**Socket Class**

**.NET Framework 4**

[**Inheritance Hierarchy**](javascript:void(0))

[System.Object](http://msdn.microsoft.com/en-us/library/system.object.aspx)  
**System.Net.Sockets.Socket**

**Namespace:** [System.Net.Sockets](http://msdn.microsoft.com/en-us/library/system.net.sockets.aspx)  
**Assembly:** System (in System.dll)

[**Syntax**](javascript:void(0))

**C#**

public class Socket : IDisposable

The **Socket** type exposes the following members.

[**Constructors**](javascript:void(0))

|  |  |  |
| --- | --- | --- |
|  | Name | Description |
| Description: Public method | [Socket(SocketInformation)](http://msdn.microsoft.com/en-us/library/ms145125.aspx) | Initializes a new instance of the **Socket** class using the specified value returned from [DuplicateAndClose](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.duplicateandclose.aspx). |
| Description: Public method | [Socket(AddressFamily, SocketType, ProtocolType)](http://msdn.microsoft.com/en-us/library/2b86d684.aspx) | Initializes a new instance of the **Socket** class using the specified address family, socket type and protocol. |

[**Properties**](javascript:void(0))

|  |  |  |
| --- | --- | --- |
|  | Name | Description |
| Description: Public property | [AddressFamily](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.addressfamily.aspx) | Gets the address family of the **Socket**. |
| Description: Public property | [Available](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.available.aspx) | Gets the amount of data that has been received from the network and is available to be read. |
| Description: Public property | [Blocking](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.blocking.aspx) | Gets or sets a value that indicates whether the **Socket** is in blocking mode. |
| Description: Public property | [Connected](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.connected.aspx) | Gets a value that indicates whether a **Socket** is connected to a remote host as of the last [Send](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.send.aspx) or [Receive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receive.aspx) operation. |
| Description: Public property | [DontFragment](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.dontfragment.aspx) | Gets or sets a [Boolean](http://msdn.microsoft.com/en-us/library/system.boolean.aspx) value that specifies whether the **Socket** allows Internet Protocol (IP) datagrams to be fragmented. |
| Description: Public property | [EnableBroadcast](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.enablebroadcast.aspx) | Gets or sets a [Boolean](http://msdn.microsoft.com/en-us/library/system.boolean.aspx) value that specifies whether the **Socket** can send or receive broadcast packets. |
| Description: Public property | [ExclusiveAddressUse](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.exclusiveaddressuse.aspx) | Gets or sets a [Boolean](http://msdn.microsoft.com/en-us/library/system.boolean.aspx) value that specifies whether the **Socket** allows only one process to bind to a port. |
| Description: Public property | [Handle](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.handle.aspx) | Gets the operating system handle for the **Socket**. |
| Description: Public property | [IsBound](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.isbound.aspx) | Gets a value that indicates whether the **Socket** is bound to a specific local port. |
| Description: Public property | [LingerState](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.lingerstate.aspx) | Gets or sets a value that specifies whether the **Socket** will delay closing a socket in an attempt to send all pending data. |
| Description: Public property | [LocalEndPoint](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.localendpoint.aspx) | Gets the local endpoint. |
| Description: Public property | [MulticastLoopback](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.multicastloopback.aspx) | Gets or sets a value that specifies whether outgoing multicast packets are delivered to the sending application. |
| Description: Public property | [NoDelay](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.nodelay.aspx) | Gets or sets a [Boolean](http://msdn.microsoft.com/en-us/library/system.boolean.aspx) value that specifies whether the stream **Socket** is using the Nagle algorithm. |
| Description: Public propertyDescription: Static member | [OSSupportsIPv4](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.ossupportsipv4.aspx) | Indicates whether the underlying operating system and network adaptors support Internet Protocol version 4 (IPv4). |
| Description: Public propertyDescription: Static member | [OSSupportsIPv6](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.ossupportsipv6.aspx) | Indicates whether the underlying operating system and network adaptors support Internet Protocol version 6 (IPv6). |
| Description: Public property | [ProtocolType](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.protocoltype.aspx) | Gets the protocol type of the **Socket**. |
| Description: Public property | [ReceiveBufferSize](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receivebuffersize.aspx) | Gets or sets a value that specifies the size of the receive buffer of the **Socket**. |
| Description: Public property | [ReceiveTimeout](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receivetimeout.aspx) | Gets or sets a value that specifies the amount of time after which a synchronous [Receive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receive.aspx) call will time out. |
| Description: Public property | [RemoteEndPoint](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.remoteendpoint.aspx) | Gets the remote endpoint. |
| Description: Public property | [SendBufferSize](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.sendbuffersize.aspx) | Gets or sets a value that specifies the size of the send buffer of the **Socket**. |
| Description: Public property | [SendTimeout](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.sendtimeout.aspx) | Gets or sets a value that specifies the amount of time after which a synchronous [Send](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.send.aspx) call will time out. |
| Description: Public property | [SocketType](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.sockettype.aspx) | Gets the type of the **Socket**. |
| Description: Public propertyDescription: Static member | [SupportsIPv4](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.supportsipv4.aspx) | **Obsolete.** Gets a value indicating whether IPv4 support is available and enabled on the current host. |
| Description: Public propertyDescription: Static member | [SupportsIPv6](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.supportsipv6.aspx) | **Obsolete.** Gets a value that indicates whether the Framework supports IPv6 for certain obsolete [Dns](http://msdn.microsoft.com/en-us/library/system.net.dns.aspx) members. |
| Description: Public property | [Ttl](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.ttl.aspx) | Gets or sets a value that specifies the Time To Live (TTL) value of Internet Protocol (IP) packets sent by the **Socket**. |
| Description: Public property | [UseOnlyOverlappedIO](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.useonlyoverlappedio.aspx) | Specifies whether the socket should only use Overlapped I/O mode. |

