

September 1, 1982

n/STAR V 2.244

Software Release Notice

Enclosed is the current release of the n/STAR Network Operating System for Molecular Computer DIRAC and Supermicro series, version 2.244.

Version 2.244 includes the following new features:

- o BDOS functions to get and set the time and date (with ECO #002)
 - o BDOS functions to attach and release the system printer
 - o a system event log
 - o support for the AP-8003 card
 - o MAINT option to generate a user/volume report
 - o system disk configurator
 - o despooler enhancements
-
-

Part Number: 87100101-2244

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INSTALLATION PROCEDURE

This procedure will upgrade an existing system to 2.244 from an older n/STAR release. Start with a n/STAR 2.244 distribution diskette and bootable diskette from a previous release. The bootable diskette must contain at least the files MOVCPM.COM and DDT.COM; and must have at least 9K of available disk space. Insert the bootable diskette into the floppy drive and connect your terminal to the diagnostic panel. Hit the break key to boot the diskette. Enter the following command

```
MOVCPM 56 *
SAVE 34 CPM56.COM
DDT CPM56.COM
```

Insert the n/STAR 2.244 diskette and enter the following commands:

```
ISYSGEN.COM
RO
IDBOOT.HEX
R900
IDBIOS.HEX
R4580
F5D,5D,20 ;clear the default fcb
G100 ;execute SYSGEN
<return> ;skip the read phase
```

Enter "A" followed by a return to write the boot-image to the diskette. You now have a bootable n/STAR distribution diskette. By copying the CP/M utilities from your original CP/M + n/STAR diskette to this one, you will have a new and complete CP/M + n/STAR diskette.

Boot the newly created CP/M + n/STAR diskette. The signon message should be one of the following:

```
DIRAC Diagnostic Diskette
DIRAC 30 Mbyte Diagnostic Diskette
DIRAC 60 Mbyte Diagnostic Diskette
DIRAC 150 Mbyte Diagnostic Diskette
Supermicro 8 Diagnostic Diskette
Supermicro 32 Diagnostic Diskette
```

followed by

```
56K CPM V2.2
```

To install the current release of n/STAR from an n/STAR distribution diskette, boot the diskette and enter the following command:

```
SUBMIT GENSTAR
```

Remove the diskette and reset the FP. The current release is now installed on the system.

ERROR CORRECTIONS

The following errors were corrected in this release.

- o The DOWN command sometimes issues the misleading message "batch job is active". Technically, this means that the file processor has some files open even though there are no users logged on. This usually occurs as a result of some despooling activity. Because the despooler polls a disk file periodically, it is possible for the DOWN command to detect an opened file even when the system is idle. The DOWN command has been modified to check the file processor several times before declaring that the system is active. This will reduce the chances of getting an invalid "batch job is active" message.
- o The DOWN command may alter a unit's initial command. This occurred when the DOWN command was executed from a terminal that was running in "Super User" mode and the file security system was installed.
- o The despooling utility did not always delete a spool file after it has printed it.
- o The LIST command did not release the system printer.
- o Initial baud rate settings did not take effect unless the LOGON command is used. The code to set the initial baud rates has been moved from LOGON to CCP. With this change, all terminals, including those not using the file security system, will be able to have initial baud rate settings.
- o N/STAR generated spurious BDOS errors on the floppy disc drive whenever the automatic search forward for a COM file encountered the floppy in the user's profile. This has been resolved by having CCP intercept and ignore BDOS errors while searching for a command file.
- o The TAPE processor sometimes failed to allow entries of some parameters on certain terminal types.
- o Hitting break on a terminal sometimes crashed the system. This problem has been fully resolved with changes to both the operating system and the FP firmware. The date code on the FP eeprom should be ~~074582~~ or greater.
070982
- o CCP sometimes generates a 'Bad Load' message when it is reading a program into memory. This problem only occurred on unsecured volumes.

NEW FEATURES

Please note that many of the new features in this take advantage of the system clock. In order to utilize the system clock, the Engineering Change Order #002 must be applied to the FP board. Without the ECO, the values returned by the get date and time functions would never change. For existing units, Field Change Notice #3 may be installed.

The following new features were added in this release.

- o New BDCS functions:

```
=====
=
= FUNCTION 104: SET DATE AND TIME =
=
=====
=
= Entry parameters: =
=   Register C: 68H =
=   Register DE: TOD Address =
=
= Returned Value: none =
=
=====
```

The Set Date and Time function sets the system clock. The TOD address is the address of a 4 byte block in the following format:

```
byte 0-1 : Date field
byte 2   : Hour field
byte 3   : Minute field
```

The date is represented as a 16 bit integer with day 1 corresponding to January 1, 1978. The hour and minute fields are stored as two BCD digits.

