

# New Features in DataWindow .NET™ 2.0

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## Callback and client-side paging support

Callback paging uses the new script callback feature of ASP.NET 2.0 to provide Web DataWindow page navigation without postback of the whole page to the server. Since no page postback occurs and only the DataWindow is refreshed, Web DataWindow paging performance is improved. XmlClientSide paging provides another option to perform page navigation entirely on the client side without page postback or callback by downloading all the data records in the result set on the first request. You can enable these two new paging methods using the PagingMethod property of the WebDataWindowControl. The default is PagingMethod.Postback.

The XmlClientSide paging option is currently supported only in the XML Web DataWindow and in DataWindow button actions or client JavaScript paging functions of the Web DataWindow client control. The XmlClientSide paging option is not supported in the integrated page navigation bar.

You can also set these properties in the DataWindow painter or in code using the HTMLGen.PagingMethod property.

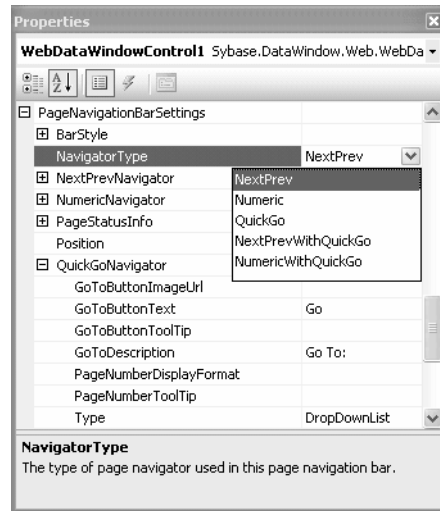
For more information, see “Paging methods” in the chapter on using Web DataWindows in the *Programmer’s Guide* and the description of HTMLGen.property in the *DataWindow Object Reference*.

## Integrated page navigation bar

In DataWindow .NET 1.5, you could enable paging in a Web DataWindow by setting the RowsPerPage property of the control and using the ScrollFirstPage, ScrollLastPage, ScrollPriorPage, and ScrollNextPage Web DataWindow client control methods.

DataWindow .NET provides an integrated Page Navigation Bar for the Web DataWindow to enable you to implement page navigation without any coding. The Page Navigation Bar displays at the bottom or top of the Web DataWindow or both, and has customizable page navigation buttons to enable users to page through the data in the Web DataWindow.

You can set the integrated Page Navigation Bar properties with the `PageNavigationBarSettings` property of the `WebDataWindowControl`.



### Navigator types

Use the `NavigatorType` property to set the type of the navigator to one of three main styles: `NextPrev`, `Numeric`, or `QuickGo`, or two combined styles: `NextPrevWithQuickGo` or `NumericWithQuickGo`.

You can specify characteristics of each of the three main styles with properties for each `NavigatorType`. For example, the following statement in a code-behind file specifies an image for the Next button in a `NextPrev` style navigator:

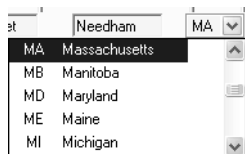
```
dw_1.PageNavigationBarSettings.NextPrevNavigator.NextPageImageUrl =
"PageNext.gif"
```

Display characteristics such as color, border, and font are set with the `PageNavigationBarStyle` class.

For more information, see “Page navigation bars” in the chapter on using Web DataWindows in the *Programmer’s Guide*.

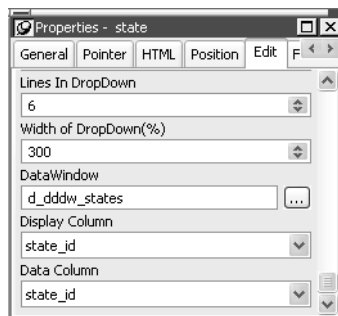
## New behavior for drop-down DataWindows in Web DataWindows

In Windows forms and in Web forms that use the HTML RenderFormat, when you tab to a column that uses the drop-down DataWindow edit style, you can use the arrow keys on the keyboard to change its value. If you click the column, the drop-down DataWindow displays so that you can scroll to a different value and click to select it.



Previously, clicking the column in a Web form displayed all the rows in the DataWindow. The new behavior is supported only in HTML Web DataWindows and in Internet Explorer.

You set the display properties for the column on the Edit page in the Properties view in the DataWindow painter. The Width of DropDown property sets the width of the drop-down display to a size that is a percentage of the width of the column. For example, 300 sets the display width to three times the column width.



