This page is specific to

Microsoft Visual Studio 2010/.NET Framework 4

**System-Provided Bindings**

Bindings specify the communication mechanism to use when talking to an endpoint and indicate how to connect to an endpoint. A binding contains the following elements:

* The protocol stack determines the security, reliability, and context flow settings to use for messages that are sent to the endpoint.
* The transport determines the underlying transport protocol to use when sending messages to the endpoint, for example, TCP or HTTP.
* The encoding determines the wire encoding to use for messages that are sent to the endpoint, for example, text/XML, binary, or Message Transmission Optimization Mechanism (MTOM).

This topic presents all of the system-provided Windows Communication Foundation (WCF) bindings. If none of these meets the exact criteria for your application, you can create a custom binding. For more information about creating custom bindings, see [Custom Bindings](http://msdn.microsoft.com/en-us/library/aa347793.aspx).

A secure and interoperable binding that supports the WS-Federation protocol enables organizations that are in a federation to efficiently authenticate and authorize users.

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| --- |
| **Description: ms730879.Important(en-us,VS.100).gifNote:** |
| Always select a binding that includes security. By default, all bindings except the [<basicHttpBinding>](http://msdn.microsoft.com/en-us/library/ms731361.aspx) element have security enabled. If you do not select a secure binding or disable security, be sure to protect your data in some other manner, such as storing in a secured data center or on an isolated network. |
| **Description: ms730879.Important(en-us,VS.100).gifNote:** |
| Never use duplex contracts with bindings that do not support security or that have security disabled unless you secure the data by some other means. |

**System-Provided Bindings**

The following bindings ship with WCF.

|  |  |  |
| --- | --- | --- |
| **Binding** | **Configuration Element** | **Description** |
| [BasicHttpBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.basichttpbinding.aspx) | [<basicHttpBinding>](http://msdn.microsoft.com/en-us/library/ms731361.aspx) | A binding that is suitable for communicating with WS-Basic Profile conformant Web services, for example, ASP.NET Web services (ASMX)-based services. This binding uses HTTP as the transport and text/XML as the default message encoding. |
| [WSHttpBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.wshttpbinding.aspx) | [<wsHttpBinding>](http://msdn.microsoft.com/en-us/library/ms731299.aspx) | A secure and interoperable binding that is suitable for non-duplex service contracts. |
| [WSDualHttpBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.wsdualhttpbinding.aspx) | [<wsDualHttpBinding>](http://msdn.microsoft.com/en-us/library/ms731821.aspx) | A secure and interoperable binding that is suitable for duplex service contracts or communication through SOAP intermediaries. |
| [WSFederationHttpBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.wsfederationhttpbinding.aspx) | [<wsFederationHttpBinding>](http://msdn.microsoft.com/en-us/library/ms731374.aspx) | A secure and interoperable binding that supports the WS-Federation protocol that enables organizations that are in a federation to efficiently authenticate and authorize users. |
| [NetTcpBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.nettcpbinding.aspx) | [<netTcpBinding>](http://msdn.microsoft.com/en-us/library/ms731343.aspx) | A secure and optimized binding suitable for cross-machine communication between WCF applications. |
| [NetNamedPipeBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.netnamedpipebinding.aspx) | [<netNamedPipeBinding>](http://msdn.microsoft.com/en-us/library/ms731291.aspx) | A secure, reliable, optimized binding that is suitable for on-machine communication between WCF applications. |
| [NetMsmqBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.netmsmqbinding.aspx) | [<netMsmqBinding>](http://msdn.microsoft.com/en-us/library/ms731380.aspx) | A queued binding that is suitable for cross-machine communication between WCF applications. |
| [NetPeerTcpBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.netpeertcpbinding.aspx) | [<netPeerTcpBinding>](http://msdn.microsoft.com/en-us/library/ms731318.aspx) | A binding that enables secure, multiple machine communication. |
| [MsmqIntegrationBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.msmqintegration.msmqintegrationbinding.aspx) | [<msmqIntegrationBinding>](http://msdn.microsoft.com/en-us/library/ms731792.aspx) | A binding that is suitable for cross-machine communication between a WCF application and existing Message Queuing applications. |
| [BasicHttpContextBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.basichttpcontextbinding.aspx) | [<basicHttpContextBinding>](http://msdn.microsoft.com/en-us/library/bb924439.aspx) | A binding that is suitable for communicating with WS-Basic Profile conformant Web services that enables HTTP cookies to be used to exchange context. |
| [NetTcpContextBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.nettcpcontextbinding.aspx) | [<netTcpContextBinding>](http://msdn.microsoft.com/en-us/library/bb924421.aspx) | A secure and optimized binding suitable for cross-machine communication between WCF applications that enables SOAP headers to be used to exchange context. |
| [WebHttpBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.webhttpbinding.aspx) | [<webHttpBinding>](http://msdn.microsoft.com/en-us/library/bb412176.aspx) | A binding used to configure endpoints for WCF Web services that are exposed through HTTP requests instead of SOAP messages. |
| [WSHttpContextBinding](http://msdn.microsoft.com/en-us/library/system.servicemodel.wshttpcontextbinding.aspx) | [<wsHttpContextBinding>](http://msdn.microsoft.com/en-us/library/bb924423.aspx) | A secure and interoperable binding that is suitable for non-duplex service contracts that enables SOAP headers to be used to exchange context. |