[**Methods**](javascript:void(0))

|  |  |  |
| --- | --- | --- |
|  | Name | Description |
| Description: Public method | [Accept](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.accept.aspx) | Creates a new **Socket** for a newly created connection. |
| Description: Public method | [AcceptAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.acceptasync.aspx) | Begins an asynchronous operation to accept an incoming connection attempt. |
| Description: Public method | [BeginAccept(AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/5bb431f9.aspx) | Begins an asynchronous operation to accept an incoming connection attempt. |
| Description: Public method | [BeginAccept(Int32, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/bysfec7w.aspx) | Begins an asynchronous operation to accept an incoming connection attempt and receives the first block of data sent by the client application. |
| Description: Public method | [BeginAccept(Socket, Int32, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/6y709t3b.aspx) | Begins an asynchronous operation to accept an incoming connection attempt from a specified socket and receives the first block of data sent by the client application. |
| Description: Public method | [BeginConnect(EndPoint, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/tad07yt6.aspx) | Begins an asynchronous request for a remote host connection. |
| Description: Public method | [BeginConnect(IPAddress, Int32, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ms145128.aspx) | Begins an asynchronous request for a remote host connection. The host is specified by an [IPAddress](http://msdn.microsoft.com/en-us/library/system.net.ipaddress.aspx) and a port number. |
| Description: Public method | [BeginConnect(IPAddress[], Int32, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ms145129.aspx) | Begins an asynchronous request for a remote host connection. The host is specified by an [IPAddress](http://msdn.microsoft.com/en-us/library/system.net.ipaddress.aspx) array and a port number. |
| Description: Public method | [BeginConnect(String, Int32, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/6aeby4wt.aspx) | Begins an asynchronous request for a remote host connection. The host is specified by a host name and a port number. |
| Description: Public method | [BeginDisconnect](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.begindisconnect.aspx) | Begins an asynchronous request to disconnect from a remote endpoint. |
| Description: Public method | [BeginReceive(IList<ArraySegment<Byte>>, SocketFlags, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/3sah14d0.aspx) | Begins to asynchronously receive data from a connected **Socket**. |
| Description: Public method | [BeginReceive(IList<ArraySegment<Byte>>, SocketFlags, SocketError, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ms145131.aspx) | Begins to asynchronously receive data from a connected **Socket**. |
| Description: Public method | [BeginReceive(Byte[], Int32, Int32, SocketFlags, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/dxkwh6zw.aspx) | Begins to asynchronously receive data from a connected **Socket**. |
| Description: Public method | [BeginReceive(Byte[], Int32, Int32, SocketFlags, SocketError, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ms145132.aspx) | Begins to asynchronously receive data from a connected **Socket**. |
| Description: Public method | [BeginReceiveFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginreceivefrom.aspx) | Begins to asynchronously receive data from a specified network device. |
| Description: Public method | [BeginReceiveMessageFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginreceivemessagefrom.aspx) | Begins to asynchronously receive the specified number of bytes of data into the specified location of the data buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx), and stores the endpoint and packet information.. |
| Description: Public method | [BeginSend(IList<ArraySegment<Byte>>, SocketFlags, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/38dxf7kt.aspx) | Sends data asynchronously to a connected **Socket**. |
| Description: Public method | [BeginSend(IList<ArraySegment<Byte>>, SocketFlags, SocketError, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ms145135.aspx) | Sends data asynchronously to a connected **Socket**. |
| Description: Public method | [BeginSend(Byte[], Int32, Int32, SocketFlags, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/7h44aee9.aspx) | Sends data asynchronously to a connected **Socket**. |
| Description: Public method | [BeginSend(Byte[], Int32, Int32, SocketFlags, SocketError, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ms145136.aspx) | Sends data asynchronously to a connected **Socket**. |
