RSX

MULTI-TASKER

February 1985 Issue

RSX Multitasker

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From the Editor

        This month, two new columns debut in the Multitasker: The
Software Clinic and The Bag of Tricks: MACRO-11. Ed Cetron will
be the Chief of Staff at the Clinic.   Similar to the very
successful clinics held at the National Symposia, Ed will try to
answer your questions. The rules for the Clinic are explained in
the column.   The Bag of Tricks: MACRO-11 is Bruce Mitchell's
column. Bruce will reach into his bag of tricks and share them
with us. He invites readers to share their handiwork with us.

        Terry Medlin, RSX SIG Chairperson reports on SIG activity at
the past Symposium at Ahaheim.

        One of the goals of the SIG is to share information on RSX
with all RSX users. Gary Maxwell has transcribed all of the
questions and answers from the Anaheim Q & A Sessions for the
Multitasker. Many thanks to Gary for his hard work.

        Mark Hartigan and Bart Lederman explain how to install DCL as
a Catchall task on RSX systems. This very interesting article
allows the terse MCR commands to be used by experienced users while
letting new users issue more descriptive commands via DCL.

        On the lighter side, the RSX SIG is searching for a Mascot.
One possibility is a dragon (dinosaur) emerging from an egg. This
candidate has recently appeared on a tee shirt sold at Anaheim.
Please see page 32.   What do you think?   Send suggestions,
comments, and drawings to the Multitasker.

                                Dominic DiNollo
                                Loral Electronic Systems
                                Engineering Computer Center
                                Ridge Hill
                                Yonkers, New York 10710

Ask a Question

The PDP-11 has always been a great laboratory computer, and the Pro 350 is a PDP-11. If only you could hook it up to laboratory instrumentation. There is a real time interface (RTI) module, which has two async serial (TT:) ports, a parallel port, and a GPIB/IEEE 488 port. No analog. Digital just announced the Analog Data Module, which hooks up to the parallel port of the RTI, but it only does analog input.

I need a couple of channels of analog input and a couple of channels of analog output with a real time clock on a module that either hooks up to the RTI or plugs directly into the Pro's backplane. Does anybody know where I can buy one? Am I the only one who wants one? Help!

I would like to hear from you people out there who do instrumentation with PDP-11s. I will collect all responses, summarize them, and send them to Digital, the Decus newsletters, and the major third party real time interface manufacturers. There is strength in numbers. Please reply if you are at all interested in doing instrumentation with a desktop PDP-11. Your names will be held in strict confidence.

1. Would you like to connect laboratory instrumentation to a Pro?

2. If not, Why not?

3. Is the RTI or RTI and ADM adequate for your needs?

4. If not, what do you need?

5. What third party interfaces have you bought?

6. What interfaces have you built?

7. What interfaces do you know of?

8. Comments?

Please reply to:

Anthony E. Scandora, Jr.   312-972-7541
Argonne National Laboratory   FTS 972-7541
CMT 205
Argonne, IL 60439

Telephone Facilities

To the RSX User Community

    Our installation has a PDP 11/44 running RSX-11M+ that is used
for software development. We would like expand our telephone
access for our programmers. We currently have one modem and
telephone line on a DH/DM multiplexor port. We would like to have
4 telephone lines installed immediately and the ability to add more
lines (up to 16) in the future. With the added telephone access
comes increased concern for security. We would like to implement a
system where the programmer calls the computer and identifies
himself. The computer would then hang up the phone and dial the
programmer using a number obtained from a table. This type of
scheme would address most of our concerns about security. Since I
have no experience setting up telephone facilities I'm asking the
RSX user community for help in answering several questions about
this type of scheme.

    Is this a workable scheme? Do I need to purchase hardware or
can I do this with software using our current hardware (DH/DM
controller with autodial modem)? If software is available who has
it (DECUS, DEC, or other vendor)? What other schemes are people
using?

    If you can answer any of these questions please respond in the
Multi-Tasker or to me directly. I can be reached at (607)
729-6531.

                        Sincerely,

                        Bob Freeborn
                        Savin Corp
                        PO Box 4500
                        Binghamton NY
                        13902

The Software Clinic

Conducted by Ed Cetron
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This is the first installment of a new column called 'The Software Clinic'. The recent popularity of the software clinic which is held at the national symposia, indicates that those of you who can't make the symposia would very much like to have access to the same sort of assistance.