The following table shows the features of each of the system-provided bindings. The bindings are found in the table columns; the features are listed in the rows and described in a second table. The following table provides a key for the binding abbreviations used. To select a binding, determine which column satisfies all of the row features you need.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Binding** | **Interoperability** | **Security (Default)** | **Session (Default)** | **Transactions** | **Duplex** | **Encoding (Default)** | **Streaming (Default)** |
| **BasicHttpBinding** | Basic Profile 1.1 | (None), Transport, Message, Mixed | (None) | (None) | n/a | Text, (MTOM) | Yes  (buffered) |
| **WSHttpBinding** | WS | Transport, (Message), Mixed | (None), Reliable Session, Security Session | (None), Yes | n/a | (Text), MTOM | No |
| **WSDualHttpBinding** | WS | (Message), None | (Reliable Session), Security Session | (None), Yes | Yes | (Text), MTOM | No |
| **WSFederationHttpBinding** | WS-Federation | (Message), Mixed, None | (None), Reliable Session, Security Session | (None), Yes | No | (Text), MTOM | No |
| **NetTcpBinding** | .NET | (Transport), Message, None, Mixed | (Transport), Reliable Session, Security Session | (None), Yes | Yes | Binary | Yes  (buffered) |
| **NetNamedPipeBinding** | .NET | (Transport), None | None, (Transport) | (None), Yes | Yes | Binary | Yes  (buffered) |
| **NetMsmqBinding** | .NET | Message, (Transport), None | (None), Transport | None, (Yes) | No | Binary | No |
| **NetPeerTcpBinding** | Peer | (Transport) | (None) | (None) | Yes |  | No |
| **MsmqIntegrationBinding** | MSMQ | (Transport) | (None) | None, (Yes) | n/a | n/a | No |
| **BasicHttpContextBinding** | Basic Profile 1.1 | (None), Transport, Message, Mixed | (None) | (None) | n/a | Text, (MTOM) | Yes  (buffered) |
| **NetTcpContextBinding** | .NET | (Transport), Message, None, Mixed | (Transport), Reliable Session, Security Session | (None), Yes | Yes | Binary | Yes  (buffered) |
| **WSHttpContextBinding** | WS | Transport, (Message), Mixed | (None), Reliable Session, Security Session | (None), Yes | n/a | Text, (MTOM) | No |

The following table explains the features listed in the previous table.

|  |  |
| --- | --- |
| **Feature** | **Description** |
| Interoperability Type | Names the protocol or technology with which the binding ensures interoperation. |
| Security | Specifies how the channel is secured:   * None: The SOAP message is not secured and the client is not authenticated. * Transport: Security requirements are satisfied at the transport layer. * Message: Security requirements are satisfied at the message layer. * Mixed: Claims are carried in the message; integrity and confidentiality requirements are satisfied by the transport layer. |
| Session | Specifies whether this binding supports session contracts. |
| Transactions | Specifies whether transactions are enabled. |
| Duplex | Specifies whether duplex contracts are supported. Note that this feature requires support for Sessions in the binding. |
| Encoding | Specifies the wire format of the message. Allowable values include:   * Text: for example UTF-8. * Binary * Message Transmission Optimization Mechanism (MTOM): A method for efficiently encoding binary XML elements within the context of a SOAP envelope. |
| Streaming | Specifies whether streaming is supported for incoming and outgoing messages. Use the **TransferMode** property on the binding to set the value. The allowable values include:   * [Buffered](http://msdn.microsoft.com/en-us/library/system.servicemodel.transfermode.aspx): The request and response messages are both buffered. * [Streamed](http://msdn.microsoft.com/en-us/library/system.servicemodel.transfermode.aspx): The request and response messages are both streamed. * [StreamedRequest](http://msdn.microsoft.com/en-us/library/system.servicemodel.transfermode.aspx): The request message is streamed and the response message is buffered. * [StreamedResponse](http://msdn.microsoft.com/en-us/library/system.servicemodel.transfermode.aspx): The request message is buffered and the response message is streamed. |