This function will reset the seconds counter to zero.

```

=====
=
= FUNCTION 105:  GET DATE AND TIME  =
=
=====
=
= Entry parameters:                 =
=   Register C:  69H                =
=   Register DE: TOD Address        =
=
= Returned Value:  TOD              =
=
=====

```

The get data and time function obtains the value of the system clock. The TOD address is the address of a 4 byte block to receive the TOD value. The format of the block is described in function 104 above.

```

=====
=
= FUNCTION 155:  GET DATE AND TIME  =
=
=====
=
= Entry parameters:                 =
=   Register C:  9BH                =
=   Register DE: TOD Address        =
=
= Returned Value:  TOD              =
=
=====

```

The Get Date and Time function returns the value of the system clock. The TOD address is the address of a 5 byte block to receive the TOD value in the following format:

```

byte 0-1 : Date field
byte 2   : Hour field
byte 3   : Minute field
byte 4   : Second field

```

The date is represented as a 16 bit integer with day 1 corresponding to January 1, 1978. The hour, minute and second fields are stored as two BCD digits. The only difference between this function and 105, above, is that seconds are provided.

```

=====
=
= FUNCTION 158: ATTACH LIST
=
=====
=
= Entry parameters:
=   Register C: 9EH
=
= Returned Value: none
=
=====

```

The Attach List function attaches the list device specified in the last Set List function or ASSIGN LIST:= command. BDOS does not return control to the calling program until the device is attached, thus suspending execution if the requested list device is attached to another unit.

The Attach List function is automatically called before the first data character is sent to the printer, thus applications do not normally need to use this function.

```

=====
=
= FUNCTION 159: DETACH LIST
=
=====
=
= Entry parameters:
=   Register C: 9FH
=
= Returned Value: none
=
=====

```

The Detach List function detaches the currently attached list device. If the list device is not currently attached, no action takes place.

This function is usually used to release the system printer after a print operation.

```
=====
=
= FUNCTION 160: SET LIST
=
=====
=
= Entry parameters:
=   Register C: AOH
=   Register E: List Device
=
= Returned Value: none
=
=====
```

The Set List function detaches the currently attached list device, if any, and saves the list device parameter as the device to attach on the next Attach List function.

The list device numbers have been assigned as follows:

- 0 : the local printer
- 1 : the system printer
- 2 : the spooling printer

Unlike MP/M II, this function does not attach the specified list device.

```

=====
=
= FUNCTION 161:  CONDITIONAL ATTACH  =
=                      LIST          =
=
=====
=
= Entry parameters:                 =
=   Register C:  A1H                =
=
= Returned Value:                   =
=   Register A:  Return Code        =
=
=====

```

The Conditional Attach List function attaches the list device specified in the last Set List function or ASSIGN LST:= command only if the list device is currently unattached.

If the requested list device is currently attached to another unit, the function returns a value of OffH in register A, indicating that the list device could not be attached. The function returns a value of zero to indicate that either the list device is already attached or that a successful attach operation was made.

```

=====
=
= FUNCTION 164:  GET LIST NUMBER    =
=
=====
=
= Entry parameters:                 =
=   Register C:  A4H                =
=
= Returned Value:                   =
=   Register A:  List Device        =
=
=====

```

The Get List Number function returns the value of the list device from the last Set List function or ASSIGN LST:= command.

The list device numbers have been assigned as follows:

- 0 : the local printer
- 1 : the system printer
- 2 : the spooling printer

- o Utility to set and display the system clock.

Use the TOD command to display the date and time on the screen or to reset the date and time. You must reset the date and time each time the system is turned on.

The TOD command has the following forms:

TOD Enter TOD to display the day, date, and time.

TOD P

Enter TOD P for a continuous display of date and time. Stop the display by pressing any key on the keyboard.

TOD mm/dd/yy hh:mm

Use this command to reset the date, and time. Enter the numeric representation for the date. Enter hh and mm in military time.

After you enter this command, the screen will display

STRIKE ANY KEY TO SET TIME

Strike a key at the moment you want the time entry to start.

- o Support for the 19.2K baud AP card (AP-8003).

SETBAUD, MAINT and CCP have been modified to support the 19.2K baud AP card.

- o System event logging.