The format (rules) will be:

1. You send me your question or request for information. I will accept questions of any level, from the novice to the advanced. In addition, questions of the 'I need a program to do XXXXXXXX. Is one available from DIGITAL, DECUS or somewhere else?' variety will also be accepted. All questions will be answered in the order received. If I can immediately answer the question, I will. If I can't, I will still run the question and ask for reader response (and I also welcome reader response on questions that I have answered). There will be limited access to the RSX developers for questions that seem to baffle everyone. NOTE: THIS IS NOT A COLUMN WHICH IS TO BE USED TO ASK ABOUT RSX POLICY DECISIONS AND IT IS NOT A DIRECT LINE TO THE RSX DEVELOPERS.

2. My address is above.

3. I reserve the right to edit any questions in order to make them more general or more specific in order to convey the most amount of information to the readers. I also reserve the right to abbreviate questions since my typing speed is sorely limited.

4. I will NOT, in general, answer questions on an individual basis.

5. This column will work ONLY if you write in with questions. I don't have the time, patience, or creativity to continually invent questions.

Question 1. I just migrated to RSX-11M-Plus from 11M. Several of my macro programs no longer work when I attempt to use I/D space. They seem to work fine in a non-I/D mode.

Answer 1. A common misconception about I/D space is that all
you have to do to use it is to add the /ID switch during the
task-build phase. If the program uses a high-level language which
supports I/D space then all you do IS add the I/D switch. However,
several languages (DECUS C and MACRO-11 for example) do NOT
automatically generate I/D space compatible code. An I/D space
task will ALWAYS go into D-space in order to obtain data
expressions.   If the MACRO program is not written with seperate
PSECTS for the data, the appropriate data address will not be found
or a wrong one used.

        For example:

```
        .psect start
start::
        mov     #34.,data
                .
                .
                .
                .
data:   .word       0
                .
                .
        .end
```

        will work just fine in a non-I/D mode. However, in I/D space
mode, the address indicated by the symbol data in the move
instruction is NOT the same location as represented by the label
data.   The value 34. will be placed in some location in D-space,
possibly destroying data that is already there.   A mov data,r1
might or might not put 34. into r1 depending on the intervening
instructions.

        The correct code, which will work in I/D mode or in regular I
mode adds a special PSECT for the data:

```
        .psect start,i
start::
        mov     #34.,data
                .
                .
                .
                .
        .psect  startd,d
data:   .word   0
                .
                .
        .end
```

Remember, putting data in an I-space PSECT is valid ONLY when not using I/D space and even then it is not considered good programming practice.

Question 2. How do I connect multiple terminals to my PRO?

Answer 2. See the November multi-tasker for one method. Another method involves using a new product called PRO-PARTNER. This allows you to have full menu and DCL at the second terminal. Other methods only allow DCL access at the second terminal. I saw a presentation of PRO-PARTNER in Anaheim and it looks wonderful. I will try to print more homebrew information if someone can give me some - I don't have a PRO to experiment with.

Question 3. My field service engineer just finished doing a preventive maintenance on my 11/44. Everything worked well until I tried to boot RSX-11M-Plus. It would load everything fine and give the message

RSX-11M.......xxxxKW

etc.

This indicated that SAV was working just fine. But after printing the line

MOU DL0:RSX11MP

the system would hang. We tried several backup copies of the RL02 and none worked. We then retried booting XXDP+ [the diagnostic monitor - Ed.] and it worked just fine. We finally turned off the machine and let it sit for an hour and then all was well. What happened??

Answer 3. I have seen this problem several times on my 11/44. I have spent hours trying to track it down. The apparent reason is that one or more of the diagnostic programs clears then low three bits of Memory Management Register SR3 which allow the use of Kernel, Supervisor, and User I/D space. SAV sems to run fine in just I-mode but when the I/D executive actually starts, or and I/D program starts to execute, there is no D-space mapping available and everything goes romping randomly through memory. If anyone has more evidence, comments, or symptoms, please send them in. The solution, as you found, is too completely power the CPU down after diagnostics.

That's all the questions for this month. I am looking forward to answering some real ones.