| Description: Public method | [BeginSendFile(String, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ac1zy13z.aspx) | Sends the file *fileName* to a connected **Socket** object using the [UseDefaultWorkerThread](http://msdn.microsoft.com/en-us/library/system.net.sockets.transmitfileoptions.aspx) flag. |
| Description: Public method | [BeginSendFile(String, Byte[], Byte[], TransmitFileOptions, AsyncCallback, Object)](http://msdn.microsoft.com/en-us/library/ms145138.aspx) | Sends a file and buffers of data asynchronously to a connected **Socket** object. |
| Description: Public method | [BeginSendTo](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginsendto.aspx) | Sends data asynchronously to a specific remote host. |
| Description: Public method | [Bind](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.bind.aspx) | Associates a **Socket** with a local endpoint. |
| Description: Public methodDescription: Static member | [CancelConnectAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.cancelconnectasync.aspx) | Cancels an asynchronous request for a remote host connection. |
| Description: Public method | [Close()](http://msdn.microsoft.com/en-us/library/wahsac9k.aspx) | Closes the **Socket** connection and releases all associated resources. |
| Description: Public method | [Close(Int32)](http://msdn.microsoft.com/en-us/library/bc68k4td.aspx) | Closes the **Socket** connection and releases all associated resources with a specified timeout to allow queued data to be sent. |
| Description: Public method | [Connect(EndPoint)](http://msdn.microsoft.com/en-us/library/ych8bz3x.aspx) | Establishes a connection to a remote host. |
| Description: Public method | [Connect(IPAddress, Int32)](http://msdn.microsoft.com/en-us/library/4xzx2d41.aspx) | Establishes a connection to a remote host. The host is specified by an IP address and a port number. |
| Description: Public method | [Connect(IPAddress[], Int32)](http://msdn.microsoft.com/en-us/library/034sezwy.aspx) | Establishes a connection to a remote host. The host is specified by an array of IP addresses and a port number. |
| Description: Public method | [Connect(String, Int32)](http://msdn.microsoft.com/en-us/library/d7ew360f.aspx) | Establishes a connection to a remote host. The host is specified by a host name and a port number. |
| Description: Public method | [ConnectAsync(SocketAsyncEventArgs)](http://msdn.microsoft.com/en-us/library/bb538102.aspx) | Begins an asynchronous request for a remote host connection. |
| Description: Public methodDescription: Static member | [ConnectAsync(SocketType, ProtocolType, SocketAsyncEventArgs)](http://msdn.microsoft.com/en-us/library/cc422500.aspx) | Begins an asynchronous request for a remote host connection. |
| Description: Public method | [Disconnect](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.disconnect.aspx) | Closes the socket connection and allows reuse of the socket. |
| Description: Public method | [DisconnectAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.disconnectasync.aspx) | Begins an asynchronous request to disconnect from a remote endpoint. |
| Description: Public method | [Dispose()](http://msdn.microsoft.com/en-us/library/cc190731.aspx) | Releases all resources used by the current instance of the **Socket** class. |
| Description: Protected method | [Dispose(Boolean)](http://msdn.microsoft.com/en-us/library/fw6035ck.aspx) | Releases the unmanaged resources used by the **Socket**, and optionally disposes of the managed resources. |
| Description: Public method | [DuplicateAndClose](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.duplicateandclose.aspx) | Duplicates the socket reference for the target process, and closes the socket for this process. |
| Description: Public method | [EndAccept(IAsyncResult)](http://msdn.microsoft.com/en-us/library/chfa7866.aspx) | Asynchronously accepts an incoming connection attempt and creates a new **Socket** to handle remote host communication. |
| Description: Public method | [EndAccept(Byte[], IAsyncResult)](http://msdn.microsoft.com/en-us/library/zdee4kd7.aspx) | Asynchronously accepts an incoming connection attempt and creates a new **Socket** object to handle remote host communication. This method returns a buffer that contains the initial data transferred. |
| Description: Public method | [EndAccept(Byte[], Int32, IAsyncResult)](http://msdn.microsoft.com/en-us/library/8y60w6ac.aspx) | Asynchronously accepts an incoming connection attempt and creates a new **Socket** object to handle remote host communication. This method returns a buffer that contains the initial data and the number of bytes transferred. |
| Description: Public method | [EndConnect](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endconnect.aspx) | Ends a pending asynchronous connection request. |
