server hosting a resource and returns a byte array
7 containing the response from the server, if any.
- 8 • **System.Net.WebClient.UploadFile** sends a local file to the
9 server hosting a resource and returns a byte array containing
10 the response from the server, if any.
- 11 • **System.Net.WebClient.UploadValues** sends a
12 **System.Collections.Specialized.NameValueCollection**
13 collection to the server hosting a resource and returns a byte
14 array containing the response from the server, if any.

15 The **System.Net.WebClient** class also provides the following methods
16 for downloading data from a resource.

- 17 • **System.Net.WebClient.DownloadData** downloads data from
18 a resource and returns a byte array.
- 19 • **System.Net.WebClient.DownloadFile** downloads data from
20 a resource to a local file.
- 21 • **System.Net.WebClient.OpenRead** returns the data from the
22 resource as a **System.IO.Stream**.

23]

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1 WebClient() Constructor

```
2 [ILASM]  
3 public rtspecialname specialname instance void .ctor()  
4  
5 [C#]  
6 public WebClient()
```

6 Summary

7 Constructs a new instance of the **System.Net.WebClient** class.

8 Description

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

11

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
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
System.Net.WebException	The absolute URI is not valid. -or- <i>filename</i> is null or System.String.Empty or

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Permissions

	contains invalid characters, or the specified path to the file does not exist. -or- An error occurred while downloading data.
System.Security.SecurityException	The caller does not have permission to write to local files.

Permission	Description
System.Security.Permissions.FileIOPermission	Requires permission to write to files. See System.Security.Permissions.FileIOPermissionAccess Write.

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

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 System.String 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	The absolute URI is not valid.

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	-or- An error occurred while opening the stream.
--	---

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 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> .

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

1 **System.Net.WebException.Status** property set to indicate the
2 error.]

3 **Exceptions**

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

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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.

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

1 **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.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 **System.Net.WebRequest.Method**.

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

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

9 **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) 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.]

1 **Exceptions**

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Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>filename</i> is null or System.String.Empty 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.

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5 **Permissions**

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Permission	Description
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, 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 **System.Net.WebRequest.Method**.

If *method* specifies a protocol method that is not recognized by the

1 server, the underlying protocol classes determine what occurs.
2 Typically, a **System.Net.WebException** is thrown with the
3 **System.Net.WebException.Status** property set to indicate the
4 error.]

5 **Exceptions**

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Exception	Condition
System.Net.WebException	The absolute URI is not valid.
	-or-
	<i>filename</i> is null or System.String.Empty 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.
System.Security.SecurityException	-or-
	There was no response from the server hosting the resource.
	-or-
System.Security.SecurityException	The Content-Type header begins with "multipart".
	The caller does not have the required permissions.

8

9 **Permissions**

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11

Permission	Description
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.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 System.String that specifies the URI of the resource to receive the collection <i>data</i> .
<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

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

1 instance is not **System.String.Empty**, it is appended to *address*.

2

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

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.
	-or-
	The Content-Type header is not null , and is not "application/x-www-form-urlencoded".

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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

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

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

10 **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.
	-or-
	The Content-Type header is not null , and is not "application/x-www-form-urlencoded".

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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 null or System.String.Empty , and is not a URI in a format recognized by the System.Uri class.

1 WebClient.Credentials Property

```
2 [ILASM]
3 .property class System.Net.ICredentials Credentials {
4 public hidebysig specialname instance class
5 System.Net.ICredentials get_Credentials() public hidebysig
6 specialname instance void set_Credentials(class
7 System.Net.ICredentials value) }

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

10 Summary

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

13 Property Value

15 A **System.Net.ICredentials** containing the authentication credentials
16 for the request. The default is **null**.

17 Description

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

20

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.