The Bag of Tricks: Macro-11

Bruce R. Mitchell
Machine Intelligence and Industrial Magic
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Hudson, WI 54016

Almost every RSX macro programmer has a bag of tricks which he considers his own special joy. These routines may be nothing more useful than his own version of $CBTA, to convert binary to Roman numeric; but they are invariably well coded and documented, because they are "his" routines, and will be used over and over again.

This column will cover those bag-of-tricks routines, and will appear in the Multi-Tasker as space permits. All MACRO programmers are encouraged to submit their favorite routines to the Multi-Tasker so that these useful, interesting, or just plain bizarre tricks can be put out before the SIG in general for the admiration and edification of all.

In this month's column, we have something which the RSX Implementers apparently never thought would be that useful to end-user coders: A day of the week routine. Ah yes. Certainly one can get the time and date formatted neatly by $EDMSG or other such routines, but one cannot get the day of the week so easily - a much desired feature for doing output page headers.

This routine was stolen from the Macro assembler object library itself (so it _must_ be good!), disassembled, cleaned up, modified and recommented for use in other MACRO programs. Because the author tends to separate data and code structures in his programs, the labels have been made so that the data and code can be readily separated within a single source file.

The output from DAYWEK is a pointer in R0 to an .ASCIZ string containing the name of the day of the week. This is convenient for use of $EDMSG or simply for copying into a target field with a MOVB - TSTB - BNE loop.

```
                .SBTTL        DAYWEK   Identify Day of Week


;   DDDDDDD          AAAA      YY    YY    WW        WW    EEEEEEEEE   KK        KK
;   DDDDDDD          AAAA      YY    YY    WW        WW    EEEEEEEEE   KK        KK
;   DD     DD       AA  AA     YY  YY      WW        WW    EE          KK    KK
;   DD     DD       AA  AA     YY  YY      WW        WW    EE          KK    KK
;   DD      DD     AA    AA     YYYY       WW        WW    EEEEEEE     KK KK
;   DD      DD     AA    AA     YYYY       WW        WW    EEEEEEE     KK KK
;   DD      DD    AAAAAAAAAA     YY        WW   WW   WW    EE          KKK KK
;   DD      DD    AAAAAAAAAA     YY        WW   WW   WW    EE          KKK KK
;   DD     DD     AA      AA     YY        WWWW    WWWW    EE          KK        KK
;   DD     DD     AA      AA     YY        WWWW    WWWW    EE          KK        KK
;   DDDDDDD       AA      AA     YY         WWW     WWW    EEEEEEEEE   KK          KK
;   DDDDDDD       AA      AA     YY         WWW     WWW    EEEEEEEEE   KK          KK


;   DAYWEK - Identify Day Name of Current Date
;
;   This subroutine returns a pointer to an ASCIZ string containing
;   the current day of the week.  Adapted from the RSX routine used
;   in the macro assembler.
;
;   Inputs:  None
;
;   Outputs:  RO - Pointer to ASCIZ string
;
;   Register dispositions:  RO destroyed
;
;   Variable dispositions:  DAYTIM buffer modified


;   GTIM$ data buffer

DAYTIM:     .BLKW    8.


;   Day of the week name table

DY0:         .ASCIZ    \Monday\
DY1:         .ASCIZ    \Tuesday\
DY2:         .ASCIZ    \Wednesday\
DY3:         .ASCIZ    \Thursday\
DY4:         .ASCIZ    \Friday\
DY5:         .ASCIZ    \Saturday\
DY6:         .ASCIZ    \Sunday\
       .EVEN


;   Day of the week pointer table and contiguous cumulative day table
```

```
                .WORD     DY5                    ; Saturday
                .WORD     DY6                    ; Sunday
                .WORD     DY0                    ; Monday
                .WORD     DY1                    ; Tuesday
                .WORD     DY2                    ; Wednesday
                .WORD     DY3                    ; Thursday
                .WORD     DY4                    ; Friday
    DAYMON:     .WORD     -1                     ; January
                .WORD     30.                    ; February
                .WORD     58.                    ; March
                .WORD     89.                    ; April
                .WORD     119.                   ; May
                .WORD     150.                   ; June
                .WORD     180.                   ; July
                .WORD     211.                   ; August
                .WORD     242.                   ; September
                .WORD     272.                   ; October
                .WORD     303.                   ; November
                .WORD     333.                   ; December


    ;   Subroutine code

    DAYWEK:     JSR       R5, .SAVR1             ; Save registers 1 - 5

        MOV       #DAYTIM, R5                    ; Move GTIM$ buffer address into R5
        GTIM$S    R5                             ; Get time from system
        MOV       (R5)+, R0                      ; Load year into R0
        SUB       #110, R0                       ; Subtract 72. from the year
        MOV       (R5)+, R4                      ; Load the month into R4
        ASL       R4                             ; Multiply the month by 2
        SUB       #2, R4                         ; And convert it to 0-based
        MOV       (R5), R5                       ; Load the day of month into R5
        MOV       R0, -(SP)                      ; Save the munged year on the stack
        DEC       R0                             ; Decrement the munged year
        ASR       R0                             ; Divide it by 2
        ASR       R0                             ; ... by 4
        ADD       (SP), R0                       ; Add the munged year to the year/4
        INC       R0                             ; And increment it
        ADD       R0, R5                         ; Add that value to the day of month
        BIT       #3, (SP)+                      ; Is it a multiple of 4 (leap year)?
        BNE       10$                            ; If not, skip around

    ; Leap year; special treatment for months past February

        CMP       #2, R4                         ; Is the month past February?
        ADC       R5                             ; If so, add the carry to R5

    10$:        ADD       DAYMON(R4), R5         ; Add the num of days since 1/1 to R5

    20$:        SUB       #7, R5                 ; Subtract days per week from R5
        BPL       20$                            ; And continue until it goes negative
```

```
    ASL    R5                        ; Multiply remainder by 2
    MOV    DAYMON(R5), R0            ; Point at day of week address in tab

    RETURN                           ; Return to the caller


    .END
```

