

# JACKIE'S Forum

## Date Handling with DB2 Web Query



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**DB2** Web Query includes very powerful date manipulating and formatting capabilities. To access this functionality DB2 Web Query needs to know that a field is a date. If you are using DB2 DATE fields on the System i that's great. I would hazard a guess that the majority of dates found in DB2 databases on System i are not in DATE format but more likely are character or numeric fields, 6 or 8 long. In some cases the dates may consist of individual fields representing the year, month, day and possibly the century.

Luckily there is an easy way to let DB2 Web Query know that these fields actually contain dates. You need to tell Web Query that you want to use a field as a date and what format the date is stored in. For example, if your alpha 8 field contained the value 20080621 you would tell Web Query that the date format was YYMD. The format D refers to a two digit day (01 – 31), M refers to the month (01 – 12), Y refers to a two digit year and YY refers to a 4 digit year i.e. 2008. This field is now known as a legacy date field.

DB2 Web Query can differentiate between how data is stored and how users would like to use that data. By default the Actual and Usage attributes are the same. In the case of legacy dates the Actual attribute describes the way the field is physically stored. The Usage attribute which defines the way we want to use a field is the attribute we want to modify. To edit DB2 Web Query's metadata you will need one copy of DB2 Web Query Developer Workbench. One of Developer Workbench's many features is the ability to modify and enhance DB2 generated metadata. In the example shown here, the ORDDATE field is stored as an A8 or alpha 8 field. This is also the default usage. Using the synonym editor we simply modify the Usage attribute from A8 to A8YYMD. This identifies ORDDATE as a date field and also tells the system that the field contains dates which look like "20080621".

Attribute	Value
- General	
FIELDNAME	ORDDATE
ALIAS	ORDDATE
MISSING	<input checked="" type="checkbox"/>
TITLE	
ACTUAL	A8
Type	Alpha fixed in characters
Length	8
USAGE	A8YYMD
Type	Date
Date Components	Three-part: YYMD, MDYY, DMY
Date Order	DMYY - 21/08/2004
Year	YY - 4 digit year - 2004
Month	M - 2 digit month

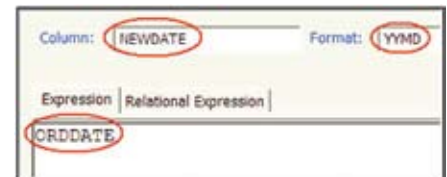
If your date was stored as a numeric field (packed or zoned decimal) 6,0 with a two digit year, you would specify a Usage attribute of integer 6 long by specifying I6YMD. If you store your dates as separate numeric fields you can combine them into one field using a math formula similar to Year \* 10,000 + Month \* 100 + Day. For alphanumeric fields you would use the concatenate function to combine the Year, Month and Day into a single field.

A true DB2 DATE field is called a standard or a smart date field. DB2 Web Query internally stores these dates as the offset from December 31, 1900. Storing the dates as consecutive integers makes many of the date math functions very easy to implement. For instance with smart dates you have automatic sorting. If you want to do day level arithmetic that is also very easy. For example ORDDATE + 14 equals a date two weeks in the future. SHIPDATE - ORDDATE will give you the number of days between the shipping and ordering dates.

Both legacy and standard or smart dates support a variety of date output formatting on reports. Once the system knows that "20080621" is a date, using the MTDYY formatting option will print your date as "JUN 21, 2008", wrDtrMYY will display "Saturday, 21 June 2008" and YYQ displays your date as "2008 Q2". See the date appendix in the "Getting Started with DB2 Web Query" redbook for details on date formatting.

Although both legacy dates and standard dates have similar formatting capabilities they have different capabilities when it comes to using functions and manipulating dates. For example, legacy dates need to use system functions or subroutines to add or subtract dates. There are many advanced functions available for smart dates. For example the function DATEMOV only works on smart dates. It allows you to calculate a significant date relative to an input date such as the beginning or end of the month or the quarter or the date of the next week day, etc.

Once you have a legacy date defined to DB2 Web Query it is a simple matter to create a new field that is a smart date. In the metadata you would create a virtual column where the format is YYMD and the expression is the name of the legacy date field.



If you have installed DB2 Web Query and have not ordered the Developer Workbench tool you will be pleased to know that IBM has recently made this software available for download with a 70 day evaluation period. If you go to the main DB2 Web Query home page [www.ibm.com/systems/i/db2/webquery](http://www.ibm.com/systems/i/db2/webquery) you should see a link on the right hand side to download Developer Workbench. Try it and let me know your thoughts—and have a great summer!

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