

## **Natural for UNIX**

### **System Variables**

Version 6.3.8 for UNIX

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Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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
# 1 System Variables

---

This documentation describes the Natural system variables.

Natural system variables contain information about the current Natural session, such as: the current library, the user and terminal identification; the current status of a loop processing; the current report processing status; the current date and time. They may be referenced at any point within a Natural program.

The documentation for the system variables is grouped by functions:

 <b>Application Related System Variables</b>	System variables which are useful in conjunction with a Natural application: name of the library to which the user is logged on, current library ID, information required in the event of an error, type or name of the Natural object which is currently executed, etc.
 <b>Date and Time System Variables</b>	Date and time system variables that may be specified in the statements COMPUTE, DISPLAY, MOVE, PRINT, WRITE and in logical condition criteria.
 <b>Input/Output Related System Variables</b>	System variables which contain input or output related information, such as current cursor position, line number of the current line within the current page, physical line or page size.
 <b>Natural Environment Related System Variables</b>	System variables which are relevant in conjunction with the Natural environment: device type/mode from which Natural has been invoked, user ID of the user, user ID as taken from the Natural Security logon, language indicator (language code), Natural version, etc.
 <b>System Environment Related System Variables</b>	System variables relating to the operating system used: name of the hardware platform, machine or machine class on which Natural is running, name or version number of the operating system, name or version of the TP subsystem under which Natural is running, name or version of the window manager being used, etc.
 <b>XML Related System Variables</b>	System variables which are available in conjunction with the PARSE statement.

See also:

- *System Variables in the Programming Guide*
- *Example of System Variables and System Functions in the Programming Guide*



## 2 Application Related System Variables

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## \*APPLIC-ID

---

Format/length:	A8
Content modifiable:	No

This system variable contains the ID of the library to which the user is currently logged on.

## \*APPLIC-NAME

---

Format/length:	A32
Content modifiable:	No

### Under Natural Security

If Natural Security is installed, this system variable contains the name of the library to which the user is logged on. If the user is logged on via a special link, it contains the link name instead. If Natural Security is not installed, this system variable contains the name `SYSTEM`.

The general option `Set *APPLIC-NAME always to library name` can be set so that `*APPLIC-NAME` always contains the library name, regardless of whether the user is logged on via a special link or not. See *Set \*APPLIC-NAME always to library name* in the *Natural Security* documentation.

## \*COM

---

Format/length:	A128
Content modifiable:	Yes

This system variable designates a communication area which can be used to process data from outside a screen window.

Normally when a window is active, no data can be entered on the screen outside the window. However, if a map contains `*COM` as a modifiable field, that field will still be available for the user to enter data when a window is currently on the screen. Further processing can then be made dependent on the content of `*COM`. This allows you to implement user interfaces where a user can always enter data in the command line, even when a window with its own input fields is active.



**Note:** Although `*COM` can be used as a modifiable field in an `INPUT` statement, it is *not* treated as an input field, but as a system variable; that is, any input entered into the `*COM` field will

be taken as it is, without any input processing (e.g. conversion to upper case) being performed on it. Once \*COM has been displayed on the screen via an INPUT statement, every subsequent INPUT or REINPUT statement will cause the current content of \*COM to be displayed.

See also:

- *Dialog Design in the Programming Guide*
  - *Processing Data Outside an Active Window*
  - *Positioning the Cursor to \*COM - the %T\* Terminal Command*
  - *Copying Data from a Screen*

## \*CONVID

---

Format/length:	I4
Content modifiable:	Yes

This system variable contains the conversation ID of the current conversational remote procedure call (RPC). This ID is set by an OPEN CONVERSATION statement.

Via an OPEN CONVERSATION statement, a client can get a server for exclusive use to execute a number of services (subprograms) within one server process. This exclusive use is called conversation. The OPEN CONVERSATION statement is used to open a conversation and specify the subprograms to be involved in this conversation. When an OPEN CONVERSATION statement is executed, it assigns a unique ID which identifies the conversation to the system variable \*CONVID.

Several conversations can be open at the same time. To switch from one open conversation to another, you assign the corresponding conversation ID to \*CONVID.

For further information on Natural RPC, see the *Natural Remote Procedure Call (RPC)* documentation.

## \*COUNTER (r)

---

Format/length:	P10
Content modifiable:	Yes

This system variable contains the number of times a processing loop initiated by a FIND, READ, HISTOGRAM or PARSE statement has been entered.

(*r*) notation after \*COUNTER is used to indicate the statement label or source-code line number of the FIND, READ, HISTOGRAM or PARSE statement. If (*r*) is not specified, \*COUNTER represents the number of times the currently active processing loop has been entered.

\*COUNTER is not incremented if a record is rejected as a result of the criteria specified in a WHERE clause. \*COUNTER is incremented if a record is rejected as a result of an ACCEPT/REJECT statement.

## \*CPU-TIME

---

Format/length:	I4
Content modifiable:	No

\*CPU-TIME contains the CPU time currently used by the Natural process in units of 10 ms.

## \*CURRENT-UNIT

---

Format/length:	A32
Content modifiable:	No

This system variable contains the name of the currently executed unit. This is

- the function name in case of the object type “function”,
- the inline subroutine name if an inline subroutine is performed,
- the external subroutine name in case of the object type “subroutine”, see also \*SUBROUTINE,
- the object name in case of all other object types (program, subprogram, map, dialog, etc.); see also \*PROGRAM.

The contents of \*CURRENT-UNIT will always be in upper case.

## \*DATA

---

Format/length:	N3
Content modifiable:	No

This system variable contains the number of data elements in the Natural stack which are available to the next `INPUT` statement as input data. `*DATA` will contain 0 when the stack is empty. A value of -1 indicates the next element in the stack is a command or the name of a Natural transaction.

The settings of the Natural profile/session parameters `IA` (Input Assign Character) and `ID` (Input Delimiter Character) at the time of execution of the `STACK` statement are used to determine the `*DATA` value.

## \*ERROR-LINE

---

Format/length:	N4
Content modifiable:	No

This system variable contains the source-code line number of the statement that caused an error.

## \*ERROR-NR

---

Alternatively, you may specify `*ERROR`.

Format/length:	N7
Content modifiable:	Yes

This system variable contains the error number of the error which caused an `ON ERROR` condition to be entered.

Only error numbers in the range from 0 to 9999 are supported.

