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**Title:**

RC8000 Utility Program  
Printzones

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**Keywords:**

RC8000, ALGOL, FORTRAN, runtime system, key variables, zone chain, activity descriptors, basic software, utility program.

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**Abstract:**

This manual describes the utility program printzones used to print the runtime system key variables and the zone chain, context block chain and activity descriptors from the stack of stopped ALGOL or FORTRAN programs, either from core or from dumped core images on files.

(15 printed pages)

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## FOREWORD

In the permanent part of the runtime system of ALGOL and FORTRAN programs are placed a number of key variables to the system, cf. ref. (1).

In the stack of running ALGOL and FORTRAN programs are placed all the active zones of the program, chained together down the stack in the reverse order of which they were allocated on the stack.

If context blocks are allocated on the stack (even possible in FORTRAN programs calling external ALGOL procedures) they are linked together the same way.

If activities are allocated on the stack, descriptor records for each activity are allocated as well.

The present program prints values in these data structures either from a program residing in core or from a dumped core image in a file, provided the process has been stopped or the file contains an image of the core of a stopped process running an ALGOL/FORTRAN program.

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A/S REGNECENTRALEN, October 1984



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1. INTRODUCTION

The program is intended for inspection of runtime system variables and/or zone and share descriptors, context block descriptors and activity descriptors in ALGOL or FORTRAN programs for debugging purposes.

The program being inspected must have been translated by:

- the ALGOL compiler in SW8500/1, release 11.0, 1979.11.12 or newer, or
- the FORTRAN compiler in SW8501/2, release 1.0, 1983.09.01 or newer.

If the program to be inspected executes in an internal process, the following must be fulfilled:

- the process must have been stopped by its parent
- the CPA of the calling process must permit read access to the internal process to be inspected
- the address base of calling process must permit read access to the internal process to be inspected
- the internal process to be inspected must not be a process swopped out.

If the program to be inspected is found in a dumped core picture in a file, the file must contain the entire process dumped.

2. CALL

The program is called:

$$(\underset{0}{\langle \text{outfile} \rangle})^1_0 = \text{printzones } (\underset{0}{\langle \text{procname} \rangle})^1_0$$

where

$\langle \text{outfile} \rangle ::=$

$\langle \text{procname} \rangle ::=$  a name of at most 11 characters

3. FUNCTION

If an <outfile> name is specified in the call, the program connects its output zone to a file of that name, i.e. if no such file exists, a backing storage area is created and the zone is connected.

If no <procname> is specified the program uses the default name 'image'.

If an internal process exists of the name specified in <procname>, the program connects its input to the process.

If no process exists, a file descriptor of the name is looked up in the catalog. If it exists, the input zone is connected else the program terminates with an alarm.

Now the key variables and the zone chains/descriptors are input and the values printed.

#### 4. EXAMPLES

##### 4.1 Example 1

The call  
    printzones

will try to print from a file named 'image'

##### 4.2 Example 2

The call  
    lp = printzones dumpfile

will try to print on the file 'lp' from a file named 'dumpfile'

##### 4.3 Example 3

The call  
    printzones fgs274001

will try to print from a process named 'fgs274001'.

If no such process exists then it will try to print from a file of that name, and if it fails it will terminate.

5. ERROR MESSAGES

\*\*\*printzones connect <outfile> <cause>

The program could not connect current output zone to <outfile> for the reason stated in <cause>. The program continues with current output connected as before the call.

\*\*\*printzones call error as <explanation>

no run 0.....

called from ....

<explanation> = 'no file or process name'

The program was called with an integer as parameter.

<explanation> = 'internal process invisible'

The address base of calling process does not permit read access to the internal process to be inspected, or the processes have some primary store in common. In this case the process to be inspected is either an ancestor not allowing read access through address base of calling process, or it is a process swopped out of core at present.

<explanation> = 'internal process unreadable'

The CPA of calling process does not permit read access to the internal process to be inspected.

<explanation> = 'no coredump area exists'

No file descriptor with the name given in <procname> exists.

In all cases the program terminates with the fp mode  
bits: warning.yes, ok.no

give up 8 algalcheck  
called from ...  
\*\*\* device status <file>  
stopped  
process does not exist

The executing process has too few area processes or the file  
descriptor given in <procname> describes a non existing area.  
The program terminates with fp mode bits set:  
warning.yes, ok.no

block 2 recprocs6  
called from ...

The file given by <procname> does not contain a dump of the  
entire process to be inspected.  
The program terminates with fp mode bits set:  
warning.yes, ok.no

6. REFERENCES

- (1) RCSL No. 31-D199 : Code procedures and Run Time  
Organization of ALGOL Programs.



**RETURN LETTER**

Title: RC8000 Utility Program  
Printzones

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