3 P. BRYANT

ICL International Computers Limited

User notice

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4345 OPERATING SYSTEMS GEORGE 3 AND 4 (11)

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GEORGE 3 AND 4 MARK 8.53 USER FACILITIES

This notice describes several new facilities in GEORGE 3 and 4 Mark 8.53 that particularly affect the user. There are other changes in Mark 8.53 that affect only the installation manager and/or operators and these are described in User Notice 46 to the manual *GEORGE 3 and 4 Operation Management*, TP4334.

Contents list

NEW CHARACTER SEARCHING FACILITIES FOR THE EDITOR

This enhancement provides two new formats for specifying the character position of an endpoint.

.S The next non-space character

.#*n* An absolute character address

Examples

1	T.S	Transcribe up to the next non-space character in the current record. (No effect if current character is non-space)
2	P.-S	Position backwards to the previous non-space character in the current record. (No effect if current character is non-space)
3	T#6.S	Transcribe up to the first non-space character in record 6
4	((R/▽/*/).S,1)E	This causes the leading spaces in all records from the current position to end of file to be replaced by *
5	T./FRED/,(P.S,T.1).#70,T.E	This causes all space characters between the string FRED and character 70 in the current record to be removed

REMOVAL OF TRAILING SPACES BY THE SCREEN EDITOR

The screen editor has been changed so that trailing spaces are removed from records displayed on the screen before these records are written to the *newfile*.

ENHANCED CONTEXT CHECKING BY THE IF COMMAND

The IF command has been changed to allow the following command contexts as conditions.

```
BREAKIN      (or BREAK▽IN)
PROGRAM
REMOTE
READER
OPERATOR
```

All command contexts can now be tested, as the only context not explicitly allowed, OFFLINE, is equivalent to USER AND NOT MOP.

Note that only commands issued directly from remote peripherals, or from macros issued directly from remote peripherals, are in REMOTE context; commands issued from within cluster jobs are not in REMOTE context. Thus the combination of REMOTE and USER contexts is not possible, and IF USER AND REMOTE is always FALSE.

SETPARAM TO DETERMINE CURRENT DIRECTORY

The SETPARAM command has been changed to allow CURDIR as the second parameter. This can be used only in USER context, and causes the specified parameter to be set to the user name of the job's current directory, without the initial colon.

Example

```
DY :OTHERUSER
(Other commands, possibly involving changes of level)
SP A, CURDIR
```

This causes the parameter %A to acquire the value OTHERUSER.

IMPROVED MESSAGE BUFFERING CONCEPTUAL MULTIPLEXER FEATURES

This enhancement remedies the following problems that have affected GEORGE's handling of message buffering conceptual multiplexers.

1 A program outputting a large amount of data to a conceptual could cause GEORGE to ignore overload warnings from the communications processors, thereby degrading the performance of the whole communications system

2 If a communications processor failed it was sometimes impossible to cancel attachments or to release conceptuals from the jobs using them

3 When identifiers which had been freed from a conceptual after a communications processor failure reverted to system use, they could be left in a state which made it impossible for GEORGE to use them and which might cause the system to break

Most of the changes are internal and should not make any difference to the use of conceptuals, except that these problems will no longer exist. The exceptions are some changes to the ONLINE and ATTACH commands, as follows.

ONLINE command

When an ONLINE command is given for a message buffering conceptual, GEORGE may have to wait for action by the communications processors whose identifiers are attached to the conceptual. If this takes more than 20 seconds, the following message will be sent to the monitoring file.

```
WAITING FOR RESPONSE FROM COMMUNICATIONS PROCESSOR
```

The WHATSTATE command will also give this information about the jobs.

GEORGE will normally continue waiting until the expected response is received from the communications processor, but if required the job may be abandoned rather than left waiting. If for example the communications processor is inoperable, the expected response could not occur.

Alternatively, if the ONLINE command was issued by a MOP job, the user may break in. One of the following messages will be sent to the monitoring file, depending on the stage reached by the command

1 BROKEN IN BEFORE ONLINE

2 BROKEN IN AND ABANDONED IN ONLINE

3 BROKEN IN AFTER ONLINE

In case 1, the conceptual is not on-line, and the command will be obeyed again if CONTINUE is given.