Normally, `*ERROR-NR` contains the Natural *system* error number which caused an error condition to be entered; however, when a `REINPUT WITH TEXT *nnnn` statement is executed, the *application-specific* message number `nnnn` is placed into `*ERROR-NR`.

You may modify the content of this system variable via a Natural program; however, not within an `ON ERROR` statement block.

\*ERROR-NR is reset to 0 when another Level 1 program is executed.

## \*ERROR-TA

---

Format/length:	A8
Content modifiable:	Yes

This system variable contains the name of the error transaction program which is to receive control in the event of an error condition.

For further information, see *Using an Error Transaction Program* in the *Programming Guide*.

## \*ETID

---

Format/length:	A8
Content modifiable:	No

This system variable contains the current identifier of transaction data for Adabas. The default value is one of the following:

- the value of the Natural profile parameter ETID,
- the value from the security profile of the currently active user (applies only under Natural Security).

## \*ISN (r)

---

Format/length:	P10
Content modifiable:	Yes

This system variable contains the Adabas internal sequence number (ISN) of the record currently being processed within a processing loop initiated by a FIND or READ statement.

(r) notation after \*ISN is used to indicate the label or statement number of the statement in which the FIND or READ was issued. If (r) is not specified, \*ISN represents the ISN of the record currently being processed in the currently active processing loop.

For the HISTOGRAM statement, \*ISN contains the number of the occurrence in which the descriptor value last read is contained (\*ISN = 0 if the descriptor is not contained within a periodic group).

**Database-Specific Information:**

<b>SQL Databases</b>	*ISN cannot be used.
<b>Tamino</b>	*ISN contains the XML object ID.

**\*LBOUND**

Format/length:	I4
Content modifiable:	No

\*LBOUND contains the current lower boundary (index value) of an array for the specified dimension(s) (1, 2 or 3) or for all dimensions (asterisk (\*) notation).

Syntax:

```
*LBOUND (operand1 [,dim])
```

Operand Definition Table:

Operand	Possible Structure	Possible Formats	Referencing Permitted	Dynamic Definition
<i>operand1</i>	A	A U N P I F B D T L C G O	yes	no

*operand1* is the array for which the lower boundary is specified. The index notation of the array is optional. As index notation only the complete range notation \* is allowed for each dimension.

*dim* is the dimension number for which the current lower boundary is returned:

$$dim = \left\{ \begin{array}{c} 1 \\ 2 \\ 3 \\ * \end{array} \right\}$$

If no dimension is specified, the lower bound of the first dimension is returned.

If 1, 2 or 3 is specified, the lower bound of the first, second or third dimension is returned.

If \* is specified, the lower bound of all the defined dimensions are returned, that is

- 1 in case of an one dimensional array,

- 2 in case of a two dimensional array,
- 3 in case of three dimensional array.

If an X-array is not allocated and the lower bound of the specified dimension of this X-array is the variable index bound, that is, it is represented by an asterisk (\*) character in the index definition, the lower bound of the specified dimension is undefined, and access to \*LBOUND leads to a runtime error. In order to avoid the runtime error, \*OCCURRENCE may be used to check against zero occurrences:

```
DEFINE DATA LOCAL
  1 #XA(A5/1:*)
END-DEFINE
IF *OCCURRENCE (#XA) NE 0 AND *LBOUND(#XA) > 10
  THEN ...
```

Examples:

```
DEFINE DATA LOCAL
  1 #I (I4)
  1 #J (I4/1:3)
  1 #XA (A5/10:*,20:*)
END-DEFINE
#I := *LBOUND(#XA) /* lower bound of 1st dimension is 10
#I := *LBOUND(#XA,1) /* lower bound of 1st dimension is 20
#I := *LBOUND(#XA,2) /* lower bound of 2nd dimension is 20
#J(1:2):= *LBOUND(#XA,*) /* lower bound of all dimensions
/* (1st and 2nd)
/* #J(1) is 10 and #J(2) is 20
```

See also \*UBOUND and \*OCCURRENCE.

## \*LENGTH (field)

---

Format/length:	I4
Content modifiable:	No

This system variable returns the currently used length of a field defined as dynamic variable in terms of code units; for A and B format the size of one code unit is 1 byte and for U format the size of one code unit is 2 bytes (UTF-16). \*LENGTH(*field*) applies to dynamic variables only.

See also *Value Space Currently Used for a Dynamic Variable* in the *Programming Guide*.



## \*LEVEL

---

Format/length:	N2
Content modifiable:	No

This system variable contains the level number of the program, subprogram, external subroutine, map, help routine or dialog which is currently active. Level 1 is a main program.

\*LEVEL does not apply to inline subroutines.

## \*LIBRARY-ID

---

Format/length:	A8
Content modifiable:	No

This system variable contains the current library ID (as specified by the user in the LOGON command).

This variable is the equivalent of the variable [\\*APPLIC-ID](#).

## \*LINE

---

Format/length:	I4
Content modifiable:	No

It contains the number of the line currently executed in a Natural object.

## \*NUMBER (r)

---

Format/length:	P10
Content modifiable:	Yes

This system variable contains either the number of records which were selected as a result of a FIND statement (as a result of the WITH clause) or the number of values selected as a result of a HISTOGRAM statement.

(*r*) notation after \*NUMBER is used to indicate the statement label or source-code line number of the FIND or HISTOGRAM statement. If (*r*) is not specified, \*NUMBER represents the number of records selected from the FIND or HISTOGRAM used to initiate the currently active processing loop.



**Note:** When the Adabas file accessed is protected by the Adabas facility Security By Value, \*NUMBER will contain 9999999999, if more than 1 record was found. If 1 record was found, \*NUMBER will contain 1. If no record was found, \*NUMBER will contain 0.

**Database-Specific Information:**

<b>SQL Databases</b>	For SQL databases, *NUMBER only contains the number of rows found, when used with a FIND NUMBER or with a HISTOGRAM statement without a WHERE clause. In all other cases, *NUMBER will not contain the number of rows found: *NUMBER will be 0 if no rows have been found; any value other than 0 indicates that rows have been found, but the value will have no relation to the number of rows actually found.
<b>Tamino</b>	When used with a FIND NUMBER statement without a WHERE clause, *NUMBER will contain the number of rows found. Otherwise, when applied to an XML database, *NUMBER will not contain the number of rows found: *NUMBER will be 0 if no rows have been found. Any value other than 0 indicates that rows have been found. However, the value will have no relation to the number of rows actually found.  If a FIND NUMBER with a WHERE clause is used, the number of rows found is returned in *COUNTER.

