

# Variable Maintenance

With the Variable Maintenance function, you can display and modify variables within the Natural Debugger when a Natural object has been interrupted.

For the interrupted Natural object, the variable function displays user-defined variables, global variables and the database-related system variables \*COUNTER, \*ISN and \*NUMBER, together with their formats, lengths and contents.

Below is information on:

- Display User-defined, Global and DB-related System Variables
  - Display System Variables
  - Modify Variables  
(not applicable to system variables)
- 

## Display User-defined, Global and DB-related System Variables

Below is information on invoking either the Display Variables (summary) screen with a list of all variables, or the Display Variable (individual) screen with all details on a particular variable:

- Display Variables - Summary
- Display Variable - Individual

### Display Variables - Summary

 **To display a summary of user-defined, global and database-related system variables**

- On the Debug Main Menu or in the Debug Window, enter Function Code **V**.

Or enter the direct command `DISPLAY VARIABLE variable,variable,...`  
(see also the syntax of DISPLAY in Command Summary and Syntax).

The Display Variables (summary) screen provides a list of the variables specified for the interrupted Natural object. Long values may be displayed truncated on the screen. For arrays, only the contents of the first occurrence are displayed.

To switch between alphanumeric and hexadecimal representation of the variable contents, choose PF10 (Alpha) and PF11 (Hex).

To toggle between the truncated display of a variable and the Full Name display with the group name, variable name and indices (if relevant), choose PF5/Zoom.

### Display Variable - Individual

 **To display an individual variable in its entirety**

- From the Display Variables (summary) screen, select a variable by marking it with the line command **DI**.
- Or enter the direct command `DISPLAY VARIABLE variable`  
(see also the syntax of DISPLAY in Command Summary and Syntax).
- Or, on the List Object Source screen, in the Source column, position the cursor at a variable name and choose PF18/Di Va.

- The following restrictions apply when using PF 18/Di Va:

If a variable name (including the occurrences of an array) spans more than one line, only the contents of the first line are evaluated.

If the index of an array is constant, for example, array (3,2,6), only this occurrence is displayed.

If the index of an array is variable, for example, array (i,j) or array (3:i), the entire array is displayed.

The Display Variable (individual) for the particular variable appears with all relevant specifications.

For large variables that exceed the length of 256 bytes, the screen displays the first 256 bytes by default.

To display the entire contents of the variable or navigate within the contents:

- Choose PF22 to page backward or PF23 to page forward.
- Or, in the field Position, enter a numeric value to start the display at a particular position.

To switch between alphanumeric and hexadecimal representation of the variable contents, choose PF10 (Alpha) and PF11 (Hex).

#### To display all occurrences of an array

- From the Display Variables screen, select a variable by marking it with the line command **DI**.
- Choose PF7 (-) and PF8 (+) to page between the individual occurrences or  
Or, enter the direct command `DIS VAR variable(*)` to display all occurrences.

## Display System Variables

#### To display system variables (except database-related system variables)

- Enter the direct command `SYSVARS`.  
The System Variables screen appears with a list of all system variables.

For variables of the type Handle, the name of the class of the instance that the Handle refers to is displayed in alphanumeric representation. If the class name is not available, the Globally Unique ID (GUID) is displayed instead. If the class was defined within Natural, the class name or GUID is suffixed with "(NAT)".

The contents of properties of an instance of a class cannot be displayed within the Natural Debugger.

## Modify Variables

**Not applicable to system variables.**

With the Modify Variable function, you can change the value of user-defined and global variables and the database-related system variables.

#### To modify the contents of a variable from the Modify Variable screen

- Invoke the Modify Variable screen by marking the variable with the line command **MO**.  
Or, on the Display Variable screen, choose PF5.
- On the Modify Variable screen, in the field Contents, change the value of the variable.  
The new contents must be valid for the format of the modified variable since the format of a variable cannot be modified within the Natural Debugger.  
On the Modify Variable screen, you can toggle between alphanumeric and hexadecimal representation of the variable value using PF10 (Alpha) and PF11 (Hex).

 **To modify the contents of a variable via direct command**

- Enter the direct command `MODIFY VARIABLE variable = new value` (see also the syntax of `MODIFY` in Command Summary and Syntax).

A message appears that confirms modification of the variable value.