In case 2 the conceptual will be left on-line, but if the program is entered and attempts to use the conceptual some of the attached identifiers may appear to be ON TEST and will remain so until the communications processor sends the response for which the ONLINE command had been waiting. An IDENTIFIER FREE (Code 59) supervisory segment will be sent to the program to indicate when such an identifier becomes available for use.

In case 3 the action of the ONLINE command is complete, and the program will be able to use all the attached identifiers.

ATTACH command

If an attempt is made to ATTACH an identifier whose communications processor is inoperable, the command will be rejected with the error message:

UNIT U*z* IS INOPERABLE

If this happens, it is advised that the operator should issue a MOP OFF command for the communications processor before any attempt is made to make it operable and to use it again.

After an identifier has been freed from a conceptual, GEORGE resets it to a standard initial state and the identifier may not be attached again until this process is complete. As at present, an error message:

IDENTIFIER *n* IS BUSY

will be produced if an attempt is made to attach an identifier that GEORGE is in the process of resetting. If the communications processor is overloaded, so that the busy state may be expected to last for some time, the message will be extended to

IDENTIFIER *n* IS BUSY : UNIT *z* OVERLOADED

and if an ATTACH command is issued for an identifier which is in use by the system (for example, a MOP terminal which someone is using) the error message

IDENTIFIER *n* IS IN USE

will appear.

During an ATTACH command, it may be necessary for GEORGE to wait for some action to be carried out by the communications processor. If an operator-context ATTACH command has to wait for the communications processor for more than 20 seconds, it will send to the operator's console the message

ATTACHMENT OF IDENTIFIER *n* WAITING FOR RESPONSE FROM COMMUNICATIONS PROCESSOR

At this stage the attachment may be already recorded in the IDF, making it impossible to MOP OFF or to ATTACH a different identifier. So if the communications processor does not take the required action the attachment may be cancelled by using the CANCEL ATTACH command. This will cause the ATTACH to finish with the error message

ATTACHMENT CANCELLED

While an ONLINE or RELEASE command is in progress, there may be a short period of time during which GEORGE will be unable to accept new attachments for the conceptual; ATTACH commands will be rejected with the error message

CONCEPTUAL *name* IS BEING ONLINED OR RELEASED

This situation will last only for a short time while GEORGE's internal records of the state of the conceptual are updated, so if an ATTACH command is rejected in this way, repeating the command should cause the attachment to be performed.

Finally, the current error message to the ATTACH command

UNIT *z* IS MOPPED OFF

is replaced by the more accurate

UNIT *z* IS MOPPED OFF OR BEING MOPPED OFF

to reflect the fact that the MOP OFF operation may or may not have been completed when ATTACH is given.

REMOTE PAPER TAPE INPUT ON MESSAGE BUFFERING SYSTEMS

Some changes have been made to GEORGE's interpretation of input from remote paper tape readers forming part of RJE terminals and connected via 7900 series communications processors. These changes make a remote paper tape reader appear as much like a local paper tape reader as possible. The remaining differences are due to constraints in the hardware or the DCP, and are generally only apparent when unusual or non-standard characters are being used, or when particular features of the hardware are being exploited.

The changes affect termination of records and the representation of delta-shift character pairs, which are now as described below. Note that the description applies only to paper tape readers on RJE terminals, and does not apply to, for example, readers forming part of MOP terminal devices.

Record termination

If the paper tape is being read in ISO mode, the characters IS3(#7615) and IS4(#7614) will be taken as indicating the end of a record. (On 7020 terminals it is possible to select ISO mode or 1900 mode by means of a switch on the terminal.)

If the tape is being read in 1900 mode, records will be ended by any of the following characters

FE2	#7632	New line
FE3	#7633	Vertical tab
FE4	#7634	Form feed
FE5	#7635	Carriage return

FE3, FE4 and FE5 will also be stored with the data unless it is graphic (see below). Note that, as now, if FE5 followed by FE2, that is Carriage return, line feed, is used to terminate a line, the FE2 will generate a blank record.