| Description: Public method | [EndDisconnect](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.enddisconnect.aspx) | Ends a pending asynchronous disconnect request. |
| Description: Public method | [EndReceive(IAsyncResult)](http://msdn.microsoft.com/en-us/library/w7wtt64b.aspx) | Ends a pending asynchronous read. |
| Description: Public method | [EndReceive(IAsyncResult, SocketError)](http://msdn.microsoft.com/en-us/library/ms145145.aspx) | Ends a pending asynchronous read. |
| Description: Public method | [EndReceiveFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endreceivefrom.aspx) | Ends a pending asynchronous read from a specific endpoint. |
| Description: Public method | [EndReceiveMessageFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endreceivemessagefrom.aspx) | Ends a pending asynchronous read from a specific endpoint. This method also reveals more information about the packet than [EndReceiveFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endreceivefrom.aspx). |
| Description: Public method | [EndSend(IAsyncResult)](http://msdn.microsoft.com/en-us/library/5f6fk8ze.aspx) | Ends a pending asynchronous send. |
| Description: Public method | [EndSend(IAsyncResult, SocketError)](http://msdn.microsoft.com/en-us/library/ms145149.aspx) | Ends a pending asynchronous send. |
| Description: Public method | [EndSendFile](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endsendfile.aspx) | Ends a pending asynchronous send of a file. |
| Description: Public method | [EndSendTo](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endsendto.aspx) | Ends a pending asynchronous send to a specific location. |
| Description: Public method | [Equals(Object)](http://msdn.microsoft.com/en-us/library/bsc2ak47.aspx) | Determines whether the specified [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx) is equal to the current [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx). (Inherited from [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx).) |
| Description: Protected method | [Finalize](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.finalize.aspx) | Frees resources used by the **Socket** class. (Overrides [Object.Finalize()](http://msdn.microsoft.com/en-us/library/system.object.finalize.aspx).) |
| Description: Public method | [GetHashCode](http://msdn.microsoft.com/en-us/library/system.object.gethashcode.aspx) | Serves as a hash function for a particular type. (Inherited from [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx).) |
| Description: Public method | [GetSocketOption(SocketOptionLevel, SocketOptionName)](http://msdn.microsoft.com/en-us/library/yh111yza.aspx) | Returns the value of a specified **Socket** option, represented as an object. |
| Description: Public method | [GetSocketOption(SocketOptionLevel, SocketOptionName, Byte[])](http://msdn.microsoft.com/en-us/library/1kxaatt0.aspx) | Returns the specified **Socket** option setting, represented as a byte array. |
| Description: Public method | [GetSocketOption(SocketOptionLevel, SocketOptionName, Int32)](http://msdn.microsoft.com/en-us/library/65736bs9.aspx) | Returns the value of the specified **Socket** option in an array. |
| Description: Public method | [GetType](http://msdn.microsoft.com/en-us/library/system.object.gettype.aspx) | Gets the [Type](http://msdn.microsoft.com/en-us/library/system.type.aspx) of the current instance. (Inherited from [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx).) |
| Description: Public method | [IOControl(Int32, Byte[], Byte[])](http://msdn.microsoft.com/en-us/library/ms145152.aspx) | Sets low-level operating modes for the **Socket** using numerical control codes. |
| Description: Public method | [IOControl(IOControlCode, Byte[], Byte[])](http://msdn.microsoft.com/en-us/library/8a3744sh.aspx) | Sets low-level operating modes for the **Socket** using the [IOControlCode](http://msdn.microsoft.com/en-us/library/system.net.sockets.iocontrolcode.aspx) enumeration to specify control codes. |
| Description: Public method | [Listen](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.listen.aspx) | Places a **Socket** in a listening state. |
| Description: Protected method | [MemberwiseClone](http://msdn.microsoft.com/en-us/library/system.object.memberwiseclone.aspx) | Creates a shallow copy of the current [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx). (Inherited from [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx).) |
| Description: Public method | [Poll](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.poll.aspx) | Determines the status of the **Socket**. |
| Description: Public method | [Receive(IList<ArraySegment<Byte>>)](http://msdn.microsoft.com/en-us/library/kw22c6h2.aspx) | Receives data from a bound **Socket** into the list of receive buffers. |
