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* **RJE—II**
  * RJCONTINUE Exit   } Unattended
  * RJOUT   Exit } operation
  * RJIN   Exit } possible
  * Interrupt Mode
  * Continue Mode
  * 56 KB Support
  * Laser Printer Procedures For
    HP—2685 and HP—2688

I want to thank you for the opportunity to speak to you today about the status and performance of the HP-3000's datacomm products used to talk with IBM computers.

During 1983 we saw a major release of RJE in which a programmatic user interface was introduced. It is now possible for you to write three different types of user procedures that make RJE significantly more friendly. RJE was also certified to run at 56 KB. HP's Boise division took advantage of the two RJE enhancements and has developed a set of Laser Printer support software to print large volumes of output when the host supports the 3780 protocol (as opposed to HASP protocol).

The introduction of the 'Bonzai' laser printers (HP-2687/HP-2688) brings to three the total of laser based printers that can mix text, form or graphics together on one page based upon the IBM JCL selection of a form name. You now have an $11,000 or $30,000 or $90,000 laser printer solution based upon functional need and print volume.

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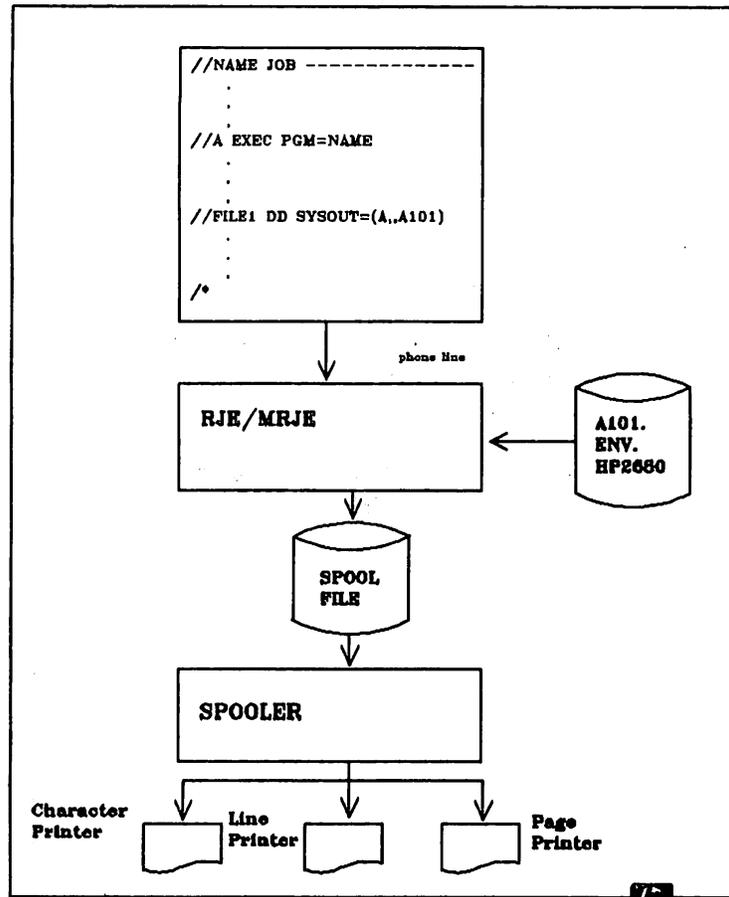
Both RJE and MRJE allow you to specify the name of a laser printer environment file as follows:

//REPORT DD SYSOUT=(A,,A101)

where A101 is the name of a form. On the HP3000, a disk file named A101.ENV.HP2680, is used to print the host output. Since the HP 2680 and 2688 are spooled (only) devices, the host output does not start to print until the last line of output is received. While this at first seems to be a detriment, it can be turned into a significant advantage in most environments.

Since RJE and MRJE both spool, it is possible to specify the number of copies to be printed. Thus, it only becomes necessary to tie up the datacomm line long enough to transmit a report once. Whether two or fifty copies are needed, you only need to transmit it once. The Boise Division RJE exits allow a spool file to be closed and reopened every 'N' pages, as specified by the user.

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In 1983

MRJE — Version 2

(1) 56 KB Support (As of A.02.00)
(2) Runs as a batch job (Eliminate 6 MPE SF's)
(3) User modifiable message catalog
(4) Laser printer support to associate an
     environment file to a formname
(5) Expanded Error Retry

In 1984

(1) Laser Printer support:
    • Based on formname,
      specify environment file
      number of copies
      spool file priority
      physical form
    • Periodic close/open of spool.files

(2) Other enchancements based upon user
    enhancement requests submitted as SMR's

MRJE also received a major product release in 1983. MRJE is no longer part of MPE. MRJE now runs as a batch job. This uncoupling of MRJE from MPE has eliminated six possible MPE software system failures. Significant laser printer enhancements were put into MRJE, and it was certified for 56KB operation. Yet another round of major laser printer enhancements will be introduced in our fiscal 1984 year.