**\*OCCURRENCE**

---

Format/length:	I4
Content modifiable:	No

This system variable contains the current number of occurrences of an array for the specified dimension(s).

Syntax:

```
*OCCURRENCE (operand1 [,dim])
```

Operand Definition Table:

Operand	Possible Structure	Possible Formats	Referencing Permitted	Dynamic Definition
<i>operand1</i>	A	A U N P I F B D T L C G O	yes	no

*operand1* is the array for which the number of occurrences is returned. The index notation of the array is optional. As index notation only the complete range notation \* is allowed for each dimension.

*dim* is the dimension number for which the current number of occurrences is returned:

$$dim = \begin{Bmatrix} 1 \\ 2 \\ 3 \\ * \end{Bmatrix}$$

Explanation:

1	One-dimensional array. This is the default, if <i>dim</i> is not specified.
2	Two-dimensional array.
3	Three-dimensional array.
*	All dimensions defined for the corresponding array apply.

In a parameter data area, you can use the index notation 1:V to define an array with a variable number of occurrences (see the DEFINE DATA statement). The current number of occurrences of such an array is determined at runtime. With \*OCCURRENCE, you can ascertain the current number of array occurrences.

Examples:

```

DEFINE DATA
  PARAMETER
    1 #ARRAY (A5/1:V)
  LOCAL
    1 #I (I4)
    ...
END-DEFINE
...
FOR #I = 1 TO *OCCURRENCE(#ARRAY)
  ...
END-FOR
...
    
```

See also the example programs OCC1P and OCC2P.

Concerning X-arrays, \*OCCURRENCE contains the current number of occurrences:

```
DEFINE DATA LOCAL
  1 #I    (I4)
  1 #J    (I4/1:3)
  1 #XA   (A5/1:*,1:*)
END-DEFINE
EXPAND ARRAY #XA TO (1:10,1:20)
#I := *OCCURRENCE(#XA)          /* number of occurrences of 1st dimension is 10
#I := *OCCURRENCE(#XA,1)       /* number of occurrences of 1st dimension is 10
#I := *OCCURRENCE(#XA,2)       /* number of occurrences of 2nd dimension is 20
#J(1:2) := *OCCURRENCE(#XA,*)  /* number of occurrences of all dimensions
                                   /* (1st and 2nd)
                                   /* #J(1) is 10 and #J(2) is 20
END
```

## \*PAGE-EVENT

---

Format/length:	U(dynamic)
Content modifiable:	No

This system variable contains the name of the current event delivered from Natural for Ajax.

It is used for rich GUI programming with the PROCESS PAGE statement. For further information, see the *Natural for Ajax* documentation.

## \*PAGE-LEVEL

---

Format/length:	I4
Content modifiable:	No

This system variable contains the level of the active PROCESS PAGE MODAL statement blocks.

If no PROCESS PAGE MODAL is active, the value of \*PAGE-LEVEL is 0.



**Note:** If the value of \*PAGE-LEVEL is greater than 0, no output to Report 0 via an INPUT, PRINT, WRITE or DISPLAY statement is possible.

## \*PROGRAM

---

Format/length:	A8
Content modifiable:	No

This system variable contains the name of the Natural object that is currently being executed.

## \*ROWCOUNT

---

Format/length:	I4
Content modifiable:	No

This system variable contains the number of rows that were deleted, updated or inserted by one of the Natural SQL statements “searched” DELETE, “searched” UPDATE or INSERT (with *select-expression*) respectively. \*ROWCOUNT always refers to the last executed one of these statements.

## \*STARTUP

---

Format/length:	A8
Content modifiable:	Yes

The program whose name is contained in this system variable will be executed whenever Natural would otherwise display the command input prompt (NEXT prompt or direct command line/window).

\*STARTUP contains the name of the program which has been entered in Natural Security as startup transaction in the security profile of the respective library (except in batch mode; see also the *Natural Security* documentation).

If no startup transaction is specified or if Natural Security is not used, \*STARTUP contains the value of the profile parameter STARTUP.

Via a Natural program, you can assign to \*STARTUP a program name which will always overwrite its previous content.



**Note:** A startup program used in batch mode must contain a FETCH or STACK COMMAND statement; otherwise error NAT9969 may occur.

If you invoke the command input prompt by entering the Natural terminal command %% (or any equivalent command) - either in a non-security environment or in a security environment in which command mode is not prohibited for the current library - the startup mechanism will be deactivated. To subsequently re-activate it, log on to the library again or execute a program which re-assigns the name of a program to \*STARTUP.



**Important:** To deactivate the program that is contained in \*STARTUP, set the system variable to blank value, for example, by means of the statement RESET \*STARTUP.

### Under Natural Security:

In a Natural Security environment in which command mode is prohibited for the current library, %% will cause the program whose name is contained in \*STARTUP to be invoked.

When a Natural runtime error occurs which is caused by a startup transaction (\*STARTUP), Natural's error processing might lead to the startup transaction being executed again. This would cause an error-loop situation. To prevent such a loop, the general option Logoff in error case if \*STARTUP is active is available. See *Logoff in Error Case if \*STARTUP is Active* in the *Natural Security* documentation.

## \*STEPLIB

---

Format/length:	A8
Content modifiable:	No

This system variable contains the name of the steplib library which has been concatenated to the Natural library to which the user is currently logged on.

If Natural Security is not active, \*STEPLIB contains the \*STEPLIB name specified with the profile parameter STEPLIB in the parameter file used.

If Natural Security is active, the value may be defined in the security profile of a given library.



**Note:** The database ID and file number of the \*STEPLIB library are derived from its name. Apart from the library SYSTEM, libraries with the name SYSxxx are assumed to be in FNAT and other libraries are assumed to be in FUSER.

## \*SUBROUTINE

---

Format/length:	A32
Content modifiable:	No

This system variable contains the name of the external subroutine that is currently being executed. The contents of \*SUBROUTINE will always be in upper case.

## \*THIS-OBJECT

---

Format/length:	HANDLE OF OBJECT
Content modifiable:	No

This system variable contains a handle to the currently active object. The currently active object uses \*THIS-OBJECT to either execute its own methods or pass a reference to itself to another object.