| Description: Public method | [Receive(Byte[])](http://msdn.microsoft.com/en-us/library/8s4y8aff.aspx) | Receives data from a bound **Socket** into a receive buffer. |
| Description: Public method | [Receive(IList<ArraySegment<Byte>>, SocketFlags)](http://msdn.microsoft.com/en-us/library/ec8ybzs0.aspx) | Receives data from a bound **Socket** into the list of receive buffers, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Receive(Byte[], SocketFlags)](http://msdn.microsoft.com/en-us/library/ms145154.aspx) | Receives data from a bound **Socket** into a receive buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Receive(IList<ArraySegment<Byte>>, SocketFlags, SocketError)](http://msdn.microsoft.com/en-us/library/ms145155.aspx) | Receives data from a bound **Socket** into the list of receive buffers, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Receive(Byte[], Int32, SocketFlags)](http://msdn.microsoft.com/en-us/library/26f591ax.aspx) | Receives the specified number of bytes of data from a bound **Socket** into a receive buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Receive(Byte[], Int32, Int32, SocketFlags)](http://msdn.microsoft.com/en-us/library/w3xtz6a5.aspx) | Receives the specified number of bytes from a bound **Socket** into the specified offset position of the receive buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Receive(Byte[], Int32, Int32, SocketFlags, SocketError)](http://msdn.microsoft.com/en-us/library/ms145156.aspx) | Receives data from a bound **Socket** into a receive buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [ReceiveAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receiveasync.aspx) | Begins an asynchronous request to receive data from a connected **Socket** object. |
| Description: Public method | [ReceiveFrom(Byte[], EndPoint)](http://msdn.microsoft.com/en-us/library/wdfskwcy.aspx) | Receives a datagram into the data buffer and stores the endpoint. |
| Description: Public method | [ReceiveFrom(Byte[], SocketFlags, EndPoint)](http://msdn.microsoft.com/en-us/library/7t7fzd26.aspx) | Receives a datagram into the data buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx), and stores the endpoint. |
| Description: Public method | [ReceiveFrom(Byte[], Int32, SocketFlags, EndPoint)](http://msdn.microsoft.com/en-us/library/yzkchh2x.aspx) | Receives the specified number of bytes into the data buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx), and stores the endpoint. |
| Description: Public method | [ReceiveFrom(Byte[], Int32, Int32, SocketFlags, EndPoint)](http://msdn.microsoft.com/en-us/library/kbfwcz73.aspx) | Receives the specified number of bytes of data into the specified location of the data buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx), and stores the endpoint. |
| Description: Public method | [ReceiveFromAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receivefromasync.aspx) | Begins to asynchronously receive data from a specified network device. |
| Description: Public method | [ReceiveMessageFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receivemessagefrom.aspx) | Receives the specified number of bytes of data into the specified location of the data buffer, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx), and stores the endpoint and packet information. |
| Description: Public method | [ReceiveMessageFromAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receivemessagefromasync.aspx) | Begins to asynchronously receive the specified number of bytes of data into the specified location in the data buffer, using the specified [SocketAsyncEventArgs.SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketasynceventargs.socketflags.aspx), and stores the endpoint and packet information. |
| Description: Public methodDescription: Static member | [Select](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.select.aspx) | Determines the status of one or more sockets. |
| Description: Public method | [Send(IList<ArraySegment<Byte>>)](http://msdn.microsoft.com/en-us/library/d318fkch.aspx) | Sends the set of buffers in the list to a connected **Socket**. |
| Description: Public method | [Send(Byte[])](http://msdn.microsoft.com/en-us/library/w93yy28a.aspx) | Sends data to a connected **Socket**. |