The new behavior uses inline frames (iFrames), which might increase the volume of markup generated. For DataWindow objects that make heavy use of drop-down DataWindows, you might save bandwidth by using the previous behavior, in which the drop-down DataWindows are generated in HTML select elements. To do so, clear the Generate DDDW Frames check box on the Web Generation page with the Format to Configure option set to HTML/XHTML. You can view the generated source from each technique and save it to a file, then compare file sizes to determine which is best for your DataWindow objects.

## New SelectRow, IsSelected, and FindNextSelectedRow methods

The WebDataWindowControl SelectRow method enables you to highlight a row in the Web DataWindow. Use the IsSelected method to check whether a row is selected and the FindNextSelectedRow to find all selected rows in the Web DataWindow.

SelectRow and IsRowSelected are also provided as Web DataWindow client control methods.

## New SetRowFocusIndicator method

The WebDataWindowControl SetRowFocusIndicator method enables you to set the visual indicator and its location for the current row. In the client browser, when a row gains focus, the indicator set by the SetRowFocusIndicator method displays at the given location within the row. You can use the stock hand image or a rectangle, or use your own image.

## Web DataWindow rendering enhancements

GroupBoxes and Rectangles are now rendered in the Web DataWindow, but with some limitations.

### GroupBox

GroupBoxes cannot be rendered in Crosstab and Grid style DataWindows.

The following GroupBox properties are not supported: moveable, pointer, resizeable, slideleft, slideup, font.charset, font.width.

### Rectangle

Rectangles cannot be rendered in a Label DataWindow with any rendering format when the layer of the Rectangle is foreground, unless the height of the DataWindow control is set to a fixed value.

The following Rectangle properties are not supported: moveable, pointer, resizeable, slideleft, slideup, brush.hatch, pen.style.

## New WebResourceFile JavaScriptOption

The WebResourceFile enumeration value for the JavaScriptConfigurations JavaScriptOption property caches JavaScript files in the same way as the ExternalFile option, but the JavaScript functions are embedded in the *WebDataWindow.dll* as a Web resource, so that the URL references for the files are generated automatically and do not need to be set. You do not need to create the JavaScript files yourself.

For more information, see “Generating JavaScript for common management tasks” in the chapter on using Web DataWindows in the *Programmer’s Guide*.

## Using ADO DataSets as a DataWindow source

DataWindow .NET 2.0 supports the use of DataSets as the data source for a DataWindow object. It provides two runtime models.

Many .NET developers prefer to separate data access from data presentation and want to use the DataWindow for its presentation capabilities only. The data binding model allows you to do this. If you prefer to combine data access and presentation, you can use the retrieve and update model.

You can use the ADO DataSet option in the DataWindow wizard in DataWindow Designer to build a DataWindow object that uses a DataTable in a DataSet as the data source.

For more information, see “Using ADO DataSet” in the chapter on defining DataWindow objects in the DataWindow Designer *User’s Guide*, and “Using ADO DataSets as a DataWindow source” in the chapter on using DataWindow controls in the *Programmer’s Guide*.

## Indexer access to DataWindow .NET data

There are now two ways to access data values in a DataWindow control:

- SetItem and GetItem methods access values in specific rows and columns. For example, these statements set and get the name of the employee in the Primary buffer in row 4:

```
dw_1.SetItemString(4, "empname", "Phillips")  
  
Dim strname As String  
strname = dw_1.GetItemString(4, "empname")
```

- DataWindow data expressions use dot notation and can refer to single items, columns, blocks of data, selected data, or the whole DataWindow control. These statements are equivalent to the method calls in the previous example:

```
dwPrimary.PrimaryData(4, "empname") = "Phillips"  
  
Dim empinfo As Object  
Dim strname As String  
empinfo = dwPrimary.PrimaryData(4)  
strname = empInfo(2).ToString()
```

The returned empinfo Object is an array of the column values in row 4, and item 2 in the array is the employee's name.

For more information

For more information, see “Accessing data values using DataWindow data expressions” in the chapter on using DataWindow controls in the *Programmer's Guide*.

## TreeView DataWindow presentation style

The presentation style you select for a DataWindow object determines the format DataWindow Designer uses to display the DataWindow object in the Design view. DataWindow Designer includes a new DataWindow wizard that lets you create a DataWindow using a TreeView presentation style. With the TreeView presentation style, you can group hierarchical data and display the data in collapsed or expanded format.

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### **DataWindowControl only**

The TreeView DataWindow style cannot currently be used with the WebDataWindowControl.