\*THIS-OBJECT only contains an actual value when a method is being executed. Otherwise it contains NULL-HANDLE.

## \*TYPE

---

Format/length:	A32
Content modifiable:	No

This system variable contains the type of the Natural object which is currently executed.

Valid values of \*TYPE:

Value	Object Type
PROGRAM	Program
FUNCTION	Function
SUBPROGRAM	Subprogram
SUBROUTINE	Subroutine
HELPROUTINE	Helproutine
MAP	Map
ADAPTER	Adapter

## \*UBOUND

---

Format/length:	I4
Content modifiable:	No

\*UBOUND contains the current upper boundary (index value) of an array for the specified dimension(s) (1, 2 or 3) or for all dimensions (\* notation).

Syntax:

```
*UBOUND (operand1 [,dim])
```

Operand Definition Table:

Operand	Possible Structure	Possible Formats	Referencing Permitted	Dynamic Definition
<i>operand1</i>		A U N P I F B D T L C G O	yes	no

*operand1* is the array for which the upper boundary is specified. The index notation of the array is optional. As index notation only the complete range notation \* is allowed for each dimension.

*dim* is the dimension number for which the current upper boundary is returned:

$$dim = \begin{Bmatrix} 1 \\ 2 \\ 3 \\ * \end{Bmatrix}$$

If no dimension is specified, the upper bound of the first dimension is returned.

If 1, 2 or 3 is specified, the upper bound of the first, second or third dimension is returned.

If \* is specified, the upper bound of all the defined dimensions are returned, that is

- 1 in case of an one dimensional array,
- 2 in case of a two dimensional array,
- 3 in case of three dimensional array.



If an X-array is not allocated and the upper bound of the specified dimension of this X-array is the variable index bound, that is, it is represented by an asterisk (\*) character in the index definition, the upper bound of the specified dimension is undefined, and access to \*UBOUND leads to a runtime error. In order to avoid the runtime error, \*OCCURRENCE may be used to check against zero occurrences:

```
DEFINE DATA LOCAL
  1 #XA(A5/1:*)
END-DEFINE
IF *OCCURRENCE (#XA) NE 0 AND *UBOUND(#XA) > 10
  THEN ...
```

Examples:

```
DEFINE DATA LOCAL
  1 #I (I4)
  1 #J (I4/1:3)
  1 #XA (A5/*:10,*:20)
END-DEFINE
#i := *UBOUND(#XA)          /* upper bound of 1st dimension is 10
#i := *UBOUND(#XA,1)       /* upper bound of 1st dimension is 10
#i := *UBOUND(#XA,2)       /* upper bound of 2nd dimension is 20
#j(1:2):= *UBOUND(#XA,*)   /* upper bound of all dimensions
                               /* (1st and 2nd)
                               /* #J(1) is 10 and #J(2) is 20
```

See also \*LBOUND and \*OCCURRENCE.



# 3

## Date and Time System Variables

---

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## Usage

---

The date and time system variables listed below may be specified in the following places:

- statements:
  - COMPUTE
  - DISPLAY
  - MOVE
  - PRINT
  - WRITE
- logical condition criteria

The contents of date and time system variables as generated by Natural are *non-modifiable*, which means that in a Natural program you cannot assign another value to any of them.

## \*DAT\* - Date System Variables

---

All date system variables contain the current date. The format of the date is different for each date variable, as indicated below.

Date Variable	Format/Length	Date Format
*DATD	A8	DD.MM.YY
*DAT4D	A10	DD.MM.YYYY
*DATE	A8	DD/MM/YY
*DAT4E	A10	DD/MM/YYYY
*DATG	A15	DD $monthname$ YYYY (Gregorian date)
*DATI	A8	YY-MM-DD
*DAT4I	A10	YYYY-MM-DD
*DATJ	A5	YYDDD (Julian date)
*DAT4J	A7	YYYYDDD (Julian date)
*DATN	N8	YYYYMMDD
*DATU	A8	MM/DD/YY
*DAT4U	A10	MM/DD/YYYY
*DATV	A11	DD-MON-YYYY
*DATVS	A9	DDMONYYYY
*DATX	D	internal date format

\* D = day, M = month, Y = year, MON = leading three bytes of the month's name as in \*DATG

## \*TIM\* - Time System Variables

At runtime, the content of a time system variable is evaluated anew each time the variable is referenced in a Natural program. The format of the time is different for each time variable, as indicated below.

Time Variable	Format/Length	Explanation
*TIMD ( <i>r</i> )	N7	Can only be used in conjunction with a previous SETTIME statement.  Contains the time that has elapsed after the SETTIME statement was executed (in format HHIISST (*)).  ( <i>r</i> ) represents the statement label or source-code line number of the SETTIME statement used as the basis for *TIMD.
*TIME	A10	Contains the time of day in format HH:II:SS.T (*).
*TIME-OUT	N5	Contains the number of seconds remaining before the current transaction will be timed out (only available with Natural Security).  *TIME-OUT is 0 if transaction mode has not been entered. Transaction mode is entered with the execution of a FIND, READ or GET statement that reads a database record for the purpose of updating or deleting the record.  *TIME-OUT is reset to 0 when an END TRANSACTION or BACKOUT TRANSACTION statement is executed.
*TIMESTMP	B8	Machine-internal store clock value.
*TIMN	N7	Contains the time of day in format HHIISST (*).
*TIMX	T	Contains the time of day in internal time format.

\* H = hour, I = minute, S = second, T = tenth of a second.