| Description: Public method | [Send(IList<ArraySegment<Byte>>, SocketFlags)](http://msdn.microsoft.com/en-us/library/xe0ef12h.aspx) | Sends the set of buffers in the list to a connected **Socket**, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Send(Byte[], SocketFlags)](http://msdn.microsoft.com/en-us/library/ms145160.aspx) | Sends data to a connected **Socket** using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Send(IList<ArraySegment<Byte>>, SocketFlags, SocketError)](http://msdn.microsoft.com/en-us/library/ms145161.aspx) | Sends the set of buffers in the list to a connected **Socket**, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Send(Byte[], Int32, SocketFlags)](http://msdn.microsoft.com/en-us/library/f3kd48xs.aspx) | Sends the specified number of bytes of data to a connected **Socket**, using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Send(Byte[], Int32, Int32, SocketFlags)](http://msdn.microsoft.com/en-us/library/4t14718h.aspx) | Sends the specified number of bytes of data to a connected **Socket**, starting at the specified offset, and using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [Send(Byte[], Int32, Int32, SocketFlags, SocketError)](http://msdn.microsoft.com/en-us/library/ms145162.aspx) | Sends the specified number of bytes of data to a connected **Socket**, starting at the specified offset, and using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx) |
| Description: Public method | [SendAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.sendasync.aspx) | Sends data asynchronously to a connected **Socket** object. |
| Description: Public method | [SendFile(String)](http://msdn.microsoft.com/en-us/library/sx0a40c2.aspx) | Sends the file *fileName* to a connected **Socket** object with the [UseDefaultWorkerThread](http://msdn.microsoft.com/en-us/library/system.net.sockets.transmitfileoptions.aspx) transmit flag. |
| Description: Public method | [SendFile(String, Byte[], Byte[], TransmitFileOptions)](http://msdn.microsoft.com/en-us/library/ms145164.aspx) | Sends the file *fileName* and buffers of data to a connected **Socket** object using the specified [TransmitFileOptions](http://msdn.microsoft.com/en-us/library/system.net.sockets.transmitfileoptions.aspx) value. |
| Description: Public method | [SendPacketsAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.sendpacketsasync.aspx) | Sends a collection of files or in memory data buffers asynchronously to a connected **Socket** object. |
| Description: Public method | [SendTo(Byte[], EndPoint)](http://msdn.microsoft.com/en-us/library/eae4f5y0.aspx) | Sends data to the specified endpoint. |
| Description: Public method | [SendTo(Byte[], SocketFlags, EndPoint)](http://msdn.microsoft.com/en-us/library/1h691da7.aspx) | Sends data to a specific endpoint using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [SendTo(Byte[], Int32, SocketFlags, EndPoint)](http://msdn.microsoft.com/en-us/library/w5zdhc3x.aspx) | Sends the specified number of bytes of data to the specified endpoint using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [SendTo(Byte[], Int32, Int32, SocketFlags, EndPoint)](http://msdn.microsoft.com/en-us/library/beez6ewa.aspx) | Sends the specified number of bytes of data to the specified endpoint, starting at the specified location in the buffer, and using the specified [SocketFlags](http://msdn.microsoft.com/en-us/library/system.net.sockets.socketflags.aspx). |
| Description: Public method | [SendToAsync](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.sendtoasync.aspx) | Sends data asynchronously to a specific remote host. |
| Description: Public method | [SetIPProtectionLevel](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.setipprotectionlevel.aspx) | Set the IP protection level on a socket. |
| Description: Public method | [SetSocketOption(SocketOptionLevel, SocketOptionName, Boolean)](http://msdn.microsoft.com/en-us/library/e160993d.aspx) | Sets the specified **Socket** option to the specified [Boolean](http://msdn.microsoft.com/en-us/library/system.boolean.aspx) value. |
| Description: Public method | [SetSocketOption(SocketOptionLevel, SocketOptionName, Byte[])](http://msdn.microsoft.com/en-us/library/w8h0abdk.aspx) | Sets the specified **Socket** option to the specified value, represented as a byte array. |
| Description: Public method | [SetSocketOption(SocketOptionLevel, SocketOptionName, Int32)](http://msdn.microsoft.com/en-us/library/1011kecd.aspx) | Sets the specified **Socket** option to the specified integer value. |
| Description: Public method | [SetSocketOption(SocketOptionLevel, SocketOptionName, Object)](http://msdn.microsoft.com/en-us/library/fs3sawaa.aspx) | Sets the specified **Socket** option to the specified value, represented as an object. |
| Description: Public method | [Shutdown](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.shutdown.aspx) | Disables sends and receives on a **Socket**. |
| Description: Public method | [ToString](http://msdn.microsoft.com/en-us/library/system.object.tostring.aspx) | Returns a string that represents the current object. (Inherited from [Object](http://msdn.microsoft.com/en-us/library/system.object.aspx).) |

