

- **Reporting Services provides a number of global or built-in fields you can use in your reports:**

ExecutionTime	The date and time the report was executed. (This is not the time it takes for the report to run, but rather, the time at which the report was run.)
Language	The language the report is output in.
OverallPageNumber	The current page number within the entire report.
OverallTotalPages	The total number of pages in the entire report.
PageName	The name of the current page in the report.
PageNumber	The current page number since the last page number reset.
RenderFormat.IsInteractive	Indicates whether the rendering format requested by the user supports interactive features.
RenderFormat.Name	The name of the rendering format requested by the user to render the report.
ReportFolder	The report server folder the report resides in. ReportFolder is blank in the development environment.
ReportName	The name of the report.
ReportServerUrl	The Uniform Resource Locator (URL) of the Internet server hosting the report.
TotalPages	The total number of pages until the next page number reset. If there are no page number resets in the report, this will be equal to OverallTotalPages.
UserID	The network user name of the person executing the report.

- **Reporting Services Aggregate Functions**

Avg()	Calculates the average of the values in a scope.
Count()	Counts the number of values in a scope.
CountDistinct()	Counts the number of unique values in a scope.
CountRows()	Counts the number of rows in a scope.
First()	Returns the first value in the scope.
Last()	Returns the last value in the scope.
Max()	Returns the maximum value in the scope.
Min()	Returns the minimum value in the scope.
StDev()	Calculates the standard deviation of the values in the scope.
StDevP()	Calculates the population standard deviation of the values in the scope.
Sum()	Calculates the sum of the values in the scope.
Var()	Calculates the variance of the values in the scope.
VarP()	Calculates the population variance of the values in the scope.
RowNumber()	Returns the number of the current row, starting at 1 and counting upward. (Found under Common Functions   Miscellaneous.)
RunningValue()	Returns the running sum of the values.

- **Standard Numeric Format Strings**

**Table Standard Numeric Format Strings**

<b>Format Specifier</b>	<b>Name</b>	<b>Description</b>	<b>Example</b>
<b>C or c</b>	Currency	The number is converted to a string that represents a currency amount. The conversion is controlled by the <b>Language</b> property. The precision specifier indicates the desired number of decimal places. If omitted, the default currency precision is controlled by the <b>Language</b> property.	Value=1234.567 Language=default Output=\$1,234.57 Language=en-GB Output=[bp1,234.57
<b>D or d</b>	Decimal	This format is supported for integer types only. The number is converted to a string of decimal digits (0–9).	Value=1234 Output=1234
<b>E or e</b>	Scientific (exponential)	The number is converted to a string of the form <b>d.ddd...E±ddd</b> or <b>d.ddd...e±ddd</b> . One digit always precedes the decimal point, a minimum of three digits follow the <b>±</b> sign, and the case determines the prefix of the exponent ( <b>E</b> or an <b>e</b> ). If the precision specifier is omitted, a default of <b>E6</b> is used.	Value=1234.567 Output=1.234567+E003
<b>F or f</b>	Fixed-point	The number is converted to a string of the form <b>ddd.ddd...</b> . If the precision specifier is omitted, the default numeric precision given by the <b>Language</b> property is used.	Value=1234.567 Output=1234.57
<b>G or g</b>	General	The number is converted to the most compact of either fixed-point or scientific notation, depending on the type of the number and whether a precision specifier is present. If the precision specifier is omitted or zero, the type of the number determines the default precision.	Value=1234.567 Output=1234.567
<b>N or n</b>	Number	The number is converted to a string of the form <b>d,ddd,ddd.ddd...</b> . Thousand separators are inserted between each group of three digits to the left of the decimal point. If the precision specifier is omitted, the precision is guided by the <b>Language</b> property.	Value=1234.567 Output=1,234.567
<b>P or p</b>	Percent	The number is converted to a string where the value is multiplied by 100 and presented with a percentage sign. If the precision specifier is omitted, the precision is guided by the <b>Language</b> property.	Value=123.4567 Output=12,345.67%
<b>R or r</b>	Round-trip	The round-trip specifier guarantees that a numeric value converted to a string will be parsed back into the same numeric value. SSRS examines data for the best output to accomplish this.	Value=1234.567 Output=1234.567
<b>X or x</b>	Hexadecimal	The number is converted to a string of hexadecimal	Value=1234