## Example of Date and Time System Variables

```

** Example 'DATIVAR': Date and time system variables
*****
DEFINE DATA LOCAL
1 #DATE (D)
1 #TIME (T)
END-DEFINE
*
WRITE NOTITLE
'DATE IN FORMAT DD.MM.YYYY ' *DAT4D /
'DATE IN FORMAT DD/MM/YYYY ' *DAT4E /
'DATE IN FORMAT DD-MON-YYYY ' *DATV /
'DATE IN FORMAT DDMONYYYY ' *DATVS /
'DATE IN GREGORIAN FORM ' *DATG /
'DATE IN FORMAT YYYY-MM-DD ' *DAT4I /
'DATE IN FORMAT YYYYDDD ' *DAT4J /
'DATE IN FORMAT YYYYMMDD ' *DATN (AD=L) /
'DATE IN FORMAT MM/DD/YYYY ' *DAT4U /
'DATE IN INTERNAL FORMAT ' *DATX (DF=L) ///
'TIME IN FORMAT HH:II:SS.T ' *TIME /
'TIME IN FORMAT HHIISST ' *TIMN (AD=L) /
'TIME IN INTERNAL FORMAT ' *TIMX /
*
MOVE *DATX TO #DATE
ADD 14 TO #DATE
WRITE 'CURRENT DATE' *DATX (DF=L) 3X
'CURRENT DATE + 14 DAYS ' #DATE (DF=L)
*
MOVE *TIMX TO #TIME
ADD 100 TO #TIME
WRITE 'CURRENT TIME' *TIMX 5X
'CURRENT TIME + 10 SECONDS' #TIME
*
END

```

### Output of program DATIVAR:

```

DATE IN FORMAT DD.MM.YYYY 11.01.2005
DATE IN FORMAT DD/MM/YYYY 11/01/2005
DATE IN FORMAT DD-MON-YYYY 11-Jan-2005
DATE IN FORMAT DDMONYYYY 11Jan2005
DATE IN GREGORIAN FORM 11January 2005
DATE IN FORMAT YYYY-MM-DD 2005-01-11
DATE IN FORMAT YYYYDDD 2005011
DATE IN FORMAT YYYYMMDD 20050111
DATE IN FORMAT MM/DD/YYYY 01/11/2005
DATE IN INTERNAL FORMAT 2005-01-11

```

```
TIME IN FORMAT HH:II:SS.T 14:42:05.4
TIME IN FORMAT HHIISST 1442054
TIME IN INTERNAL FORMAT 14:42:05

CURRENT DATE 2005-01-11 CURRENT DATE + 14 DAYS 2005-01-25
CURRENT TIME 14:42:05 CURRENT TIME + 10 SECONDS 14:42:15
```





# 4 Input/Output Related System Variables

---

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## \*CURS-COL

---

Format/length:	P3
Content modifiable:	Yes (however, a negative value must not be assigned)

This system variable contains the number of the column in which the cursor is currently positioned.

The cursor position is defined within the currently active window, regardless of its physical placement on the screen, starting with position 1/1 from the upper left corner of a logical page.

If the value of \*CURS-COL is negative, this indicates that the cursor is outside the active window. If \*CURS-COL is negative, \*CURS-LINE will also contain a negative value. In this case, the absolute values of both system variables indicate the position of the cursor on the physical screen.



**Note:** The message line, function-key lines and infoline/statistics line are not counted as data lines on the screen.

See also *Dialog Design, Column-Sensitive Processing* in the *Programming Guide*.

## \*CURS-FIELD

---

Format/length:	I4
Content modifiable:	No

This system variable contains the internal identification of the field in which the cursor is currently positioned.

\*CURS-FIELD cannot be used by itself, but only in conjunction with the POS function. You may use them to check if the cursor is currently positioned in a specific field and have processing performed depending on that condition. See the POS function for details.

If the cursor is not in a field or if no REINPUT is possible, \*CURS-FIELD contains 0.

In Natural for Ajax applications, \*CURS-FIELD identifies the operand that represents the value of the control that has the input focus. You may use \*CURS-FIELD in conjunction with the POS function to check for the control that has the input focus and perform processing depending on that condition.



**Note:** The value of \*CURS-FIELD serves only as internal identification of the field and cannot be used for arithmetic operations. If \*CURS-FIELD identifies an occurrence of an X-array (an array for which at least one bound in at least one dimension is specified as extensible), the

value of `*CURS-FIELD` may change after the number of occurrences for a dimension of the array has been changed using the `EXPAND`, `RESIZE` or `REDUCE` statements.

See also *Dialog Design, Field-Sensitive Processing* in the *Programming Guide*.

## \*CURS-LINE

Format/length:	P3
Content modifiable:	Yes (however, a negative value or 0 must not be assigned)

This system variable contains the number of the line in which the cursor is currently positioned.

The cursor position is defined within the current active window, regardless of its physical placement on the screen, starting with position 1/1 from the upper left corner of a *logical* page.



**Note:** The message line, function-key lines and infoline/statistics line are not counted as data lines on the screen.

`*CURS-LINE` may also contain one of the following values:

Value	Cursor Position
0	On the top or bottom horizontal frame line of a window.
-1	On the Natural message line.
-2	On the Natural infoline/statistics line.
-3	On the upper function-key (number) line.
-4	On the lower function-key (name) line.

If the value of `*CURS-COL` is negative, which indicates that the cursor is outside the active window, `*CURS-LINE` will also contain a negative value. In this case, the *absolute* values of both system variables indicate the position of the cursor on the *physical* screen.

See also *Dialog Design, Line-Sensitive Processing* in the *Programming Guide*.

## \*CURSOR

---

Format/length:	N6
Content modifiable:	No

This system variable contains the position of the cursor on the input screen at the time the ENTER key or a function key is pressed.



**Note:** Instead of \*CURSOR, it is recommended that the system variables \*CURS-LINE and \*CURS-COL be used. \*CURSOR only continues to be available for compatibility with previous Natural versions.

## \*LINE-COUNT

---

Format/length:	P5
Content modifiable:	No

This system variable contains the line number of the current line within the current page.

This variable is used by Natural to determine the line number for the next line of the report.

The value of \*LINE-COUNT is incremented by 1 for each line to be output. The value is updated during the execution of a WRITE, SKIP, DISPLAY, PRINT or INPUT statement and contains the number of the last line on the page that has been output.

An EJECT or NEWPAGE statement causes \*LINE-COUNT to be reset to 1 (except in the case of NEWPAGE WITH TITLE, where the value of \*LINE-COUNT depends on the number of lines output as title).

The maximum line number permitted is 250.

If multiple reports are being produced by the program, (*rep*) notation after \*LINE-COUNT is used to specify the report identification for which the current line number is being requested.

## \*LINESIZE

---

Format/length:	N7
Content modifiable:	No

This system variable contains the physical line size of the I/O device from which Natural was invoked (if the TP system is able to provide such).

## \*LOG-LS

---

Format/length:	N3
Content modifiable:	No

This system variable contains the line size of the logical page that is output with the primary report.

\*LOG-LS is only applicable to the primary report, not to any additional report.

## \*LOG-PS

---

Format/length:	N3
Content modifiable:	No

This system variable contains the page size of the logical page that is output with the primary report.

\*LOG-PS is only applicable to the primary report, not to any additional report.