MRJE is now running at a number of customer sites at 56 KB, in order to drive two laser printers at full speed. It has been found that in most environments where multiple part forms are printed, one 56KB line can keep two laser printers busy.

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In 1983

* IMF Pass-Thru II
    * Seven Function Keys
    * Repaint from "Point of Change"
    * Modified Data Tag on 2624B
    * Faster Response Time

* IMAS/3000 Introduced by Fjerndata
    * Non Hewlett-Packard CRT's
    * Excellent logging features
   * Superior response time

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A significant release of IMF was also made in 1983. Q-Delta 2 MIT contained
'Pass-Thru II'. You can now assign IBM PF (Program Function) key names directly
to seven of the HP CRT's function keys. The iritating repaint of the same screen
contents as new text was received and added to a screen has been eliminated. The
response time has been improved.

You may not know that IMF now supports both the SDLC and Bi-sync protocols for
the 327x/328x family.

A Norwegian firm name Fjerndata introduced a very well thought out replacement
for IMF 'pass thru'. This product is named IMAS/3000. It is not my intention to
feature a non-HP product in this talk, but such a product is worthy of mention.
You must first buy IMF/3000 and then add the IMAS/3000. Both pass thru products
can run concurrently.

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RELATIONSHIP OF HP'S FOUR IBM SNA DATACOMM PRODUCTS

NRJE (LU1)	IMF (LU1)	USER APPLICATION (LU2)
XPORT (PU2)		

NM

INP DRIVER
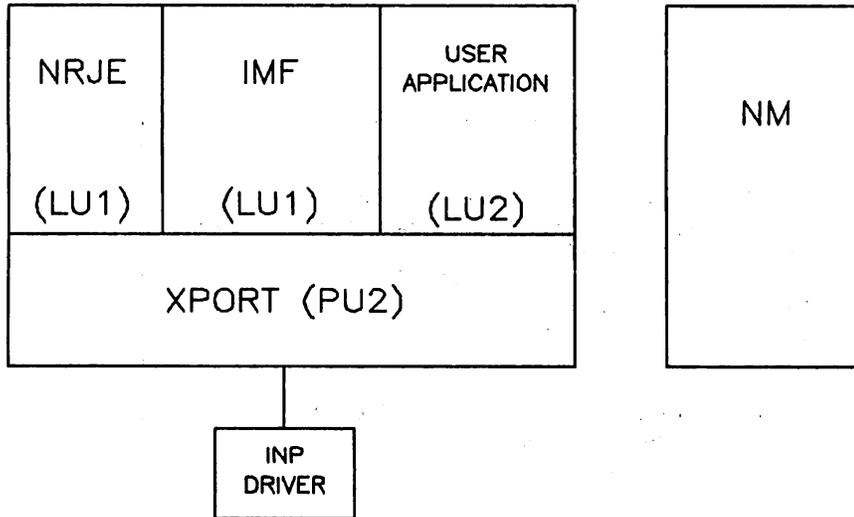
NRJE   8100 equivalent implementation of JES2 SDLC batch station

IMF   3270 SDLC Emulation

NM   Network Management Software

XPORT   8100 equivalent to Data

For years you have been complaining that HP has not properly supported IBM's SNA architecture. In 1984 HP will be making several major product introductions to add SNA PU2/LU2 support to the HP-3000 family. First we will introduce a batch job entry and print station product that we have chosen to name NRJE, or Network Remote Job Entry. You need the product software of the same name from IBM in order to run the HP software.

NRJE can run on the same datacomm line to the IBM host as does SDLC IMF. You can have both a batch and interactive interface to your host on a single phone line. The 'catch' is that you will need two INP's and a modem sharing device in order to concurrently run both products.

We recognize that it is both awkward and expensive to run two INP's connected to the same host over the same phone line. HP knows you would rather have just one INP and still be able to run both IMF as well as NRJE. So, the second product (which will be separate from NRJE) we call our "SNA Transport" software. SNA Transport is like a multiplexor that allows multiple PU's to concurrently run on the one INP.

