JADE Computer Note 77

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Copying of Source Files and Data Files from the JADE-NORD10 to the IBM and vice-versa.

Preface

The programs that can do such things were written by members of F58 to serve another purpose: the communication between the PADAC TMS9900 and various computers. The features which are useful to us are somewhat a by-product of the F58 efforts and their programs can do many things not described below. Since F58 clings to the principle of zero-documentation and hearsay-broadcast I could open a passable way through the F58 programs only pestering some members of the said group. Nevertheless I acknowledge the willingly given help and support from Messrs. Hochweller and Krechlock, F58; and from Mr. Butenschön, R2.

In the following note I shall first give a description of some programs, (to some length, but restricted as was said above), then give a short command list for quick reference. In the appendices I want to give some hints for the use of NORD data sets on the IBM.

Note: In the listings of interactive operations, the keys to be pressed by the user are underlined.
Lowercase letters in examples need replacement by the user's own codes, descriptors, etc.

1) The Service Program in the NORD10.

Warning: Do not use it when JADE experimental data are transmitted to the IBM, i.e. when JDAS takes data with IBM transfer!!

The program runs as a real-time program. To start it, log on under RT at the terminal No. 37 next to the Gould-Plotter in the corner of the software-room. (Nowhere else!) Proceed as follows:

```
ΘFIX 63↓                    (Θ for @,  ↓ for return)
ΘRT SERVC↓
ΘLOG↓
```

Follows about a screen full of output: (see next page)

Note: In this program mistyped input can be corrected with ⟨ctrl⟩+A as before, but the response on the screen looks slightly different.

```
-----------------------------
-  TMS 9900 SERVICE PROGRAM  -
-----------------------------

         ( some lines )

1 : COMMUNICATIONS WITH IBM          <------  Reentry after timeout.
2 : COMMANDS WITHOUT USING IBM                (see below)

--->      1   > 1↓
```

After entering the 1 as indicated above a line appears which in the following will be called the NORD m-line:

MESSAGE ("CTRL+C" : TAKE LAST COMMANDS):

After the NORD m-line has appeared the program is always ready to accept messages (abbr. msge's) for the IBM. Such a message consists of one or several lines of text (with one ↓ to terminate a line) and an empty line, or equivalently an extra ↓, to send the message off. A one-line simple command looks like this:

command↓↓

A single ↓ entered after the NORD m-line sends an empty msge. It can be used to tickle the IBM for a return msge. Note that the IBM never sends a msge by its own, but only in response to a msge from the NORD. Any return msge is output at the terminal, followed by the NORD m-line.

After a message text is sent offthe terminal input is blocked until the response from the IBM arrives.

Ending the session at the NORD10:
When everything is said and done, press Ctrl+Z to stop the program. The response is something like THE END. Afterwards (don't forget!) log on again under RT and proceed:

ΘUNFIX 63↓
ΘLOG↓

When no msge is sent for more than 5 minutes, the IBM link is released, a Timeout message is output, and the NORD program starts again almost from the beginning (see arrow near top of this page). Proceed with entering a 1↓ . Nothing is changed however on the IBM side. The module from before the timeout is still active.

2) The IBM Programs

The msges to the IBM can only be understood (there) if the proper IBM modules are loaded The various modules with which we deal can be distinguished by their response to the empty msge or to HELP↓↓. Those modules are:

A) The R2 Online Monitor. It is activated and other modules are stopped by the m

CHANGE↓↓

Its response after starting and to the empty msge is the line

GIVE MESSAGE

and to HELP↓↓ is

M06 JAD F58SV EXPNORM1 OS 10622622

resp. JADE0

This is information about the on-line connection. The third word is the name of the running on-line job. JADE0 is the JADE online program, F58SV is the F58 service program, whither we proceed as follows:

START F58SV↓↓

B) Thus we enter the On-Line Job Starter Program. Its first response (after possibly some seconds) is

START jobnm REQUEST ACCEPTED.

Subsequent empty msges prompt the response

ONLINE JOB STARTING

until the job is started and th R2 Online Monitor takes over again responding

GIVE MESSAGE

Proceeding LOAD SS↓↓ with the response REQUEST ACCEPTED loads the

C) F58 Service module. Its response to the empty msge is

*** NO COMMAND TEXT ? ***

*** PROCESSING TERMINATED ***

HELP↓↓ brings forth a real list of helpful hints. Any other proper command list (some of them described below) when sent and executed gives

*** SUCCESSFULLY COMPLETED ***

When the user has finished his copying, he should enter

CHANGE↓↓ , and after the GIVE MESSAGE response of the R2 Online Monitor enter START JADE0↓↓ (Jade-Null) to restart the JADE program for data-taking, and only then press Ctrl+Z.