## \*PAGE-NUMBER

---

Format/length:	P5
Content modifiable:	Yes

This system variable contains the current value for page number of an output report.

If multiple reports are being produced by the program, (*rep*) notation after \*PAGE-NUMBER is used to specify the report identification for which the current page number is being requested.

This variable is defined by Natural at the time formatting for the report is started. Therefore, the parameter has no meaning until the first `FORMAT`, `WRITE`, or `DISPLAY` statement for any given report has been issued. This variable may be modified by a Natural program.

This variable is used by Natural to determine the page number for the next page of the report. The value is always incremented by 1 for the next page initiated by `WRITE`, `DISPLAY`, `SKIP` or `NEWPAGE` statements. `EJECT` does not cause `*PAGE-NUMBER` to be incremented.

## \*PAGESIZE

---

Format/length:	N7
Content modifiable:	No

This system variable contains the physical page size of the I/O device from which Natural was invoked (if the TP subsystem is able to provide such).

## \*PF-KEY

---

Format/length:	A4
Content modifiable:	No

This system variable contains the identification of the key which was pressed last.

\*PF-KEY can contain one of the following values:

Value	Description
PA1 to PA3	Program Attention keys 1 to 3.
PF1 to PF48	Program Function keys 1 to 48.
ENTR	ENTER key.
CLR	CLEAR key.
PEN	Light pen.
PGDN	PAGE DOWN key.
PGUP	PAGE UP key.

\*PF-KEY only contains the identification of a key if that key is currently sensitive; otherwise \*PF-KEY will contain `ENTR`.



**Note:** When you compare the content of \*PF-KEY with a range of values, remember that \*PF-KEY contains an alphanumeric value.

See also

- SET KEY statement (for effects on the contents of \*PF-KEY).
- *Processing Based on Function-Keys* in the *Programming Guide*.

## \*PF-NAME

---

Format/length:	A10
Content modifiable:	No

This system variable contains the name of the function key that was pressed last, that is, the name as assigned to the key with the NAMED clause of the SET KEY statement.

This allows you to perform processing depending on a specific function name, not a specific key. For example, if you wish to allow users to invoke help by pressing either PF1 or PF13, you assign the name HELP to the keys PF1 and PF13 and make the invoking of help dependent on \*PF-NAME= 'HELP': the help will then be invoked no matter whether the user presses PF1 or PF13 to invoke it.

See also *Dialog Design, Processing Based on Function-Key Names* in the *Programming Guide*.

## \*WINDOW-LS

---

Format/length:	N3
Content modifiable:	No

This system variable contains the line size of the logical window (without frame). See also the DEFINE WINDOW statement.

**\*WINDOW-POS**

---

Format/length:	N6
Content modifiable:	No

This system variable contains the position which corresponds to the upper left corner of the window. See also the `DEFINE WINDOW` statement.

The position is counted in characters across multiple lines, beginning with 0 (upper left corner).

**\*WINDOW-PS**

---

Format/length:	N3
Content modifiable:	No

This system variable contains the page size of the logical window (without frame). See also the `DEFINE WINDOW` statement.



# 5

## Natural Environment Related System Variables

---

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## \*BROWSER-IO

---

Format/length:	A8
Content modifiable:	No

This system variable indicates that the application is running in a web browser. An application can run in a web browser either via the Natural Web I/O Interface or by using Natural for Ajax. An application that is running with the Natural Web I/O Interface can use maps. An application that is running with Natural for Ajax can use both maps and rich GUI pages (using the `PROCESS PAGE` statement).

This system variable may contain one of the following values:

Value	Description
<i>(empty)</i>	The application is not running in a web browser.
WEB	The application is running with the Natural Web I/O Interface. It cannot use the <code>PROCESS PAGE</code> statement.
RICHGUI	The application is running with Natural for Ajax. It can use the <code>PROCESS PAGE</code> statement.

## \*DEVICE

---

Format/length:	A8
Content modifiable:	No

This system variable contains the device type/mode from which Natural has been invoked. It may contain one of the following values:

Value	Description
BATCH	Batch mode.
3279 compatibility. 3278 screen device (device with extended attribute support).	
VIDEO	3270 screen device, PC screen device, VT or X terminal or any type of UNIX terminal.
TTY	Teletype or other start/stop device.
PC	Usage of Natural Connection has been activated (by profile parameter <code>PC=ON</code> or terminal command <code>%+</code> ).

Value	Description
BTX device.	
3270 printer device.	
Asynchronous session.	

## \*GROUP

---

Format/length:	A8
Content modifiable:	No

This system variable is applicable under Natural Security only. It contains the ID via which a user is logged on to a protected library, that is, the ID via which the user is linked to the library. This may be either the ID of the group via which the user is linked or the user's own ID (if he or she is linked directly).

\*GROUP will be blank under the following conditions:

- in the case of a logon to an unprotected library (where no link is used),
- if Natural Security is not active.

## \*HARDCOPY

---

Format/length:	A8
Content modifiable:	Yes

This system variable contains the name of the hardcopy device which will be used when the terminal command %H is used.

## \*INIT-USER

---

Format/length:	A8
Content modifiable:	No

\*INIT-USER contains the value of the profile parameter USER in the parameter file used.

If no value is specified for the USER parameter, \*INIT-USER contains the user ID used to log in to UNIX.

## \*LANGUAGE

---

Format/length:	I1
Content modifiable:	Yes

This system variable contains the language indicator (language code). This language indicator is used for edit masks of date fields, Natural error messages and user error messages as used in the statements INPUT and REINPUT.

A one-character code is assigned to each language code; this one-character code is used to replace all ampersand characters (&) in names of language-specific objects (for example, maps, dialogs, help routines, subprograms). For details on the use of the ampersand character in Natural object names, see the descriptions of the statements CALLNAT (*operand1*), FETCH (*operand1*), INCLUDE (*copycode-name*) and INPUT (USING MAP) and the session parameter HE (*operand1*).

You can specify up to 60 different language codes. The codes are listed below.

The system variable \*LANGUAGE is set by the Natural profile parameter ULANG which determines the language to be used for date edit masks, system messages, user messages, help texts, help routines and multi-lingual maps.

Natural does not differentiate between compile time and run time. It always tries to read the map with the current value of \*LANGUAGE first and if not found, it then tries to find the map with the default language.

For details on how to use language codes, see also *Multilingual User Interfaces* in the *Programming Guide*.