Symposium Report for Anaheim

Terry Medlin
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Anaheim was the biggest symposium ever! A total of some 6,800 people broke all the prior records and having to pick among 30 odd sessions for each hour of the day was a real treat. Liz and I had our hands full trying to cover sessions, coordinate the suite, etc., and retain our sanity, but we loved evry minute of it. Liz did everything from chair sessions, to setup dinners, to coordinate activity in the suite. She was great and her involvement made symposium that much better.

Starting off the symposium were the traditional pre-symposium seminars (PSS). Hans Jung handles the seminar planning activities for our SIG. As you will see he did an excellent job since the RSX SIG has three very successful seminars on:

RSX Internals	given by	Brian McCarthy
Industrial Automation	given by	Ed Cetron
Public Domain Software	given by	Glenn Everhart

These teachers deserve special thanks for the time and effort they put into the preparation and delivery of these seminars. Having more teachers is helpful and Glenn used this technique in his seminar by inviting many people to assist. As we plan for future symposia, your input on future seminars would be welcome. Simply write me a letter!

The sale of our session notes started off the week of presentations. We sold out on the first day due to heavy pre-sales during symposium registration. The notes are ALWAYS a big item due to their proven usefulness and information contect. You should know that Dom DiNollo was our session notes editor for Anaheim. Dom with the help of the speakers put together an impressive set of material. A special word of thanks is due Gary Oden, our DEC

counterpart, and the members of the RSX development team who participated heavily in this effort.

The RSX SIG was fortunate to have had almost all its sessions in one location which simplified the life of RSX users. Anaheim sessions were split across two hotels and a convention center which gave us all exercise. Jim Hopp, our symposia coordinator, did a splendid job of scheduling on our behalf. He deserves thanks for all his many efforts.

Anaheim had its sad but happy moments. Al Watson who has edited our newsletter for over a year now decided to step down from that post. In recognition of his many contribution to the SIG, I presented a nice sweater (DECUS of course) to Al at the beginning of his famous session of IND. Thanks to Al - we wish him well in the future. Thanks also to Gary Maxwell who handled the gift.

Al's departure has resulted in the following alterations. Dom DiNollo will become the Multi-Tasker editor and Dan Eisner will become the session notes editor. These two individuals will continue to produce the quality products that this SIG has always had.