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You use the TreeView DataWindow wizard to create a TreeView DataWindow object with one TreeView level. You add additional levels to the TreeView by selecting Rows>Create TreeView Level from the menu bar.

This sample TreeView DataWindow uses the department and employee tables in the EAS Demo database and has two TreeView levels. The first level is the department name. The second level is the city where each employee resides:

	Employee ID	First Name	Last Name	Status	Salary	Start Date	Health Insurance	Sex
+	Finance		Total Employees: 5					
-	Marketing		Total Employees: 4					
	Concord							
	1576	Scott	Evans	Active	\$68,940.00	12/30/1999	<input checked="" type="checkbox"/> Health Insurance	<input type="radio"/> M <input type="radio"/> F
	207	Jane	Francis	Active	\$53,870.00	08/04/1998	<input checked="" type="checkbox"/> Health Insurance	<input type="radio"/> M <input type="radio"/> F
	Needham							
	Waltham							
-	R & D		Total Employees: 13					
	Belmont							
	Burlington							
	453	Andrew	Rabkin	Active	\$64,500.00	12/13/1992	<input checked="" type="checkbox"/> Health Insurance	<input type="radio"/> M <input type="radio"/> F
	316	Lynn	Pastor	Active	\$74,500.00	10/24/1992	<input checked="" type="checkbox"/> Health Insurance	<input type="radio"/> M <input type="radio"/> F
	Concord							
	445	Kim	Lull	Active	\$87,900.00	12/13/1992	<input checked="" type="checkbox"/> Health Insurance	<input type="radio"/> M <input type="radio"/> F
	Houston							
	Lexington							
	529	Dorothy	Sullivan	Active	\$67,890.00	08/03/1993	<input checked="" type="checkbox"/> Health Insurance	<input type="radio"/> M <input type="radio"/> F
	Milton							
	Natick							
	Waltham							
	Wellesley							
+	Sales		Total Employees: 6					
+	Shipping		Total Employees: 1					

When you use a TreeView DataWindow, you click the state icon to expand or collapse a node. The state icon is a plus (+) sign when the node is collapsed and a minus (-) sign when it is expanded. When a node is expanded, connecting lines display by default to show more detail and how the parent data connects with child data. When a node is collapsed, only the parent data displays and the detail data does not display.

For more information

For more information, see the chapter on “Working with TreeViews” in the DataWindow Designer *User’s Guide*.

## Decimal support in DataWindow expressions

Decimal datatypes are supported in the DataWindow, but in previous releases of DataWindow .NET, decimal values were converted to doubles in DataWindow expressions. DataWindow .NET 2.0 adds support for decimal values in DataWindow expressions and new DataWindow expression functions to support decimal values. You can also use decimal values as retrieval arguments. The decimal datatype supports up to 28 digits.



The following arithmetic operators now return a decimal value if both operands have a datatype of decimal:

Operator	Meaning	Example
+	Addition	Subtotal + Tax
-	Subtraction	Price - Discount
*	Multiplication	Quantity*Price
/	Division	Discount/Price

If either operand is not a decimal, the returned value is converted to a double datatype. The exponentiation operator (^) continues to return a double.

Relational operators that operate on numeric values, including =, >, <, <>, >=, and <=, can take decimal operands. The precision of the decimal operand is maintained in comparisons.

The following functions return a decimal datatype if their arguments are decimals: Sum, CumulativeSum, Avg, Median, First, Last, Max, Min, Large, Small, Var, VarP, Mod, Mode, Abs, Case, If.

The following new functions return a decimal result instead of a double: CrosstabAvgDec, CrosstabMaxDec, CrosstabMinDec, and CrosstabSumDec.

The new Dec function converts a constant string to a decimal. You can also append the letter D in upper or lowercase to identify a number as a decimal constant in a DataWindow expression. For example, 2.0d and 123.456789012345678901D are treated as decimals.

Decimal and Decimal array have been added to the list of types in the Specify Retrieval Arguments dialog box.

For descriptions of the new functions, see the *DataWindow Object Reference*.