### Language Code Assignments

The following languages are assigned to the individual language codes (the right-hand column shows the corresponding one-character codes to be used in names of language-specific objects):

- Left-to-Right Single-Byte Languages with Latin Lower Case
- Left-to-Right Single-Byte Languages without Latin Lower Case
- Bi-directional Single-Byte Languages without Latin Lower Case
- User-Assigned Languages
- Multiple-Byte Languages
- Double-Byte Languages

### Left-to-Right Single-Byte Languages with Latin Lower Case

Code	Language	Character Code in Language-Specific Object Names
1	English	1
2	German	2
3	French	3
4	Spanish	4
5	Italian	5
6	Dutch	6
7	Turkish	7
8	Danish	8
9	Norwegian	9
10	Albanian	A
11	Portuguese	B
12	Chinese Latin (Taiwan)	C
13	Czech	D
14	Slovak	E
15	Finnish	F
16	Hungarian	G
17	Icelandic	H
18	Korean	I
19	Polish	J
20	Romanian	K
21	Swedish	L
22	Croatian	M
23	Catalan	N
24	Basque	O
25	Afrikaans	P

### Left-to-Right Single-Byte Languages without Latin Lower Case

Code	Language	Character Code in Language-Specific Object Names
26	Bulgarian	Q
27	Greek	R
28	Japanese (Katakana)	S
29	Russian	T
30	Serbian	U

### Bi-directional Single-Byte Languages without Latin Lower Case

Code	Language	Character Code in Language-Specific Object Names
31	Arabic	V
32	Farsi (Iran)	W
33	Hebrew	X
34	Urdu (Pakistan)	Y
35	(reserved for future use)	Z
36	(reserved for future use)	a
37	(reserved for future use)	b
38	(reserved for future use)	c
39	(reserved for future use)	d
40	(reserved for future use)	e

### User-Assigned Languages

Code	Language	Character Code in Language-Specific Object Names
41	(free for you to assign a language)	f
42	(free for you to assign a language)	g
43	(free for you to assign a language)	h
44	(free for you to assign a language)	i
45	(free for you to assign a language)	j
46	(free for you to assign a language)	k
47	(free for you to assign a language)	l
48	(free for you to assign a language)	m
49	(free for you to assign a language)	n
50	(free for you to assign a language)	o

## Multiple-Byte Languages

Code	Language	Character Code in Language-Specific Object Names
51	Hindi	p
52	Malayan	q
53	Thai	r
54	(reserved for future use)	s
55	(reserved for future use)	t
56	(reserved for future use)	u

## Double-Byte Languages

Code	Language	Character Code in Language-Specific Object Names
57	Chinese (People's Republic of China)	v
58	Chinese (Republic of China)	w
59	Japanese (Kanji)	x
60	Korean	y

## \*NATVERS

Format/length:	A8
Content modifiable:	No

This system variable contains the Natural version excluding the patch level information in the format

*rr.vv.ss*

where *rr*=release, *vv*=version, *ss*=system maintenance level (for example: 06.02.01).

The patch level information is contained in the variable [\\*PATCH-LEVEL](#).

## **\*NET-USER**

---

Format/length:	A253
Content modifiable:	No

The value of \*NET-USER is identical to the one of \*USER.

## **\*PARM-USER**

---

Format/length:	A253
Content modifiable:	No

This system variable contains the name of the parameter file currently in use.

## **\*PATCH-LEVEL**

---

Format/length:	A8
Content modifiable:	No

This system variable contains the current patch-level number as a string value. See also \*NATVERS.

## **\*PID**

---

Format/length:	A32
Content modifiable:	No

This system variable contains the current process ID as a string value.



## \*SCREEN-IO

---

Format/length:	L
Content modifiable:	No

This system variable indicates whether a screen I/O is possible or not.

It can contain one of the following values:

<b>TRUE</b>	Screen I/O is possible.
<b>FALSE</b>	Screen I/O is not possible.

In an interactive Natural session, \*SCREEN-IO is initialized with TRUE. In a Natural batch session, \*SCREEN-IO is initialized with FALSE (except for a Natural Development Server).

If Natural was started as a DB2 Stored Procedures server (\*SERVER-TYPE = DB2-SP) or as RPC server (\*SERVER-TYPE = RPC) \*SCREEN-IO is set to FALSE.

When \*SCREEN-IO is set to FALSE and a statement which requires user interaction is executed, Natural issues error NAT0723.

## \*SERVER-TYPE

---

Format/length:	A32
Content modifiable:	No

This system variable indicates the server type Natural has been started as.

It can contain one of the following values:

<b>DB2-SP</b>	Natural DB2 Stored Procedures server
<b>DEVELOP</b>	Natural development server
<b>RPC</b>	Natural RPC server
<b>WEBIO</b>	Natural Web I/O Interface server

If Natural is not started as a server, \*SERVER-TYPE is set to blanks.



**Note:** \*SERVER-TYPE refers to Natural as a whole, *not* to the Natural program currently being executed (which may run as a client program or as a server program within a server Natural).

## \*UI

---

Format/length:	A16
Content modifiable:	No

This system variable indicates the type of user interface being used:

<b>CHARACTER</b>	Character-oriented user interface.
<b>GUI</b>	Graphical user interface.

## \*USER

---

Format/length:	A8
Content modifiable:	No

This system variable contains the user ID as taken from the Natural Security logon.

If the profile parameter `AUTO=ON` (Automatic Logon) is set or if Natural Security is not active, the value of `*USER` is identical to that of `*INIT-USER`.

## \*USER-NAME

---

Format/length:	A32
Content modifiable:	No

If Natural Security is installed, this variable contains the name of the user who is currently logged on to Natural.

If Natural Security is not active, the default is `SYSTEM`.

# 6 System Environment Related System Variables

---

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## \*CODEPAGE

---

Format/length:	A64
Content modifiable:	No

This system variable returns the IANA name of the default code page which is internally used by Natural for conversions to and from Unicode and which is set by the Natural profile parameter CP.



**Note:** \*CODEPAGE is also the default if a code page is not specified in a MOVE ENCODED statement.

Example:

```
ISO-8859-1
```

## \*HARDWARE

---

Format/length:	A16
Content modifiable:	No

This system variable contains the name of the hardware platform on which Natural is running. This value is supplied by the operating system.

