

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:* 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.

- `System.Net.WebClient.OpenWrite` sends a `System.IO.Stream` to the server hosting a resource.
- `System.Net.WebClient.UploadData` sends a byte array to the server hosting a resource and returns a byte array containing the response from the server, if any.
- `System.Net.WebClient.UploadFile` sends a local file to the server hosting a resource and returns a byte array containing the response from the server, if any.
- `System.Net.WebClient.UploadValues` sends a `System.Collections.Specialized.NameValueCollection` collection to the server hosting a resource and returns a byte array containing the response from the server, if any.

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

- `System.Net.WebClient.DownloadData` downloads data from a resource and returns a byte array.
- `System.Net.WebClient.DownloadFile` downloads data from a resource to a local file.
- `System.Net.WebClient.OpenRead` returns the data from the resource as a `System.IO.Stream`.

]

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 <code>System.String</code> 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.

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 <code>System.String.Empty</code> or contains invalid characters, or the specified

	<p>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
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System.Net.WebException

The absolute URI is not valid.

-or-

An error occurred while downloading data.

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
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System.Net.WebException

The absolute URI is not valid.

-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 <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.

]

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 <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> .
<i>data</i>	A <code>System.Byte</code> 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`.

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

If *method* 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- <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 <code>System.String</code> that specifies the URI of the resource to receive the data.
<i>data</i>	A <code>System.Byte</code> 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.

]

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

Permissions

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.

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	<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 opening the stream or uploading the file.</p> <p>-or-</p> <p>There was no response from the server hosting the resource.</p> <p>-or-</p> <p>The Content-Type header begins with "multipart".</p>
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.Read</code> .

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 <code>System.String</code> that specifies the URI of the resource to receive the collection <i>data</i> .
<i>method</i>	A <code>System.String</code> that specifies the protocol method used to send <i>data</i> to the resource.
<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

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 null 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.