Happiness is a future for multi-processor systems! Many of us continued the effort of getting DEC to consider such a system in the 11 space. We met with Gary Oden, Dick Day, Bruce Webster, and Dom Lacava during Anaheim. Out of our meeting came the invitation to visit Ward McKenzie in the next few months. I will be "calling" on Ward with (hopefully) a bundle of letters from YOU!!! to show your support for this concept. I will report additional details in the near future.

The working groups met throughout the week as usual. Jeff Hamilton directed the groups during the week. Another working group dealing with multi-processor systems was established in Anaheim and Bruce Mitchell will be chairing that group.

The campground and the SIG Suite were busy all week. Jerry Ethington had his hands full keeping material in the campground due to an overzealous hotel staff but activities went well anyway. Roy Maull and his triage team held a successful software clinic on which you will see a report shortly.

The DECUS store items consists of a T-shirt and a microfiche index to the past SIG tapes. The T-shirts sold out which we expected; the fiche did not sell as well as expected. Bob Freeborn handles the store items for our SIG and he did a dynamite job. Tony Scandora deserves special thanks for the almost inhuman effort required to create the fiche index database. This index will be sold again in New Orleans so plan on getting yours!!

RSX MULTITASKER

The first draft of the Anaheim SIG tape was created by the end of the Symposium thanks to the efforts of Glenn Everhart and other volunteers. I am sure Glenn will be reporting on the contents.

Now that DECUS has restructured; there is a Communication Committee. Kerry Wyckoff will be representing the SIG on this important committee. They will be deliberating and discussing topics like newsletter subscriptions which should provide them plenty of work!

We had our normal Question and Answer sessions and Gary Maxwell did a great job of transcribing these for your to review. His work should appear shortly. Hans Jung and Ed Cetron handled the Lore and Short Notes sessions with

the able assistance of Ralph Stammerjohn who "unretired" in order to join us. If you missed Anaheim you missed the initial performance of the "Not Quite Ready for RealTime Players" (think I got that right?) who created a live emulation of the RSX exec including loader, shuffler, disk (guess who played this part), pool, etc.

The menu process led to DEC's agreeing to implement many of the items you asked for. Al Bennett deserves thanks for his work on this particularly analyzing the results in such a short time frame.

As you can see, a successful symposium requires the help of a LOT of people. Liz and I enjoy working with all of them and they each deserve your special thanks.

Thoughts about New Orleans and Disneyland

It may seem stange to leave Anaheim so quickly, but we must. The very preliminary plans for New Oleans for already set: 67 CFPs (Call for Participations) were received. Some of these sessions are duplications but obviously there will be a steady stream of good sessions on jazz city. At this point Hans says there will be four seminars (as of 13-Jan-85):

RSX Internals	given by	Brian McCarthy
RMS	given by	Tony Scandora
Developing Applications	given by	Denny Walthers and Bruce Mitchell
POS Internals	given by	Tim Martin

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All this information is tentative but I thought you would like to at least start planning for your PSS.

I have asked Liz to begin to think about Disneyland in the fall so that we can extend our planning focus to a twelve month period. I have asked Gary Maxwell to work with Jim Hopp on the Symposia Committee to further help this effort. Since many people attend only one symposium, this will allow us to make better use of the volunteers who attend only one. Thanks to Liz and Gary for assuming these new roles.

If you have thoughts on the Fall 85 symposium in Disneyland, please contact Liz or Gary.

New Column Proposed

Over the holidays, I had a little time to ponder what things I needed to do a better job at work. Some of things were serious: a new product called DEClisten to which I could describe programs I wanted and it would write them, or a new product called DECdoc which would develop quality documentation from my thoughts automatically, or a new program called DECcomm which would add comments to all the garbage code which we all have to "upgrade" (meaning rewrite), etc. However, I also know that most of you want to advance up the ladder of success in which there is an element of people interaction.

With that as background, I would like to propose a new column for all to contribute input:

THE BEST ANSWER TO THE DUMMY QUESTION I EVER GOT ASKED

The column is flexible. You can propose the question, the answer, or both. Since no good question will ever be answered, the column can span time!!