System event logging is a feature that records the amount and type of use each User ID gives the system. The Event Log Report shows for each User ID: The amount of logged-on time, the program executed, and the application processor that was used.

System events are entered in the event log file. An entry will be made in the event log if the user

- Logs on.
- Logs off.
- Executes a program.
- Restarts the CCP.

Event logging may also be disabled. Use selection 3 in the MAINT menu to select the event log parameters. (See below for description of changes to MAINT.)

The Event Log file is in the reserved volume MAINT. You may control the maximum size of the event log file by specifying the number of 128 byte records that the file may contain. When the maximum size is reached, event logging will be suppressed and the screen will display

HISTORY.SYS IS FULL

To specify the maximum size of the event log file, use selection 3 in the MAINT menu.

In order to display or print the Event Log, n/STAR must read the event log file from the volume MAINT, and write the file in a formatted form to the current user drive. Selection 4 in the MAINT menu performs this process.

HISTORY.SYS is the name of the formatted file residing in the user drive. Each time you write a new HISTORY.SYS file, the current HISTORY.SYS file will be deleted.

The HISTORY.SYS file has the following format for each logical record:

type,user,unit,date,hh,mm,ss

where

type is LOGON, LOGOFF, CCP RESTART, or d:filename.typ in double quotes.

user is the User ID in double quotes.

unit is the decimal number of the application processor making the entry.

date is a decimal number indicating the number of elapsed days. Day 1 is January 1, 1978.

hh,mm,ss is the time the entry was made. The numbers are decimal. hh may be from 0 to 23. mm and ss may be from 0 to 59.

The n/STAR distribution diskette includes a sample program showing how the event log file might be

processed. The program is located in the file PRTLOG.BAS and is written in CBSO BASIC 1. This source code is provided for the convenience of those users who wish to customize the Event Log Report.

To display the Event Log, type

PRTLOG

after the user drive prompt, and press RETURN. The Event Log will appear on the screen.

To print out the Event Log, type CTRL-P, and press RETURN. The screen will display

(CTRL-P IS ACTIVE)

Then type PRTLOG, and press RETURN. The printer that is assigned in your User Profile will begin printing.

If the HISTORY.SYS file is not in the user drive, the screen will display

THE FILE 'HISTORY.SYS' WAS NOT FOUND
ON THE DEFAULT DRIVE. JOB TERMINATED

If you receive this message, at least one of the three following conditions apply:

1. You have not retrieved the event log file from the MAINT volume. (Use selection 4 in the MAINT menu.)
2. The event log is disabled. (Use selection 3 in the MAINT menu.)
3. Option 4 of MAINT was run, but you are logged onto a drive other than "A".

If "Y" is selected, the following will display:

	0	1	2
DIRECTORY:	320	640	1280
BLOCKSIZE:	16K	8K	4K

SELECT DISK CONFIGURATION (0-2) ()

Enter 0, 1, or 2. If the option selected for Drives 1,2, or 3 is different than Drive 0, a warning message will display and the user will be required to enter the correct information. Options displayed will be different for DIRAC 34, DIRAC 68, DIRAC 150, SUPERMICRO 32 and SUPERMICRO 8 systems. (see TABLE 1)

When the proper options have been entered, the configuration will display, with a prompt to proceed:

ALL PARTITIONS SHOWN ARE FOR 1 DRIVE ONLY

CONFIGURATION IS:

PARTI	TYPE	DIRECTORYS	BYTES/BLOCK	CAPACITY
0-5	PRIAM 3350	640	8k	4.9MB
6	SS SD FLOPPY	64	1K	243K
7	SS DD FLOPPY	128	2K	512K
14	DS SD FLOPPY	128	2K	512K
15	DS DD FLOPPY	256	2K	1.0MB

CONFIGURATION CORRECT ? Y/N ()

All partitions correspond to a single drive system. Partitions on drives 1 thru 3 are consecutively lettered with no gaps for floppy disc drives. The partition is shown as a numeric value rather than an ASCII letter to allow for future expansion to systems with more than 26 partitions.

Entering "Y" prompts the user as follows:

FUNCTION COMPLETE

Hit BREAK key to reboot

FUNCTION COMPLETE means the selected configuration table is written out to the selected drive on the configuration sector. If no table is written out to the configuration sector, then during the following system generation, GENSTAR will use the old BIOS format (and the old directory size limitations) rather than the new BIOS format to build the system. If there is more than 1 drive in the system, rerun SYSINT.COM to format and configure the disk tables. Make sure all drives are configured with the same directory and blocksize option.