Character representation

GRAPHIC DATA

All characters are converted to their graphic equivalents, that is, all lower-case characters are converted to upper-case, underline is converted to @, and delta-shift character-pairs are handled as follows

1 $,], ↑, ← are converted to a single character in the internal 64-character code

2 FE1 (Horizontal tab, #7631) occurring during INPUT with a TABS parameter is expanded into the appropriate number of spaces. An FE1 character occurring where no tabs have been specified is converted into a single space

3 FE0 (Back-space, #7630) and FE5 (Carriage return, #7635) are discarded, but their effect is taken into account when implementing horizontal tabs. (For FE5 the effect on tabs can only apply in ISO mode)

4 All other delta-shift character-pairs are discarded and ignored

NORMAL AND ALLCHAR DATA

All characters are stored unchanged except in the following cases

1 Transmission control and device control characters (#7621) to #7625 and #7600 to #7607) are discarded

2 FE2 (New line, #7632) is discarded

3 FE1 (Horizontal tab, #7631) will be converted into the appropriate number of spaces if a TABS parameter has been used, but otherwise will be stored with the data

4 FE0 (Back-space, #7630) and FE5 (Carriage return, #7635) are stored with the data, and will also alter the current character position used in implementing horizontal tabs

5 NULL (#7620) and DELETE (#7673) characters will be discarded from NORMAL data but left unchanged in ALLCHAR data. Note, however, that NULL characters may have been removed on input by the hardware (and may be added on output to remote paper tape punches)

Differences between remote and local paper tape input

The properties of input on remote readers that differ from that on local readers can be summarised as follows:

1 TC1 to TC6, BELL, FE0, FE1 (#7621 to #7631) and SHIFT OUT, SHIFT IN (#7636, #7637) do not terminate GRAPHIC records. In ISO mode, FE2 to FE5 (#7632 to #7635) do not terminate GRAPHIC records, but IS3 (#7615) and IS4 (#7614) do

2 In NORMAL and ALLCHAR data, FE3 to FE5 (#7633 to #7635) in 1900 mode and IS3, IS4 (#7615, #7614) in ISO mode always indicate the end of a record

3 NULL (#7620) characters may have been removed by the hardware, (and may be added on output to remote paper tape punches)

4 Transmission control characters cannot be input as data characters from a remote terminal

CROSS-CHECKING INFORMATION WITHIN SECURE MAGNETIC TAPE DESCRIPTIONS

More checking is now carried out on secure magnetic tape descriptions, such that if both a TSN and a local name are given in an ONLINE, RETURN or RENAME command, and if the generation number and/or reel number details are given as part of the name, these details will be checked against those in the directory entry.

It should be noted that, in addition to the more obvious consequences, this change has implications in the case where no reel number is specified. The absence of a reel number implies that reel zero is required, hence if the TSN and the local name without details are specified, a tape with non-zero reel number will not be picked up, but the following error will be given

LOCAL NAME AND SERIAL NO. DO NOT CORRESPOND

ENHANCED WHATLIST COMMAND

The WHATLIST command has been enhanced to provide the following new features.

1 The command can now be used by a user in respect of his own listfile requests, as well as by a cluster operator in respect of that cluster's requests or by the central operator in respect of all requests. Additionally, it can be used in conjunction with the OPERATOR command by a user with PASSIVOP privilege, to obtain any response that is available to an operator

2 The default response is now a count rather than a list of the outstanding listfile requests. The list can still be obtained by specifying an appropriate parameter

3 More flexible selection parameters are provided that, for example, allow selection of those listfile requests that require a specified

property, or combination of properties. Thus the central operator can obtain information, either a count or a list, concerning listfiles destined for a particular cluster

4 The output from WHATLIST can be directed to a file which is listed on a line printer. This listing is given priority if the command was issued from an operator's console

WHATLIST (WL) COMMAND SPECIFICATION

Function

Outputs to an operator's console, to the monitoring file system, or to a line printer a specified amount of information about a specified selection of the outstanding listfile requests.

