

# *NatQuery*

## **User-Defined Array Variables**

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## Overview

In previous versions of NatQuery, it was only possible to either output an array of recurring fields directly from a source file, or it was possible to sum all of the occurrences of an array into a new single user-defined variable; it was not possible however to output a user-defined array that was based on a source file recurring field that then had calculations performed on each element of that array.

In response to a user request, NatQuery 5.3.0 has been enhanced so that an array variable can be created such that each element of a source recurring field can have a calculation performed on it with the result then being placed into a corresponding element in the user-defined variable array.

For example; assume that an ADABAS source file has a Multi-Value Field which represents a fictitious field called Activity-Date (D), and 10 occurrences are to be handled. With the release of NatQuery 5.3.0, it is now possible to create an output variable called NEW-DATE (D/10), which takes each individual element of the source array, performs a calculation on that element (say by adding 30 days to it), with the new value then being placed into the corresponding occurrence of the NEW-DATE array variable.

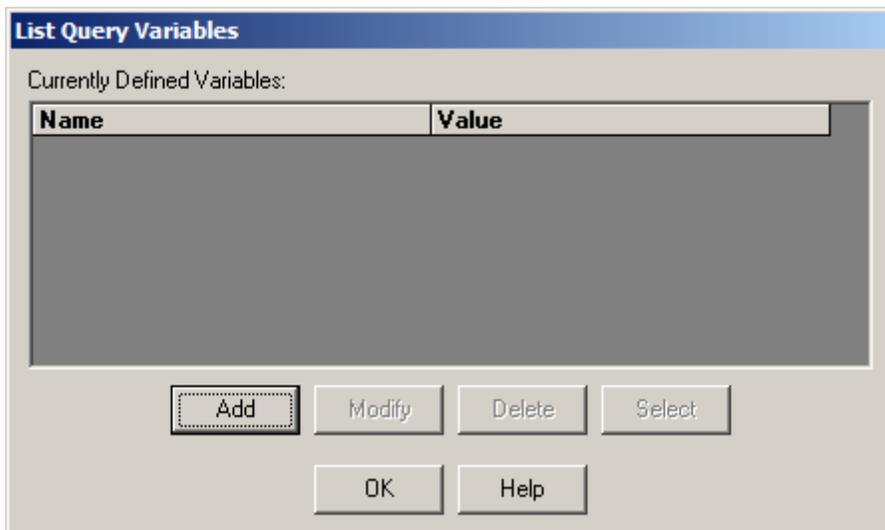
## Creating a User-Defined Array Variable

To create a user-defined Variable Array, it is expected that the user will want to utilize an existing ADABAS recurring field and then perform a calculation against each individual element of that source array to result in a new array that contains the results of that calculation.

As an example, let us assume we have a file called BASIC-TESTFILE, with this file containing a recurring field that represents a date (D) field, with this field arbitrarily being called DATE-IN-PE-1. What the user desires is to extract the field DATE-IN-PE-1 and have a calculation performed on each element of the array to create a new array which contains an array of dates that has 30 days added to each occurrence of DATE-IN-PE-1.

To begin, the base query is created, and for simplicity the only fields being extracted are the \*ISN of the source record and the DATE-IN-PE-1 recurring field. It is important to note at this point that it is NOT necessary to output the source recurring field, the recurring field itself only needs to be referenced in definition of the array variable itself – but for the purpose of showing the “before and after”, the source recurring field of DATE-IN-PE-1 is being referenced for output.

The user would then click the Variables icon, or would otherwise click the Edit Main Menu item, and then click the Variables sub-menu item. Either action would invoke the List Query Variables window, which in NatQuery 5.3.0 looks like this:



The user would then click the Add button, which will invoke the Define Query Variable window which will look similar to the following:

The screenshot shows a dialog box titled "Define Query Variable". It has a "Name:" text box containing "VARIABLE-01". Below it is a checked checkbox labeled "Include with extracted fields". There are two sections: "Format and Length" with "Format:" and "Length:" dropdown menus, and "Type and Value" with radio buttons for "Redefinition", "Constant", "Expression", "Dynamic", and "Compress". A "Define Value" button is centered below the radio buttons. At the bottom is a "Current Value of Variable" text box with scroll bars. At the very bottom are "OK", "Cancel", and "Help" buttons.

When this window is invoked with a new variable, NatQuery will build a default Variable name, in this case “VARIABLE-01”.

To continue, the user would do the following:

1. **Change the Variable Name**

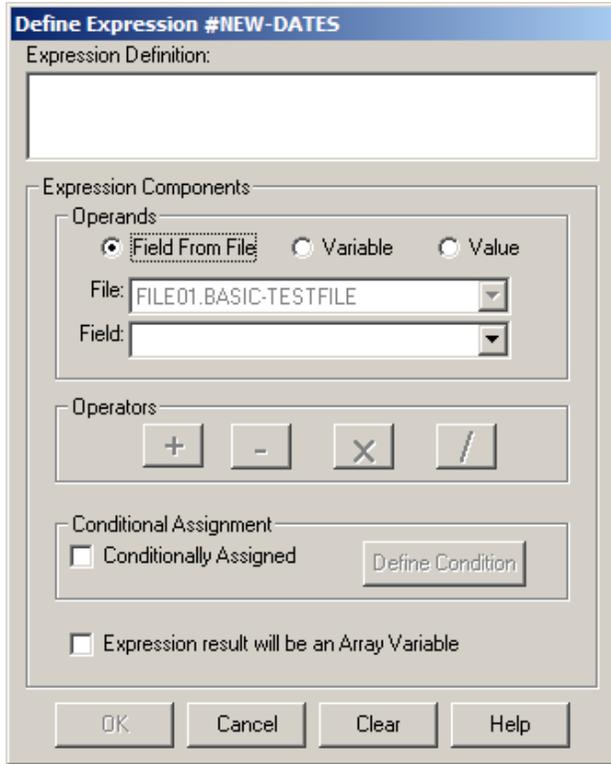
The user over-types the “VARIABLE-01” **Name** field with the text “NEW-DATES”