After configuration is complete, proceed with GENSTAR system generation.

DIRECTORY/BLOCKSIZE OPTIONS TABLE

TABLE 1

DIRAC 34 14" 30MB	DIRECTORY: BLOCKSIZE:	320 16K	640 8K	1280 4K
DIRAC 68 14" 60MB	DIRECTORY: BLOCKSIZE:	320 16K	640 8K	1280 4K
DIRAC 150 14" 150MB	DIRECTORY: BLOCKSIZE:	512 16K	768 8K	1024 4K
SUPERMICRO 32 8" 30MB	DIRECTORY: BLOCKSIZE:	512 16K	960 8K	1920 4K
SUPERMICRO 8 5" 10MB	DIRECTORY: BLOCKSIZE:	320 16K	640 8K	1280 4K

* All drives in system must use the same directory/blocksize option.

SYSTEM GENERATION

Module to use: GENSTAR.COM Function: Overlay Disk Table
Generate n/STAR system

Using CP/M ver 2.2 boot up the Diagnostic diskette.

The following modules must be on the Diagnostic diskette:

POSTBOOT.COM	;overlay module
DBIOS3.HEX	;Dirac old format
DBIOS4.HEX	;Dirac,Supermicro new format
DBIOSN1.HEX	;Supermicro 8, old format
DBIOSN2.HEX	;Supermicro 32, old format

- * Assuming the system is a 30mb Dirac 34.
- * If there is no disk table on configuration sector, than floppy system will display:

Dirac Diagnostic Diskette
56k CP/M V2.2

- * and default to old bios format.

- * If there is disk table on configuration sector, than floppy system will display:

Dirac 30MB Diagnostic diskette
56k CP/M V2.2

- * and logon to the new bios format.

- * In either case, type 'GENSTAR' to create the new n/STAR v2.244 as is described below:

If the system has been newly formatted, or the Directory Size option of SYSINT has been run, the system will display:

NEW VERSION IS n/STAR V2.244

CONTINUE ? Y/N (Y)

FUNCTION COMPLETE

Entering 'Y' will generate the new system on disk. Entering 'N' will exit to the system without changing the disc.

* If GENSTAR is run again, system will display:

NEW VERSION IS n/STAR V2.244
OLD VERSION IS n/STAR V2.244

CONTINUE ? Y/N (Y)

FUNCTION COMPLETE

If GENSTAR finds configuration sector on drive 0, but not on drive 1, 2, or 3, then GENSTAR will display:

Drive 1 table is not initialized

If this occurs, rerun SYSINT.COM to initialize the disk table on that drive.

o Spooler Queue maintenance - QMAINT

Use the QMAINT command to view, reorder, or delete despool requests. The Queue Activity Report lists all the despooling printers and their condition.

To display the Queue Activity Report, enter

QMAINT

and press RETURN. To return to the user drive prompt, press RETURN a second time.

You may enter the commands described below. Press RETURN after each entry.

HOLD queue

Use the HOLD queue command to suspend a queue from further processing.

RELEASE queue

Use the RELEASE queue command to release the HOLD command on a queue and continue processing.

HOLD unit/port

Use this command to suspend an application processor or a single port on the application processor from further processing.

unit is the application processor number.

port may be:

- A Console port.
- B Printer port.

If you do not enter port, both ports will be in hold condition.

RELEASE unit/port

Use this command to release the HOLD command on an application processor or a port.

queue

To display the Queue Maintenance screen for a particular queue, enter the name of that queue.

The Queue Maintenance screen allows you to inspect and modify the activity for each queue. To return to the Queue Activity screen, press RETURN.

Note: Each request in a queue has the following form:

position) volume:filename.typ

where

position is the request location in the queue.

volume is the name of the volume that contains the file.

filename.typ is the unambiguous filename.

You may enter the commands described below. Press RETURN after each entry.

HOLD unit/port

(Described on the previous page.)

RELEASE unit/port

(Described on the previous page.)

CANCEL volume:filename.typ

Use the CANCEL command to delete a request from the queue.

TOP volume:filename.typ

Use the TOP command to place a request at the top of the queue.

BOTTOM volume:filename.typ

Use the BOTTOM command to place a request at the bottom of the queue.

UP volume:filename.typ count

Use the UP command to move a request up through the queue. count is the number of positions that the request will be moved. count is optional; if you do not enter count, the queue request will move up one position.