**Table Standard Numeric Format Strings**

Format Specifier	Name	Description	Example
		digits. <b>X</b> produces uppercase (ABCDEF) for digits greater than 9; <b>x</b> produces lowercase (abcdef). Decimal number 123 is correspondingly converted to hexadecimal 7b. This format is supported for integer types only.	Output=4D2

- **Standard Date/Time Format Strings**

A standard date/time format string consists of a single character format specifier character

**Table Standard Date/Time Format Strings**

Format Specifier	Name/Note	Output of
<b>d</b>	Short date pattern.	02/01/2003
<b>D</b>	Long date pattern.	02 January 2003
<b>t</b>	Short time pattern.	23:59
<b>T</b>	Long time pattern.	23:59:11
<b>f</b>	Full date/time pattern (short time).	02 January 2003 23:59
<b>F</b>	Full date/time pattern (long time).	02 January 2003 23:59:11
<b>g</b>	General date/time pattern (short time).	02/01/2003 23:59
<b>G</b>	General date/time pattern (long time).	02/01/2003 23:59:11
<b>M or m</b>	Month day pattern.	02 January
<b>R or r</b>	The RFC 1123 pattern is the same as the custom pattern <code>ddd, dd MMM yyyy HH:mm:ss G\MT</code> .	Thu, 02 Jan 2003 23:59:11 GMT
<b>s</b>	Sortable date/time pattern; conforms to ISO 8601 and is the same as the custom pattern <code>yyyy-MM-ddTHH:mm:ss</code> .	2003-01-02T23:59:11
<b>u</b>	Universal storable date/time pattern; the same as the custom pattern <code>yyyy-MM-dd HH:mm:ssZ</code> . Does not do time zone conversion.	2003-01-02 23:59:11Z

**Table Standard Date/Time Format Strings**

Format Specifier	Name/Note	Output of
U	Universal sortable date/time pattern; displays universal, rather than local time.	02 January 2003 05:59:11
Y or y	Year month pattern	January 2003
Any other single character	Unknown specifier. SSRS will use the default.	02/01/2003 23:59:11

- **Custom Date/Time Formatting**

**Table 15.6** describes the custom format specifiers and shows examples of output. Note how the percent sign (%) converts standard to custom specifiers. For example, `d` specifies short date pattern, but `%d` specifies day of the month. When `%` is used with a character not reserved for custom formatting, the character displayed is literal. For example, a format string `%n` results in the output `n`.

**Table 15.6. Custom Date/Time Formatting**

Format Specifier	Description	Output of
<code>%d</code>	Displays the current day of the month, measured as a number between 1 and 31, inclusive. Single digit only (1–9) is displayed as a single digit.	2
<code>dd</code>	Displays the current day of the month, measured as a number between 1 and 31, inclusive. Single digit only (1–9) is prefixed with a preceding 0 (01–09).	02
<code>ddd</code>	Displays the abbreviated name of the day specified.	Thu
<code>dddd</code> (plus any number of additional <code>d</code> characters)	Displays the full name of the day specified.	Thursday
<code>f</code> to <code>fffffff</code>	Displays fractions of seconds represented in one to seven digits.	1 to 1500000
<code>g</code> or <code>gg</code> (or any number of additional <code>g</code> characters)	Displays the era (A.D., for example).	A.D.