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IBM Compatible CRT's

2628 adds HPWORD capability to HP-2625

Both CRT's have:
* IBM Remote Cluster Controller Interface
* Two display memories with "mode" toggle button
* Dual session capability
* Graphics option on ASCII port (HP-2623)
* New "Smooth" Scrolling
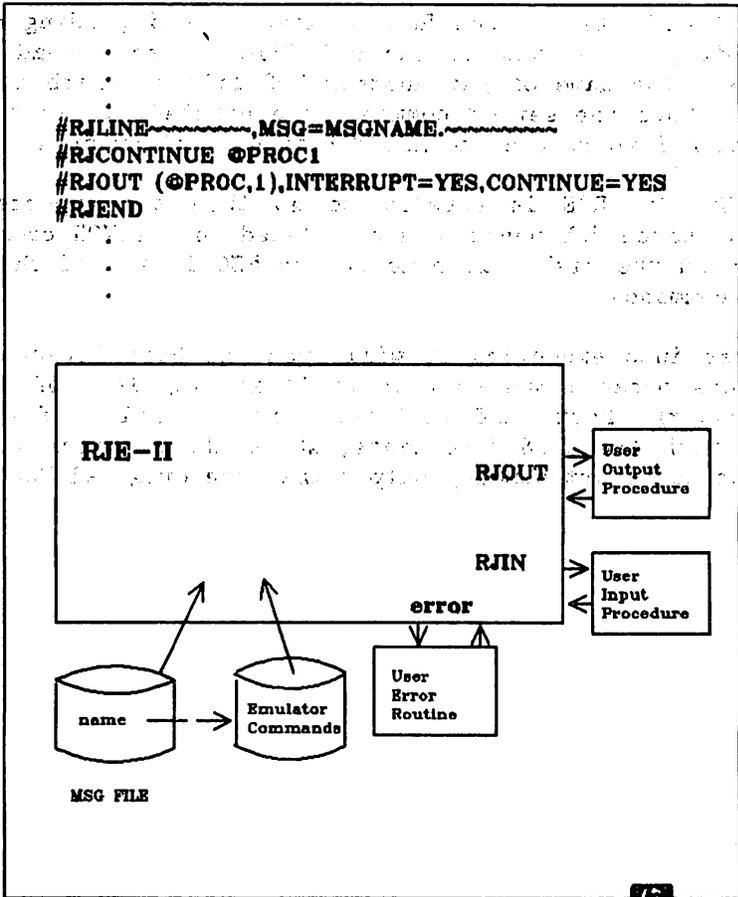* Optional DEC compatibility

Both CRT's can replace remote site IBM CRT's
and coexist with each other on the same
string of terminals

In 1983 HP also introduced two very exciting CRT's of great interest to our customers who wish to communicate both with their local HP-3000 as well as with an IBM host. Both the HP-2625 and HP-2628 are equipped with an IBM-3274 CRT interface on CRT port two (2).

The bottom left hand buttom on the keyboard allows the operator to switch back and forth from ASCII mode to 3270 mode. Two separate display memories allow the operator to truly run simultaneous sessions on two computers. While you are functioning on one CPU, any output from the other modifies the appropriate display memory. When you flip back to the other display space from the current space, you will see any new output delivered while you were functioning in the other display space.

There is now no longer any reason to tie up a large amount of desk space with both an ASCII and 3270 CRT sitting side by side.

Both of these new CRT's allow graphics to be added, including Tektronix compatibility mode. In addition, the HP-2628 can be used with HPWORD. The HP-2628 can be downloaded by HPWORD to function just like an HP-2626W CRT. Both CRT's support the DEC compatibility option on their ASCII interface.

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```
#RJLINE~~~~~~~~,MSG=MSGNAME.~~~~~~~~
#RJCONTINUE @PROC1
#RJOUT (@PROC,1),INTERRUPT=YES,CONTINUE=YES
#RJEND
```


RJE has been given a non-stop default to be waiting for host output any time it is not busy submitting a batch job. The default mode is interruptible any time RJE is idle, to allow a job input, and then goes back to waiting for host output.

This slide shows how RJE-II uses the concepts of INTERRUPT and CONTINUE to setup the default RJOUT. You stream RJE as a batch job consisting of four emulator commands: RJLINE, RJCONTINUE, RJOUT and RJEXIT.

The RJLINE command establishes the host link. The RJCONTINUE command names a user procedure to be given control anytime RJE encounters an error. Without the RJCONTINUE, the RJE program might terminate prematurely. The RJLINE command tells RJE the name of a MSG file to read for the names of other disk files with emulator commands. This is the INTERRUPT queue. The RJLINE procedure "chops up" the continuous host stream into individual output files.

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It is the INTERRUPT=YES that causes RJE to keep a read pending on a MSG file. Whenever RJE is idle, it is reading the MSG file. When a read completes, RJE expects to have read the name of yet another MPE file in which it will find RJE emulator commands. Once the set of commands are handled, it is the CONTINUE=YES command that causes RJE to resume the RJOUT that was interrupted.

The first INTERRUPT for RJE is usually to go thru the expected host signon procedure. So, the batch job needs to have placed the SIGNON commands in a disk file, and then placed the disk file name in the MSG file, and then RUN RJE with our four emulator commands.

As soon as RJE goes into execution it will open the host interface and find no output coming across because the host is still waiting for RJE to SIGNON. So, with no output from the host, RJE will read the MSG file. The MSG file will point to the file with the SIGNON commands, which the emulator will obey. Once signed on, the host may start sending output that the original RJOUT will handle.

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The HP-150 WIll Emulate A 3270

An option will be introduced in 1984 to plug the
HP-150 Personal Computer directly into an IBM-327x
cluster controller using an IBM coaxial cable. As
such the HP-150 will work on both local and remote
cluster controllers.

Because the HP-150 uses a coaxial interface to an IBM supplied (or compatible)
cluster controller, they are independant of the datacomm protocol used. This
makes the HP-150 particularly well suited to upload and download IBM host data to
PC disk.

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NOTES: