

# Natural under VM/CMS

This document contains special considerations that apply when running Natural under VM/CMS.

The following topics are covered:

- Issuing CP and CMS Commands from Natural
  - Reading the CMS Program Stack
  - Hardcopy Function
  - Applying Fixes to Natural
  - Natural in Batch Mode under CMS
  - Using TCP/IP Communication
  - Calling Natural Subprograms from Rexx
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## Issuing CP and CMS Commands from Natural

You can use the Natural system command `CMS` to issue CP and CMS commands; for example, `CMS FLIST * DATA B` or `CMS CP SPOOL PRT *`.

If you enter `CMS` without parameters, a menu prompts you for a CP / CMS command. To exit from the menu enter a period (.) in the first position.

To issue CP or CMS commands from within a Natural program, code the following statement:

```
CALL 'CMS' command rc
```

where:

*command* is either an alphanumeric variable or a constant,

*rc* is a variable (format/length I4) which receives the return code from the CP or CMS command.

The second parameter (*rc*) is optional. Full command resolution is provided just as in normal CMS interactive command mode.

## Reading the CMS Program Stack

To read a line from the CMS program stack into a Natural variable, code the following:

```
CALL 'CMSREAD' line
```

where *line* is an alphanumeric variable.

The line read from the program stack is either truncated or padded with blanks to fit the length of the variable.

If the program stack is empty, CMSREAD returns the character string \*EOD\*.

## Hardcopy Function

The hardcopy function of the Natural CMS Interface is enabled by specifying parameter

```
HCAM=CMS
```

either in NATPARM ASSEMBLE, or dynamically when invoking Natural.

The Natural terminal command %H sends output to your virtual printer. Specifying %HL produces a file called NATURAL LISTING A.

## Applying Fixes to Natural

Software AG provides fixes in the form of Zaps to remedy problems which are discovered after your Natural installation tape was shipped.

- Before applying the Zaps, ensure that you have made backup copies of the files.
- Use the NATZAP facility to apply these Zaps to your Natural text files.
- After applying the Zaps, the Natural module and DCSS must be built anew. Use the NATBLDM and NATBLDS commands respectively to do this.

For more information about NATZAP, type HELP NATZAP in the Natural installation user ID.

## Natural in Batch Mode under CMS

See *Natural in Batch Mode (All Environments)* and *Natural in Batch under CMS*.

## Using TCP/IP Communication

The Natural statement REQUEST DOCUMENT is used to connect to an http server to retrieve HTML or XML files. The file TCPIP DATA contains configuration information for TCP/IP client programs. This file resides on the TCP/IP client minidisk and is typically accessed by the command

```
VMLINK TCPIP
```

If you are planning to use REQUEST DOCUMENT, include in a Rexx program to invoke Natural the line:

```
EXEC VMLINK TCPIP
```

## Calling Natural Subprograms from Rexx

In a Rexx program, you can use the `CALLNAT` function to execute a Natural subprogram and pass parameters to it. The Rexx program must be executed while Natural is active, for example, by a `CALL` statement in a Natural program:

```
CALL 'CMS' 'EXEC MYREXX'
```

`MYREXX` can then execute a Natural subprogram with the `CALLNAT` function:

```
result = callnat('MYNAT',parm1,parm2)
```

`MYNAT` should reside in the same Natural library as the Natural program that called the Rexx program. Upon successful execution of `MYNAT`, the Rexx variable `result` will contain the name of the called subprogram, padded with blanks to a length of 8 (that is, in this example: `result='MYNAT '`). If an error was encountered, `result` will contain the Natural error number prefixed with "NAT", for example: `NAT0082`.

To exchange data between Rexx and Natural, you can use the statements `READ WORK FILE` and `WRITE WORK FILE`, preceded by

```
DEFINE WORK FILE n 'STEM rexxstem.'
```

The work file must be declared using the parameter macro `NTWORK` or the profile parameter `WORK` with `AM=CMS`. See also *Print File and Work File Support*.