## Drop-down calendar DataWindow option

The drop-down calendar DataWindow option is now available for use on any DataWindow column with an EditMask and a Date, DateTime, or TimeStamp datatype. In DataWindow .NET 1.5, the option was available only for Web DataWindows. The DDCalendar EditMask property option allows for separate selections of the calendar month, year, and date. This option can be set in a check box on the Edit tab of the DataWindow painter Properties view when a column with the EditMask edit style is selected. It can also be set in code, as in this example for the birth\_date column:

```
dw_1.Modify("birth_date.EditMask.DDCalendar='Yes'")
```

You can specify the format for the date and time in the DataWindow painter or in code:

```
[Visual Basic]
CType(strtdt.EditStyle, EditMask).Mask = "yyyy-mm-dd"

[C#]
((EditMask) strtdt.EditStyle).Mask = "yyyy-mm-dd";
```

The range for years in Windows applications is 1753 to 3000. You can set the following properties to control the display of the calendar in a script or on the Other page in the Properties view for the column:

Painter option	Property
Drop Align Right	Column.Editmask.ddcal_alignright
CalendarBackColor	Column.Editmask.ddcal_backcolor
CalendarTextColor	Column.Editmask.ddcal_textcolor
CalendarTitleBackColor	Column.Editmask.ddcal_titlebackcolor
CalendarTitleTextColor	Column.Editmask.ddcal_titletextcolor
CalendarTrailingTextColor	Column.Editmask.ddcal_trailingtextcolor

To make sure that dates selected with the drop-down calendar option are displayed with the desired edit mask for Web DataWindows, you should specify that the Client Formatting option be included with the static JavaScript generated and deployed for the DataWindow. To conserve bandwidth, JavaScript for client formatting is not included by default. To include this script, you can select the Client Formatting check box on the Web Generation page of the DataWindow Properties view. If you do not include script for client formatting, the drop-down calendar uses a default edit mask to display the column data based on the client computer's default localization settings.

To navigate in the drop-down calendar, a user can:

- Click the arrows in the top corners to move from month to month
- Click the month to display a list of months, then click a month to select it
- Click the year to display a spin control, then use the spin control's arrows to select a year
- Click a date to select the date and close the calendar
- Press the Esc key to close the calendar without changing the selection

For more information, see the description of EditMask.property in the *DataWindow Object Reference* or the online Help.

## Autosize height property on all DataWindow bands

In DataWindow .NET 2.0, the Height.Autosize property can be set on any band of a DataWindow. In earlier DataWindow .NET releases, this property was available only for the Detail band.

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### Restrictions on the Height.Autosize property

- The Height.Autosize property is not supported on DataWindows with the Graph or Label presentation styles.
- Nested report overflow to the next page is supported in Detail bands only.
- Bands cannot be autosized if autosizing would preclude the display of at least one Detail band row per page.

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Selecting the Height.Autosize property sets the minimum height for the band, allowing it to display the entire content of a picture or a nested report. You can select this property on the General tab of the Properties view for a DataWindow band. At runtime you can modify the Height.Autosize property for a DataWindow band in code:

```
dw_2.modify ("DataWindow.header.height.autosize=yes")
dw_2.modify ("DataWindow.footer.height.autosize=no")
```

For more information, see the description of Bandname.property in the *DataWindow Object Reference* or the online Help.

## New property to suppress group headers on page breaks

DataWindow .NET 2.0 includes a new property that lets you suppress the group headers that display in a grouped DataWindow object after a page break. You can set this property on group header bands only.

When a group listing straddles a page break, all group headers for which you set this property are suppressed. The suppressed headers do not display at the top of the page. When all group headers are suppressed, the group displays as a continuous listing across the straddled pages. However, if the page break coincides with the start of a new group, only headers above the new group header are suppressed.

You enable the suppress group header property by selecting the Suppress Group Header check box in the Properties view for a group header band. You can verify the property setting and modify it at runtime with the Describe and Modify methods:

```
s = dw_1.describe("datawindow.header.1.suppress")
dw_1.modify("datawindow.header.1.suppress=no")
```

For more information, see the description of `Bandname.property` in the *DataWindow Object Reference* or the online Help.

## New property to hide blue outline in Print Preview

By default, a blue line displays in Print Preview mode to show the location of the margins. You can hide this line by clearing the Print Preview Shows Outline check box on the Print Specifications page in the Properties view in the DataWindow painter.

For more information, see the description of `Print.Preview.property` in the *DataWindow Object Reference* or the online Help.

## Database connectivity enhancements

This release includes the following additional enhancements:

- ADO.NET support for Sybase Adaptive Server and Oracle
- Adaptive Server Enterprise 15 support
- Support for Microsoft SQL Server 2005

## ADO.NET support for Sybase Adaptive Server and Oracle

DataWindow .NET 2.0 provides native access to Adaptive Server Enterprise and Oracle using ADO.NET. You can connect to a database using the ADO.NET data providers and perform operations using native syntax. You can create a new connection or share an existing connection object for transaction management.