**Table 15.6. Custom Date/Time Formatting**

Format Specifier	Description	Output of
%h	Displays the hour for the specified value in 12-hour format (undistinguished A.M./P.M., range 1–12). No rounding occurs; that is, a value of 4:45 returns 4.	11
hh (plus any number of additional hcharacters)	Same as above, but a single-digit hour (1–9) is preceded with 0 (01–09).	11
%H	Displays the hour for the specified value in 24-hour format (the range 0–23). The hour represents whole hours passed since midnight (displayed as 0). If the hour is a single digit (0–9), it is displayed as a single digit.	23
HH (plus any number of additional Hcharacters)	Same as above, but a single-digit hour (1–9) is preceded with 0 (01–09).	23
%m	Displays the minute for the specified value in the range 0 to 59. The minute represents whole minutes passed since the last hour. If the minute is a single digit (0–9), it is displayed as a single digit.	59
mm (plus any number of additional mcharacters)	Same as above. A single-digit minute (0–9) is formatted with a preceding 0 (01–09).	59
%M	Displays the month, measured as a number between 1 and 12, 1 inclusive. If the month is a single digit (1–9), it is displayed as a single digit.	1
MM	Same as above. A single-digit month (1–9) is formatted with a preceding 0 (01–09).	01
MMM	Displays the abbreviated name of the month for the specified value.	Jan
MMMM	Displays the full name of the month for the specified value.	January
%s	Displays the seconds for the specified value in the range 0-59. The second represents whole seconds passed since the last minute. If the second is a single digit (0-9), it is displayed as a single digit only.	11
ss (plus any number of additional scharacters)	Same as above. A single-digit second (0–9) is formatted with a preceding 0 (01–09).	11

**Table 15.6. Custom Date/Time Formatting**

Format Specifier	Description	Output of
%t	Displays the first character of the A.M./P.M. designator for the specified value.	P
tt (plus any number of additional tcharacters)	Displays the A.M./P.M. designator for the specified value.	PM
%y	Displays the year for the specified value as a maximum two-digit number. The first two digits of the year are omitted. If the year is a single digit (1–9), it is displayed as a single digit.	3
yy	Same as above. A single-digit year (1–9) is formatted with a preceding 0 (01–09).	03
yyyy	Displays the year for the specified value, including the century. If the year is represented with fewer than four digits, 0s are added to the left to display four digits.	2003
%z	Displays the time zone offset for the system's current time zone in whole hours only. The offset is always displayed with a leading sign, which indicates hours ahead of Greenwich mean time (+) or behind Greenwich mean time (-). The range of values is -12 to +13. Value is affected by daylight savings time.	-6 Note: -6 offset is for central standard time.
zz	Same as above. A single digit is formatted with a preceding 0 (00–09).	-06
zzz (plus any number of additional zcharacters)	Same as above, but displays hours and minutes. The range of values is -12:00 to +13:00. Single-digit offset (0–9) is formatted with a preceding 0 (00–09).	-06:00
:	Displays the time separator.	
/	Displays the date separator.	
" " or ''	Displays the literal value of a string enclosed.	
\	Displays the next character as a literal. Cannot be used to create an escape sequence.	

- **Pagination**

Pagination support differs for each of the rendering extensions. As a result you would see a different visual pagination outcome, depending on the extension you use to render a report. For example, PDF and Image formats are page oriented and enable you to precisely set page properties. HTML, Word, and Microsoft Excel are not page oriented. CSV and XML do not support pagination at all and ignore pagination properties.

If you see that a report does not render across pages as you intended, check page settings to ensure that everything can fit on a page, considering page size, margins, report body size, and the number of columns.

SSRS provides several properties to support pagination:

- **PageBreakAtEnd**
- **PageBreakAtStart**
- **PageHeight** and **PageWidth**: Physical Page Sizing

These properties are used to control physical page (paper) sizing for PDF- and Image-rendering extensions. PDF- and Image-rendering extensions insert page breaks based on the value of those properties. These properties accept strings in the format **{FloatingNumber}.{unit designator}**, where a unit designator is a size measurement and could be **in**, **mm**, **cm**, **pt**, or **pc**.

A rendering extension will insert a hard page break based on the values specified by **PageHeight** and **PageWidth**. Keep in mind that rendering extensions do not automatically adjust paper size based on a size of a report's body when the report's body grows beyond page boundaries.