## \*HOSTNAME

---

Format/length:	A64
Content modifiable:	No

The name of the machine Natural runs on.

## \*INIT-ID

---

Format/length:	A8
Content modifiable:	No

\*INIT-ID contains the ID of the device from which Natural was invoked.

## \*INIT-PROGRAM

---

Format/length:	A8
Content modifiable:	No

\*INIT-PROGRAM contains the value Natural.

## \*LOCALE

---

Format/length:	A8
Content modifiable:	No

This system variable contains the language and country of the current locale, which specifies the Unicode collation sequence.

Example:

```
en_US
```

## \*MACHINE-CLASS

---

Format/length:	A16
Content modifiable:	No

This system variable contains the name of the machine class on which Natural is running.

It can contain one of the following values:

MAINFRAME  
PC  
UNIX  
VMS

## \*OPSYS

---

Format/length:	A8
Content modifiable:	No

This system variable contains the Natural name of the operating system that is being used.

It can contain one of the following values:

ATT_OSX	FUJI M73	SINIX_52
AVIION	HP_HPUX	SINIX_54
BS2000	MSDOS	SUN_SOLA
BS2/XS	MS_OS/2	SUN_SUNO
BULL/BOS	MVS/ESA	UNISYS 5
CMS	MVS/XA	UNISYS 6
CMS/ESA	NCR 3000	VSE/ESA
DEC-OSF/	OS	WNT-X86
DOS/VS	OS/400	
DPS300	RS_6000	
DRS 6000	SCO	



**Note:** Instead of \*OPSYS, it is recommended that the system variables \*MACHINE-CLASS, \*HARDWARE and \*OS be used, as they allow a more precise distinction of the environment in which Natural is running.

**\*OS**

---

Format/length:	A32
Content modifiable:	No

This system variable contains the name of the operating system under which Natural is running. This value is supplied by the operating system and may be subject to change.

**\*OSVERS**

---

Format/length:	A16
Content modifiable:	No

This system variable contains the version number of the operating system under which Natural is running. This value is supplied by the operating system and may be subject to change.

**\*TP**

---

Format/length:	A8
Content modifiable:	No

It contains the name of the TP subsystem under which Natural is running. This value is supplied by the operating system and may be subject to change.

**\*TPSYS**

---

Format/length:	A8
Content modifiable:	No

This system variable contains the Natural name of the TP monitor or environment that is being used.

It can contain one of the following values:

AIM/DC  
CICS

COMPLETE  
IMS/DC  
OS/400  
SERVSTUB (Natural Development Server)  
TIAM  
TSO  
TSS  
UTM  
VM/CMS

On mainframe platforms, \*TPSYS will be blank in batch mode.

On Windows, UNIX and OpenVMS platforms, \*TPSYS will be NONE.

## \*TPVERS

---

Format/length:	A8
Content modifiable:	No

It contains the version of the TP subsystem under which Natural is running. This value is supplied by the operating system and may be subject to change.

If no TP monitor is used, \*TPVERS will be blank.

## \*WINMGR

---

Format/length:	A16
Content modifiable:	No

If a graphical user interface is used, this system variable contains the name of the window manager being used (for example, MOTIF or PM).

If a character-oriented user interface is used, \*WINMGR will be blank.

The type of user interface is indicated by the value of the system variable \*UI.



## **\*WINMGRVERS**

---

Format/length:	A16
Content modifiable:	No

If a graphical user interface is used, this system variable contains the version number of the window manager being used.

If a character-oriented user interface is used, \*WINMGRVERS will be blank.

The type of user interface is indicated by the value of the system variable \*UI.



# 7 XML Related System Variables

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▪ *PARSE-COL (r) .....	54
▪ *PARSE-LEVEL (r) .....	54
▪ *PARSE-NAMESPACE-URI (r) .....	54
▪ *PARSE-ROW (r) .....	55
▪ *PARSE-TYPE (r) .....	55

These system variables, which are available when using the `PARSE` statement, are only valid in the current loop context.

## **\*PARSE-COL (r)**

---

Format/length:	I4
Content modifiable:	No

This system variable contains the column where the parser is currently working at.

(*r*) notation after `*PARSE-COL` is used to indicate the statement label or source-code line number of the `PARSE` statement. If (*r*) is not specified, `*PARSE-COL` represents the column where the parser in the currently active processing loop is working at.

## **\*PARSE-LEVEL (r)**

---

Format/length:	I4
Content modifiable:	No

This system variable contains the level of currently nested elements.

(*r*) notation after `*PARSE-LEVEL` is used to indicate the statement label or source-code line number of the `PARSE` statement. If (*r*) is not specified, `*PARSE-LEVEL` represents the level where the parser in the currently active processing loop is working at.

## **\*PARSE-NAMESPACE-URI (r)**

---

Format/length:	A (dynamic)
Content modifiable:	No

This system variable contains the namespace URI of the current element/attribute, if the element/attributes belong to a namespace. If the `NAME` (*operand3*) value of the `PARSE` statement is empty, then there is also no namespace and `*LENGTH(*PARSE-NAMESPACE-URI)` is set to 0.

(*r*) notation after `*PARSE-NAMESPACE-URI` is used to indicate the statement label or source-code line number of the `PARSE` statement. If (*r*) is not specified, `*PARSE-NAMESPACE-URI` represents the namespace URI of the current element/attribute in the currently active processing loop.

## \*PARSE-ROW (*r*)

---

Format/length:	I4
Content modifiable:	No

This system variable contains the row where the parser is currently working at.

(*r*) notation after \*PARSE-ROW is used to indicate the statement label or source-code line number of the PARSE statement. If (*r*) is not specified, \*PARSE-ROW represents the row where the parser in the currently active processing loop is working at.

## \*PARSE-TYPE (*r*)

---

Format/length:	A1
Content modifiable:	No

This Natural system variable is automatically created for each PARSE statement issued.

This system variable contains the type of the delivered data.

(*r*) notation after \*PARSE-TYPE is used to indicate the statement label or source-code line number of the PARSE statement. If (*r*) is not specified, \*PARSE-TYPE represents the type of the delivered data in the currently active processing loop.

Possible values for ASCII-based systems are:

?	Processing instruction (but not first <?XML . . . ?>).
!	Comment.
C	CDATA section.
T	Starting tag.
@	Attribute (on mainframes: § or @, depending on session code page and terminal emulation).
/	Closing tag.
\$	Parsed data.