2. **Set Format**

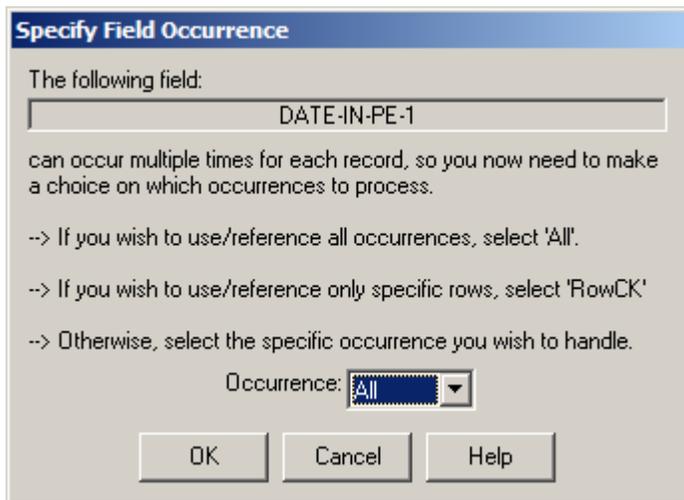
Since the user is beginning with a Date (D) field and will need to end with one, the Format is set to “D – Date”. When this value is selected, the Length is automatically set to 6 (which is the internal length of a Date (D) field to ADABAS).

3. **Type**

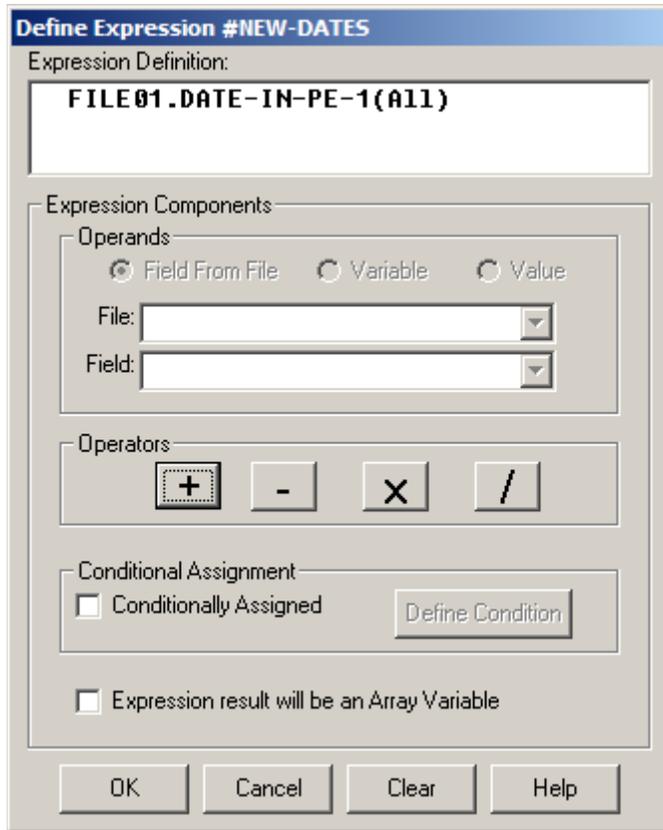
Since the user wishes to perform a calculation on the DATE-IN-PE-1 recurring fields, the user sets the Type radio button to be “Expression”, and then clicks the “Define Value” button. This will invoke the Define Expression #NEW-DATES window as seen below.



- When the Define Expression #NEW-DATES window is displayed, the **Operands** portion defaults to select the “Field From File” radio button. As the user wants to start the Expression creation with a the field DATE-IN-PE-1 from the only file selected to be extracted (in this case FILE01.BASIC-TESTFILE) the user can immediately go to the Field drop down and then find and select the field DATE-IN-PE-1. Clicking this field will invoke the Specify Field Occurrence window, which in NatQuery 5.3.0 will look similar to the following:



Since the user wishes to perform calculations on all occurrences, the user would select “All” from the Occurrence drop down, and will then click the OK button. This action will cause NatQuery to close the Specify Field Occurrence window, which will now be updated with the DATE-IN-PE-1 reference.



5. The user can now complete the remaining portion of the calculation, by clicking the “+” button, then clicking the Value radio button, and then entering a value of “30” into the resulting Value prompt.

- Prior to leaving the screen however, the user will now check the Expression result will be an Array Variable checkbox, resulting in a window that looks like the following:

**Define Expression #NEW-DATES**

Expression Definition:

**FILE01.DATE-IN-PE-1(A11)**  
**+ 30**

Expression Components

Operands

Field From File    Variable    Value

Value:

Operators

Conditional Assignment

Conditionally Assigned  

Expression result will be an Array Variable

- With the Expression complete, the user can now click the OK button to close the Define Expression #NEW-DATES window. This action will return the user to the Define Query Variable window, which will now look similar to the following:

- The above window now shows the completed variable definition, so the user may now click the OK button to close this window. This action will return the user to the List Query Variables window, which will look similar to the following:

Name	Value
#NEW-DATES	FILE01.DATE-IN-PE-1(All)...

- The user may now close the List Query Variable window by clicking OK. This action will return the user to the NatQuery desktop – with the new Expression array variable being properly defined.