DataWindow .NET now supports the following ADO.NET namespaces and data providers:

Data Provider	Namespace
.NET Framework Data Provider for OLE DB	System.Data.OleDb
.NET Framework Data Provider for SQL Server	System.Data.SqlClient
Oracle Data Provider for .NET (ODP.NET)	Oracle.DataAccess.Client
Sybase ADO.NET Data Provider for Adaptive Server Enterprise (ASE)	Sybase.Data.AseClient

Support is provided in the *PBADO105.DLL* file and the *Sybase.PowerBuilder.Db.dll* and *Sybase.PowerBuilder.DbExt.dll* .NET assemblies. The ADO.NET drivers distributed with DataWindow .NET are built with a specific version of the ADO.NET assemblies provided by Sybase and Oracle. You need to deploy *Sybase.PowerBuilder.DbExt.dll* with your application if you are using Oracle 10g or Adaptive Server 15 or later.

For more information, see Chapter 4, “Using the ADO.NET Interface,” in *Connecting to Your Database*.

## Adaptive Server Enterprise 15 support

The native interface for Adaptive Server® Enterprise (*pbsyc105.dll*) can be used with Adaptive Server version 15 and has been enhanced to support several new features in version 15 of Adaptive Server.

### Scrollable cursors

Adaptive Server allows both scrollable and nonscrollable cursors, which can be either semi-sensitive or insensitive. “Scrollable” means that you can scroll through the cursor result set by fetching any, or many, rows, rather than one row at a time; you can also scan the result set repeatedly. The `CursorType` database parameter lets you specify the type of cursor to use. For more information, see `CursorType` in the DataWindow Designer online Help.

### Unitext support

DataWindow .NET supports the variable-length `UniText` datatype, which can hold up to 1,073,741,823 Unicode characters (2,147,483,646 bytes). You can use `UniText` anywhere you use the `text` datatype, with the same semantics. `Unitext` columns are stored in UTF-16 encoding, regardless of the Adaptive Server default character set. The `Unitext` datatype uses UTF-16 encoding to support Unicode text and maps to the PowerScript string datatype.

### Bigint support

DataWindow .NET supports the 64-bit integer signed `BigInt` datatype, which maps to the PowerScript `longlong` datatype, and the unsigned `BigInt` datatype, which maps to the PowerScript `decimal` datatype.

Unsigned integer datatypes

In addition to the unsigned BigInt datatype, DataWindow .NET also supports two other unsigned integer datatypes introduced in Adaptive Server 15.0. In this release, the unsigned integer datatypes are supported when connecting to Adaptive Server using the SYC and JDBC drivers.

These datatypes allow you to extend the range of the positive numbers for the existing integer types without increasing the required storage size. That is, the signed versions of these datatypes extend both in the negative direction and the positive direction. However, the unsigned versions extend only in the positive direction. Table 1-2 describes the range of the signed and unsigned versions of these datatypes.

**Table 1: Ranges for signed and unsigned integer datatypes**

Datatype	Range of signed datatypes	Range of unsigned datatypes
BigInt	Integers between $-2^{63}$ and $2^{63} - 1$ (from -9,223,372,036,854,775,808 to +9,223,372,036,854,775,807, inclusive)	Integers between 0 and 18,446,744,073,709,551,615
Int	Integers between $-2^{31}$ and $2^{31} - 1$ (-2,147,483,648 and 2,147,483,647), inclusive	Integers between 0 and 4,294,967,295
SmallInt	Integers between $-2^{15}$ and $2^{15} - 1$ (-32,768 and 32,767), inclusive	Integers between 0 and 65535

Using Adaptive Server 15

To use Adaptive Server 15, you must install Open Client version 15 on the client computer and set the Release parameter to 15 to establish an Open Client 15 client context. You can specify the Release parameter on the Connection page of the Database Profile Setup dialog box for Adaptive Server or in code:

```
SQLCA.DBParm="Release='15' "
```

The Open Client 15 client context can be used with Adaptive Server 11.x, 12.x, and 15.x.

In DataWindow .NET 2.0, the SYC driver links to the appropriate version of the client libraries dynamically and the Open Client context is released when all connections are closed. If you open multiple connections, the first Open Client context established is used for all connections. If you need to establish a new Open Client context in the development environment, close all open connections and establish a new connection with the Release parameter set to the context you require.

## Support for Microsoft SQL Server 2005

The DataWindow .NET 2.0 ODBC, OLE DB, and ADO.NET drivers have been tested with Microsoft SQL Server 2005. No new features in SQL Server 2005 are supported.