**PageHeight** and **PageWidth** do not allow expressions. In cases where you have to pass the size of a page to a rendering extension, you pass device information settings (or parameters to a rendering extension). For example, to pass a page size to Image-rendering extensions, you use the following URL command to change page size to 11×9 inches:

- **InteractiveHeight** and **InteractiveWidth**

These properties dictate logical page sizing for the HTML-, Word-, and Excel-rendering extensions.

The HTML rendering extension accepts interactive page size, creates page breaks, and allows navigating through pages, using a toolbar.

Word- and Excel-rendering extensions insert “soft” page breaks into the resulting documents. When you render a spreadsheet and want to check the location of the page breaks, you can display page breaks in Excel by selecting View, Page Break Preview.

HTML, Word, and Excel pages are based on approximate page size and provide less-precise page breaks than page-oriented formats (IMAGE and PDF). **InteractiveHeight** and **InteractiveWidth** accept strings in the format **{FloatingNumber}.{unit designator}**, where a unit designator is a size measurement and could be **in**, **mm**, **cm**, **pt**, or **pc**.



You can disable soft page breaks by setting `InteractiveHeight` to `0`; however, if the report contains a large amount of data, this might negatively impact perceived performance. When `InteractiveHeight = 0`, the user can't see a report until all rendering completes. When `InteractiveHeight` is not zero, a user can access each page after the page's rendering completes.

- `RepeatOnNewPage`, `KeepTogether`, `KeepWithGroup`, and `HideIfNoRows`

These properties are accessible in the Advanced mode of the grouping pane and enable you to do the following:

**`RepeatOnNewPage`:** Repeat the group's row header on every page where the group has at least one row.

**`KeepTogether`:** Force SSRS to attempt keeping the entire group together on a page, instead of inserting a page break between. Not supported for column groups.

**`KeepWithGroup`:** Help to keep the group's header and footer together on the same page, instead of orphaning to another page. The property can have one of the following values:

**`Before`:** Keep this static member (mostly footer) with the previous group in a grouping pane. Note gray static members in the grouping pane.

**`After`:** Keep this static member (mostly header) with the previous group in a grouping pane.

**`None`:** Let SSRS decide whether to use `Before` or `After`.

**`HideIfNoRows`:** Hide a static element of a group when the group has no data. This property overrides other `Visibility` properties.

- `PageBreak`

The `PageBreak` property replaces the `pageBreakAtEnd` and `PageBreakAtStart` properties from the previous version of SSRS. The `PageBreak` property is available for Rectangle, data regions (Tablix, Chart, Gauge), or a group within a data region. `PageBreak` can have the following values:

- **`Start`:** Insert a page break before.
- **`End`:** Insert a page break after.
- **`StartAndEnd`:** Insert a page break before and after.
- **`Between`:** Insert a page break between instances of a group. A group expression has the same value for all members of an instance.

All values, except `Between`, are allowed for Tablix, Gauge, Chart, and Rectangle. `Between` is allowed for a group only.

SSRS ignores page breaks on column groups.



- PageSectionType

PageSectionType is a parent type of the PageHeader and PageFooter elements. PageSectionType is in the RDL's schema, but you will not find it in your report's RDL; instead, you would see PageHeader and PageFooter in the report's RDL.

You can set page breaks using Group.PageBreak property on the Properties window or using the Group Properties dialog.

To access the Group Properties dialog, right-click a group in the Row Groups pane and select Group Properties from the context menu. Use the Page Breaks tab to change pagination properties. You can set the Between value from this tab.

To use the Properties window, click a group in the Row Groups pane and find the pageBreak property under the parent property Group.

To dynamically adjust the number of rows on a page, a report developer can pass a report parameter and add the following group expression:

```
=System.Math.Floor(LineNumber(Nothing)/(Parameters!RowsPerPage.Value))
```

**Pagination might improve perceived performance of a report; the first page will be rendered and presented to a user while SSRS continues rendering the remaining pages.**