

# Creating a Numeric Up/Down Control with a Web Service Backend

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## Overview

Instead of letting a user type a value into a check box, a numeric up/down control (that exists on Windows and other operating systems) could prove as more comfortable. By default, the **NumericUpDown** control always increases or decreases a value by 1, but a web service proves more flexibility.

## Steps

The ASP.NET AJAX Control Toolkit contains the **NumericUpDown** extender which automatically adds two buttons to a text box: One for increasing its value, one for decreasing it. However the control also supports a web service call (or page method call). Whenever the up or down button is clicked, the JavaScript code connects to the web server and executes a method there. The method signature is the following one:

```
Function MethodName(ByVal current As Integer, ByVal tag As String)
    As Integer
```

The **current** argument is the current value in the text box; the **tag** attribute is additional context data that can be set as a property of the **NumericUpDown** extender (but is not required).

For this sample, the numeric up/down control shall only allow values that are powers of two: 1, 2, 4, 8, 16, 32, 64, and so on. Therefore, the method executed when the user wants to increase the value must double the old value; the other method must divide value by two. So here is the complete web service:

```
<%@ WebService Language="VB" Class="NumericUpDown1" %>

Imports System.Web
Imports System.Web.Services
Imports System.Web.Services.Protocols

<System.Web.Script.Services.ScriptService()> _
Public Class NumericUpDown1
    Inherits System.Web.Services.WebService

    <WebMethod()> _
    Function Up(ByVal current As Integer, ByVal tag As String) As
        Integer
        If current <= 536870912 Then
            Return current * 2
        Else
            Return current
```

```

    End If
End Function

<WebMethod()> _
Function Down(ByVal current As Integer, ByVal tag As String) As
Integer
    If current >= 2 Then
        Return CInt(current / 2)
    Else
        Return current
    End If
End Function

End Class

```

Finally, create a new ASP.NET page. As usual, you need a **ScriptManager** control, a **TextBox** control and a **NumericUpDownExtender** control. For the latter, you have to provide the web service information:

- **ServiceDownMethod**—name of the “down” web method or page method
- **ServiceDownPath**—path to the web service with the “down” service method; omit if you are using a page method
- **ServiceUpMethod**—name of the “up” web method or page method
- **ServiceUpPath**—path to the web service with the “up” service method; omit if you are using a page method

Here is the complete markup for the page:

```

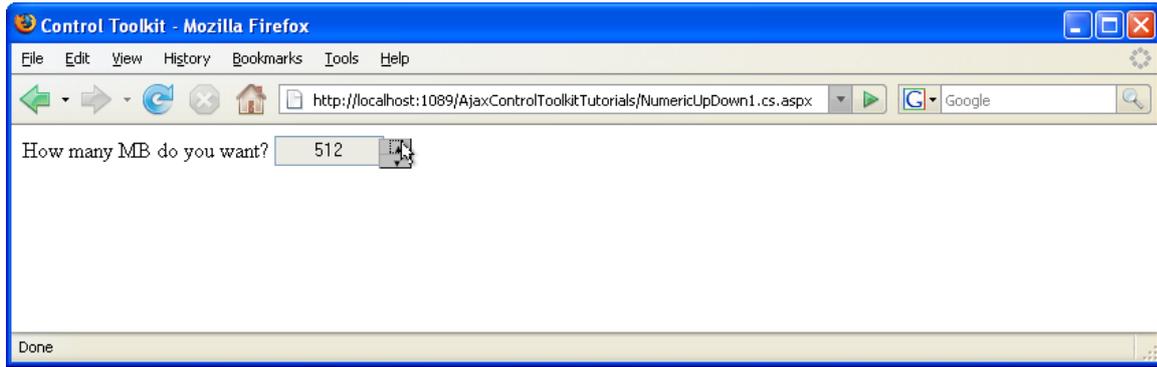
<%@ Page Language="VB" %>

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">
<head id="Head1" runat="server">
    <title>Control Toolkit</title>
</head>
<body>
    <form id="form1" runat="server">
        <asp:ScriptManager ID="asm" runat="server" />
        <div>
            How many MB do you want? <asp:TextBox ID="TextBox1"
Text="32" runat="server" />
            <ajaxToolkit:NumericUpDownExtender ID="nud" runat="server"
                TargetControlID="TextBox1" Width="100"
                ServiceUpPath="NumericUpDown1.vb.aspx"
                ServiceDownPath="NumericUpDown1.vb.aspx"
                ServiceUpMethod="Up" ServiceDownMethod="Down" />
        </div>
    </form>
</body>
</html>

```

If you run the page, notice how the value in the text box always doubles when you click on the upper button, and is halved when you click on the lower button.



**Only numbers that are a power of 2 appear**