3) The COPY Commands

When the F58 service module is loaded a typical command list to copy source file can be entered like this:

```
FROMEXP (directry.user)source:SYMB↓
TOIBM userid.libname(membname)↓
COPY↓↓
```

or

```
FROMIBM ......
TOEXP ......
COPY↓↓
```

For the IBM-side no apostrophes! The library "libname" must already exist. For TOIBM "membname" can be a new or an old member, which will then be overwritten. The members copied to the IBM are directly NEWLIB-compatible.
On the EXP-(NORD-)side all file conventions hold, i.e. abbreviations allowed, or "directry." may be omitted for disc-resident files. However it is not possible to create a file with quotation marks. Furthermore, to copy files from IBM to NORD, the user has to establish a "friend-write-access" for the user RT. Do this sometime at some terminal and once for good:

Logon under the desired user name and proceed:

```
ΘCREATE FRIEND↓
FRIEND NAME: RT↓

ΘSET-FRIEND-ACCESS
FRIEND NAME: RT↓
ACCESS (R..... OR N): RWA↓

ΘLOG↓
```

For copying data files the conditions are different. To avoid complications the user should only copy data files with INTEGER data, because the floating-point representations on the NORD and on the IBM are different. The typical message list is

```
FROMEXP (directry.user)dlist:DATA↓
TOIBM userid.dsname.subname↓
COPY/DATA↓↓          (optl.)
```

On the NORD side the conventions are the same. On the IBM the dataset must be allocated before as a sequential dataset of sufficient size. All other parameters are overwritten during the Copy-action. Old data in the dataset will be overwritten. The copied data are written in records of length 4096 bytes plus an odd record at the end if the original dataset does not consist of a multiple of 4096 bytes. See App. B about how to read the copied data in a FORTRAN77 program.

4) Quick Reference

A typical screen image is given with some abbreviations. Conventions as before.

Use terminal 37! and logon under user RT.

ΘFIX 63↓

ΘRT SERVC↓

ΘLOG↓

Enters a full page, ending with:

---> 1 > 1↓

MESSAGE ("CTRL+C" : TAKE LAST COMMANDS): ← This line will be referred to as (m-line) below.

CHANGE↓↓

GIVE MESSAGE

(m-line)

START F58SV↓↓

START F58SV REQUEST ACCEPTED

(m-line)

↓ Press ↓ every few seconds. At first the response is

ON-LINE JOB STARTING ←

(m-line) When the response is "GIVE MESSAGE" in this line, proceed

LOAD SS↓↓

LOAD SS REQUEST ACCEPTED

(m-line) For a test,

press: ↓ The response should be:

*** NO COMMAND TEXT ? ***

*** PROCESSING TERMINATED ***

(m-line)

Now write a good message list as described in ch. 3. When it is sent off with ↓↓ and everything works well, then after some time, during which the terminal input is blocked, the message list is repeated and the line added

*** SUCCESSFULLY COMPLETED ***

Avoid typing errors by all means! They might lead you into mazes or wildly astray.

When all files are copied, proceed:

(m-line)
CHANGE↓↓

GIVE MESSAGE

(m-line)
START JADEØ↓↓

START JADEØ REQUEST ACCEPTED

(m-line)
Proceed as in the center of the previous page. After the response
GIVE MESSAGE

(m-line)
press <ctrl>+Z

---- THE END ---

Press <esc> and log on again under user RT
ΘUNFIX 63↓

ΘLOG↓

That's it !!

Appendix A:

Most important differences between NORD10-Fortran and Siemens FORTRAN 77:

	on the NORD	on the IBM
Type declarations:	INTEGER	INTEGER*2
	DOUBLE INTEGER	INTEGER*4
	REAL	REAL*4
	etc.	
Loop control	DO FOR ix =...	not allowed. Use stan-
	ENDDO	dard DO loop
Output statements	OUTPUT list	PRINT *, list

FORMAT characters:		
Integer with leading zeroes:	Jn	In.n
Bare X, one blank	X	1X
Quasi-binary	O (octal)	Z (hexadecimal)
Free real form	not allowed	G

Appendix B:

How to read records of unknown length in FORTRAN 77:

Declare an array which is certainly longer than the longest record, e.g.

```
      INTEGER*2 array(4096)
```

Before the first READ:

```
      CALL ERRSET(213,256,-1,0,0,0)
```

to suppress error msges and error branchings if the record is shorter than the array.

In the READ-Loop:

```
      READ(n,END=stend,ERR=sterr) array
stx   CALL REDLEN(lenblk,iret)
      IF ( iret .NE. 0 ) GO TO stx
```

"iret" should be zero. If not, an error has occured. Try again the CALL, maybe with an error count to avoid dead loops. If o.k. "lenblk" contains the record length in bytes. Grind the array down!

The errors 213 are however reported in the FORTRAN 77 error summary.