DOWN volume:filename.typ count

Use the DOWN command to move a request down through the queue. count is the number of positions that the request will be moved. count is optional; if you do not enter count, the queue request will move down one position.

CTRL-X

Press CTRL-X to a cancel a command. This is the same as the CP/M CTRL-X.

o New MAINT Utility

The MAINT utility has been modified to support event logging and the printing of user profiles and volume directories. This section of the 2.244 release document describes changes for the new MAINT.

The MAINT command allows the privileged user to maintain the security system. By making selections from the MAINT menu, you may:

- Change the system password.
- Create and maintain User ID's and User Profiles.
- Define and maintain Volumes Profiles.
- Define the event log parameters.
- Move the event log file to a user drive.
- Print User Profiles and volume directories.
- Establish application processor parameters.

The following sub-sections describe the new MAINT menu selections.

Change the System Password

If you select 0 in the MAINT menu, the screen will display

```
ENTER THE NEW SYSTEM PASSWORD (*      )
```

Enter up to eight characters, and press RETURN. The screen will then display

```
AGAIN PLEASE (*      )
```

Repeat the entry. This ensures that you did not make a typographical error while entering the new password.

If the two entries do not match, the password will not be changed.

If you do not want the MAINT command protected with a system password, enter a space (press the spacebar) for the new system password. Thereafter when you enter MAINT, the MAINT menu will automatically display on the screen.

User Maintenance

This menu selection allows you to create new User ID's and maintain User Profiles.

Select 1 in the MAINT menu. The screen will display a list of all the User ID's that are currently defined on the security system.

To update a User Profile, enter one of the User IDs on the screen, and press RETURN. (If the User ID is eight characters do you not press RETURN.) To create a new User Profile, enter up to eight characters, and press RETURN. The screen will then display the User Profile screen.

You may enter the commands described below. Press RETURN after each entry.

PW:=password

Use this command to change the user password. password may be up to eight characters.

drive:=volume;password

Use this command to assign a volume name and volume password to a user drive. To remove a volume from a user drive, enter drive but leave volume and password blank.

drive may be any one of the user drive letters shown on the User Profile screen.

* volume must be from a volume that has been established in the Volume Profile. Note: You may assign invalid volume names. Each time you enter an invalid name, however, n/STAR will display the following error message:

****WARNING** INVALID ACCESS**

password may be either the volume's read password or write password. password may be omitted if no passwords are specified in the Volume Profile.

IST:=printer

Use this command to specify the method of printing. printer may be one of the following entries:

SPOOL
LOCAL
SYSTEM

LOCAL is the default.

CMD:=initial

This command instructs n/STAR to call up a COM file each time the user logs on. This is useful to the user who has only one type of activity to perform on the system.

initial is the name of the COM file. For example, CMD:=WS will cause the Wordstar file WS.COM to execute automatically each time the user logs on.

DEL

Use this command to delete a User Profile.

Press RETURN after each entry. The screen will display an updated version of the User Profile. Press RETURN a second time to return to the Current User screen.

Volume Maintenance

If you select 2 in the MAINT menu, the screen will display a list of all the volumes currently defined on the security system.

To update a Volume Profile, enter one of the volume names on the screen, and press RETURN. (If the volume name is eight characters, do not press RETURN.) To create a new Volume Profile, enter up to eight characters, and press RETURN. The screen will then display the Volume Profile screen.

You may enter the commands described below. Press RETURN after each entry.

RPW:=password

Use this command to specify a read password for the volume. password may be up to eight characters.

WPW:=password

Use this command to specify a write password for the volume. password may be up to eight characters.

FP:=address

address is 255 for all current n/STAR installations.

DRV:=logical

Use this command to specify the logical drive letter.

USR:=number

Use this command to specify the CP/M User Number for the volume. The CP/M User Numbers range from 0 to 15.

SECURED/UNSECURED

SECURED is the default.

DEL

Use this command to delete a volume.

After each entry, press RETURN. The screen will then display an updated version of the Volume Profile. Press RETURN a second time to return to the User Drive prompt.

n/STAR allows you to assign the same volume name to the same volume location. If you assign two volume names to the same logical drive-CP/M user number combination, n/STAR will display

****WARNING**** LOCATION IN USE VOL:name
... HIT ANY KEY TO CONTINUE

where name is the name of the volume already assigned to that location. If you wish to keep the entry you have just made, press any key. If not, re-enter the volume name.

Event Log Configuration

If you select 3 in the MAINT menu, the screen will display the event log parameters.