Format

WHATLIST *<selection parameters><output level parameters><routing parameters>*

SELECTION PARAMETERS

Group	*Parameter*	*Listfile requests for*
A	JOB *jobname*	Specified job for current user
	jobname, username	Specified job for specified user
	username, jobname	Specified job for specified user
	USER *username*	All jobs from specified user
B	*LP	Line printer
	*TP	Paper tape punch
	*CP	Card punch
C	PROPERTY *<property name string>*	Peripherals with the specified properties

OUTPUT LEVEL PARAMETER

FULL

ROUTING PARAMETER

HERE
LIST
LIST (PROPERTY *<property name string>*)

Notes

1 The parameters are all optional and may be in any order, except that if either *jobname,username* or *username,jobname* are used, they must be the first two parameters

2 If FULL output is specified, the default routing is HERE in user context, but is LIST in operator context, or following the OPERATOR command

3 LIST always implies FULL

4 PROPERTY may be abbreviated to PR

Forbidden contexts

NOT OPERATOR AND NOT USER

Execution

The specified amount of information for the specified selection of the outstanding listfile requests is output to the cluster console, to a basic printer, or to the monitoring file system as appropriate.

When WHATLIST is used via the OPERATOR command, it is treated as if the source of the command were an operator's console, nominated for the job's current cluster.

A centrally issued WHATLIST obtains, in the absence of a PROPERTY selection parameter, information about all outstanding listfile requests. A remotely issued WHATLIST can obtain information about only those listfiles requiring one of the console properties for which the source of the command is the nominated console. In default of a PROPERTY parameter, it will be given information about those requests requiring the property attributed to the console.

SELECTION PARAMETERS

1 Only one parameter from each of the groups A, B and C may be specified

2 In user context, information is given about the outstanding listfile requests from jobs for that user only, and thus the only Group A parameter allowed in user context is JOB *jobname*.

OUTPUT LEVEL PARAMETER

1 If FULL is present or implied by the presence of LIST, the following heading is produced

```
USERNAME.JOBNAME  DEVICE  FILENAME
```

There will then be a line for each outstanding listfile request, giving its *username.jobname*, the device type, (*LP), (*TP) or (*CP), and the file description as given in the LISTFILE command. If any properties are required, the line will be followed by one or both of the following lines

```
PERMANENT PROPERTIES REQUIRED:- property name string
TEMPORARY PROPERTIES REQUIRED:- property name string
```

2 If FULL is neither present nor implied, the response is

n LISTFILE REQUESTS <*selection details*>

3 If there are no outstanding listfile requests covered by the selection parameters, the following message appears, whether or not FULL applies

NO LISTFILE REQUESTS <*selection details*>

ROUTING PARAMETER

1 If the parameter HERE is given, the output is sent directly to the cluster console in OPERATOR context or to the monitoring file system in USER context.

In OPERATOR context, FULL level output to an operator's console is terminated after that for *n* listfile requests and the following message appears.

```
WHATLIST OUTPUT TERMINATED
```

The value of *n* is normally 100 but the installation manager may change this by use of the restore-time macro WLOUTLIM (see User Notice 46 to *GEORGE 3 and 4 Operation Management*)

2 If the parameter LIST is given and there are outstanding listfile requests for the specified selection criteria:

(a) In USER context or when used with the OPERATOR command, the output is sent to a line printer

(b) In OPERATOR context, the output is sent to a file :OPERATORS.WHATLIST(*m*) which is listed and erased by internally issuing the command

```
RJ WLISTm,:OPERATORS,WLISTJDF
```

3 If a LIST parameter with properties is given, the listing will be sent to a line printer with the specified properties

Examples

WL Calls for a count of outstanding listfile requests

1 For all listfiles if from the central operator

2 For all listfiles destined for the cluster, if from the cluster operator

3 For listfiles destined for the current cluster and initiated by the user's jobs, if from a user

WL FULL,HERE	Calls for full information on the console or to the monitoring file about outstanding listfile requests, relating to a selection of listfiles as defined in the first example
WL JOB JJ,*LP	In user context, calls for a count of the outstanding line-printer listfile requests for the user's job JJ.

Error messages

z IS NOT A CORRECTLY FORMED NAME
z IS NOT AN OUTPUT DEVICE
FORMAT NOT ALLOWED IN z CONTEXT
ILLEGAL PARAMETER COMBINATION
PROPERTY NAME UNKNOWN
MORE THAN ONE CONSOLE PROPERTY
MORE PROPERTIES SPECIFIED THAN ALLOWED
CONSOLE PROPERTY NOT OWNED BY THIS CLUSTER
QUALIFER UNACCEPTABLE