[**Remarks**](javascript:void(0))

The **Socket** class provides a rich set of methods and properties for network communications. The **Socket** class allows you to perform both synchronous and asynchronous data transfer using any of the communication protocols listed in the [ProtocolType](http://msdn.microsoft.com/en-us/library/system.net.sockets.protocoltype.aspx) enumeration.

The **Socket** class follows the .NET Framework naming pattern for asynchronous methods. For example, the synchronous [Receive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receive.aspx) method corresponds to the asynchronous [BeginReceive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginreceive.aspx) and [EndReceive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endreceive.aspx) methods.

If your application only requires one thread during execution, use the following methods, which are designed for synchronous operation mode.

* If you are using a connection-oriented protocol such as TCP, your server can listen for connections using the [Listen](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.listen.aspx) method. The [Accept](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.accept.aspx) method processes any incoming connection requests and returns a **Socket** that you can use to communicate data with the remote host. Use this returned **Socket** to call the [Send](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.send.aspx) or [Receive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receive.aspx) method. Call the [Bind](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.bind.aspx) method prior to calling the [Listen](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.listen.aspx) method if you want to specify the local IP address and port number. Use a port number of zero if you want the underlying service provider to assign a free port for you. If you want to connect to a listening host, call the [Connect](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.connect.aspx) method. To communicate data, call the [Send](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.send.aspx) or [Receive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receive.aspx) method.
* If you are using a connectionless protocol such as UDP, you do not need to listen for connections at all. Call the [ReceiveFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.receivefrom.aspx) method to accept any incoming datagrams. Use the [SendTo](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.sendto.aspx) method to send datagrams to a remote host.

To process communications using separate threads during execution, use the following methods, which are designed for asynchronous operation mode.