System event logging allows you to specify the events that will be recorded in the Event Log and the maximum size of the log.

You may enter the commands described below. Press RETURN after each entry.

SWITCH:=selection

Use this command to select the events that will be entered in the log. The values of selection may be:

- 0 No event logging.
- 1 Include user LOGON and LOGOFF.
- 2 Include user LOGON, LOGOFF, and program execution.

0 is the default.

MAX:=number

Use this command to specify the maximum number of 128 bytes records that the system event file may include. number must be less than 65535. If you enter 0, the size of the system event file will be unlimited.

Get Event Log File

If you select 4 in the MAINT menu, the n/STAR operating system will read the event log file from the volume MAINT and write a formatted file to the current user drive.

The screen will briefly display

PROCESSING THE SYSTEM EVENT LOG FILE

and then return you to the MAINT menu.

The name of the formatted file is HISTORY.SYS and is placed on the current "A" user drive. The current HISTORY.SYS file and the current event log file in the volume MAINT are deleted. Therefore if you enter 4 again without logging off, the screen will display

NO HISTORY FILE

Print User and Volume Directories

This menu selection allows you to print the User Profiles for all the User ID's on the system and the volume assignments for the system.

If you enter 8 in the MAINT menu, the screen will display:

ENTER USER OR VOLUME (U/V):(*)

Enter either U or V. Do not press RETURN, an automatic RETURN will process your entry. Enter U to print the User Profiles. Enter V to print the volume assignments. Enter U to print the User Profiles.

If you enter V, the screen will display

SORT BY NAME OR LOCATION? (N/L):(*)

Enter N to sort the volume list by name. Enter L to sort the volume list by location. Do not press RETURN. The screen will display

INCLUDE USER XREF? (Y/N):(*)

Enter Y to include the users assigned to each volume. Enter N, if you do not want the users included. The printer will begin printing.

System Configuration

Enter 9 in the MAINT menu to establish the parameters of an application processor. The screen will display

ENTER A M/BUS UNIT ADDRESS (*)

Enter the unit address of the application processor. n/STAR currently allows units addresses from 0 to 255. 255 is always the address of the file processor. If the address is either one or two digits, press RETURN after the entry. If the address is three digits, do not press RETURN.

The System Configuration screen will display.

You may enter the commands described below. Press RETURN after each entry.

C:=baud

This command sets the baud rate for the console serial port. baud may be: 110, 150, 300, 1200, 2400, 4800, 9600, and 19200. The default is 9600.

P:=baud

This command sets the baud rate for the printer serial port. baud may be: 110, 150, 300, 1200, 2400, 4800, 9600, and 19200. The default is 9600.

CMD:=initial

This command allows you to establish the start-up and the break processor for the application processor. When initial is LOGON, the security system will automatically be invoked. (See Section 5.9 for a description of operation without the security system.) The application processors on new systems have LOGON as their initial command.

Note: The initial command in this MAINT selection is not the same as the initial command in a User Profile. You use an initial command in a User Profile to automatically call up a COM file when a User ID logs on.

DESPOOLER

If the application processor is to be used as a despooler, initial has the following form:

DESPOOL (param1) (param2)

where param1 describes the the printer attached to port A (console port) of the application processor, and param2 describes the printer attached to port B (printer port) of the application processor.

NOTE: The program SPOOL.COM is no longer distributed and is replaced by DESPOOL.COM. Existing initial commands for APs used for despooling must be changed.

param1 and param2 have the following form:

name,rate,protocal

name may be up to eight characters. More than one spooling printer may be assigned to the same name. In this case, printing is directed to the first printer available with that name.

rate is a decimal value from 0 to 6 defining the baud rate of the printer. The values of rate are:

0	110 baud
1	150 baud
2	300 baud
3	1200 baud
4	2400 baud
5	4800 baud
6	9600 baud
7	19200 baud

The default is the value set by the C:= or P:= commands.

protocol may be:

- 0 ETX/ACK protocal and a buffer-full position.
- 1 DTR handshaking or XON/XOFF protocal.

1 is the default. If the printer is capable of either ETX/ACK or XON/XOFF, 1 is the preferred entry.

For example, two printers are cabled to one application processor: A daisy wheel printer running at 9600 baud and utilizing XON/XOFF protocol is on port A, and a matrix printer running at 4800 baud and utilizing the ETX/ACK protocol is on port B. The command form would be:

```
CMD:=DESPOOL (DAISY,6,1) (MATRIX,5,0)
```