* If you are using a connection-oriented protocol such as TCP, use the **Socket**, [BeginConnect](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginconnect.aspx), and [EndConnect](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endconnect.aspx) methods to connect with a listening host. Use the [BeginSend](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginsend.aspx) and [EndSend](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endsend.aspx) or [BeginReceive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginreceive.aspx) and [EndReceive](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endreceive.aspx) methods to communicate data asynchronously. Incoming connection requests can be processed using [BeginAccept](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginaccept.aspx) and [EndAccept](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endaccept.aspx).
* If you are using a connectionless protocol such as UDP, you can use [BeginSendTo](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginsendto.aspx) and [EndSendTo](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endsendto.aspx) to send datagrams, and [BeginReceiveFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.beginreceivefrom.aspx) and [EndReceiveFrom](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.endreceivefrom.aspx) to receive datagrams.

If you perform multiple asynchronous operations on a socket, they do not necessarily complete in the order in which they are started.

When you are finished sending and receiving data, use the [Shutdown](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.shutdown.aspx) method to disable the **Socket**. After calling [Shutdown](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.shutdown.aspx), call the [Close](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.close.aspx) method to release all resources associated with the **Socket**.

The **Socket** class allows you to configure your **Socket** using the [SetSocketOption](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.setsocketoption.aspx) method. Retrieve these settings using the [GetSocketOption](http://msdn.microsoft.com/en-us/library/system.net.sockets.socket.getsocketoption.aspx) method.

|  |
| --- |
| **Description: NoteNote** |
| If you are writing a relatively simple application and do not require maximum performance, consider using [TcpClient](http://msdn.microsoft.com/en-us/library/system.net.sockets.tcpclient.aspx), [TcpListener](http://msdn.microsoft.com/en-us/library/system.net.sockets.tcplistener.aspx), and [UdpClient](http://msdn.microsoft.com/en-us/library/system.net.sockets.udpclient.aspx). These classes provide a simpler and more user-friendly interface to **Socket** communications. |

[**Examples**](javascript:void(0))

The following code example shows how the **Socket** class can be used to send data to an HTTP server and receive the response. This example blocks until the entire page is received.

**C#**

using System;

using System.Text;

using System.IO;

using System.Net;

using System.Net.Sockets;

public class GetSocket

{

private static Socket ConnectSocket(string server, int port)

{

Socket s = null;

IPHostEntry hostEntry = null;

// Get host related information.

hostEntry = Dns.GetHostEntry(server);

// Loop through the AddressList to obtain the supported AddressFamily. This is to avoid

// an exception that occurs when the host IP Address is not compatible with the address family

// (typical in the IPv6 case).

foreach(IPAddress address in hostEntry.AddressList)

{

IPEndPoint ipe = new IPEndPoint(address, port);

Socket tempSocket =

new Socket(ipe.AddressFamily, SocketType.Stream, ProtocolType.Tcp);

tempSocket.Connect(ipe);

if(tempSocket.Connected)

{

s = tempSocket;

break;

}

else

{

continue;

}

}

return s;

}

// This method requests the home page content for the specified server.

private static string SocketSendReceive(string server, int port)

{

string request = "GET / HTTP/1.1\r\nHost: " + server +

"\r\nConnection: Close\r\n\r\n";

Byte[] bytesSent = Encoding.ASCII.GetBytes(request);

Byte[] bytesReceived = new Byte[256];

// Create a socket connection with the specified server and port.

Socket s = ConnectSocket(server, port);

if (s == null)

return ("Connection failed");

// Send request to the server.

s.Send(bytesSent, bytesSent.Length, 0);

// Receive the server home page content.

int bytes = 0;

string page = "Default HTML page on " + server + ":\r\n";

// The following will block until te page is transmitted.

do {

bytes = s.Receive(bytesReceived, bytesReceived.Length, 0);

page = page + Encoding.ASCII.GetString(bytesReceived, 0, bytes);

}

while (bytes > 0);

return page;

}

public static void Main(string[] args)

{

string host;

int port = 80;

if (args.Length == 0)

// If no server name is passed as argument to this program,

// use the current host name as the default.

host = Dns.GetHostName();

else

host = args[0];

string result = SocketSendReceive(host, port);

Console.WriteLine(result);

}

}