Now for the first question that has always offered me an opportunity to drink, take Excedrin, and swallow Tums all at the same time. The situation is this: You have 30 users on the system which is a production system. They expect the system to ALWAYS be there because one never plans downtime you see. You leave a meeting where you have discussed a critical topic like "Who should get the new terminal", head toward the restroom, and are approached by the "head user" who says: "Did you know the system just crashed", and without waiting for answer then asks "and when will the system be back up".

What would your answer be?

I propose the following list ONLY as a START. I really want
to know what you say:

   - I didn't know it was down.. I'll have to check and call you.

   - What did you do to crash my system

   - I'm sure it was power. You did see the lights flicker, right?

   - It will be up in a few <minutes, hours>

   - I really don't know but I'll try to find out for you.

   - I didn't crash it, how should I know

   - It's OK, it only went into XDT

   - It did?, I'll have to go give it a boot

   - Don't worry, we did full backups last night with the latest
        version of BRU

   - I'm sure it will be fine, this is not IBM equipment you know

   - It'll be up in a jiffy

   - Just for you, I'll go review the situation personally

   - It's been up for over a week, when's the last time you worked that
        long without a break

   - etc

   Remember I need to know the answer so send Dom your input.

RSX Novice and Advanced Q & A Sessions

Fall 1984 Symposium, Anaheim, California

Brian McCarthy, John Covert, Stephanie Adams
Digital Equipment Corporation

Edited by: Gary L. Maxwell

Finishing off a hectic opening day at the Fall Symposium were the traditional RSX Novice and Advanced Question and Answer Sessions.

The first hour and a half was reserved for questions from new users of RSX (although a few ringers got in), while the remainder of the long evening was open for any RSX-related question.

As always, the Q & A session succeeded only through the efforts of the panelists from DEC. Seventy eight Q & A forms were distributed for questions, and virtually all of these questions were eventually asked.

The transcript which follows originated with forms completed by each person who asked a question. The Q & A forms provide space for writing the question asked and the answer reveived. Additionally, the forms asked the participants if the answer they received was satisfactory. An overwhelming majority of those who answered this question were indeed satisfied! The editor would like to thank all the participants for taking the time to complete the forms.

In the following transcript, comments enclosed in square brackets [..] have been added by the editor for clarity or follow-up.

Q1: BRU fails with "BRU - Fatal - Invalid tape format" at the end of the second backup tape on a restore operation to an RA80. Any help? (Jim Webb, Taulman Co.)

A1: No. We haven't seen this problem, so please submit an SPR.

Q2: How can I copy a BRU /IMAGE backup set on disk from the disk to a tape, so that BRU could later use the backup set on tape? (Donna Sykes, Gerber Scientific)

A2: No known way. BRU can copy the disk container file to tape, but this would have to be restored to disk before the files in the container file could be accessed.

Q3: Does either terminal driver under 11M, 11S, or 11M-Plus support DMA output to DH, DHU, or DHV devices, and if not,

why not and when? (Henry Gruenemeier, Garrett Turbine Engine Co.)

A3:   Both drivers do it for the DH, only the Full Duplex driver performs DMA to the DHV and DHU.

Q4:   The VMS group rewrote FLX, presumably in BLISS, calling it EXCHANGE. Is there any chance of us getting EXCHANGE? (Alan Frisbie, Flying Disk Systems)

A4:   No.

Q5:   While doing a SYSGEN of Update C, the baseline system stopped scrolling when a CTRL/C was entered, and continued when RETURN was entered.   The SYSGENed system did not show this behaviour. Why? (Lyle Norton, Gerber Scientific)

A5:   The terminal [in the first case] was set in half-duplex mode.

Q6:   How can you get DIRECTORY/FREE output to an applications task, in order to determine amount of free disk space? (Steve Sheinbaum, DEC)

A6:   Short of using a Virtual Terminal, there is no way.

Q7:   How do you transfer from unlabelled tapes (card images) to disk? (Jack Adams, SKC Research, Inc.)

A7:   (1) Mount tape with /NOLABEL switch. (2) Use MAG command to set tape characteristics. (3) Use PIP to transfer data. Note: See example in documentation on transferring from IBM EBCDIC tapes.

Q8:   How can an F4P application program accept interactive input from an indirect command file? (Fred Haggerson, Revlon)

A8:   Can't easily be done. [John Covert suggested reassigning the terminal LUN when "@" is seen in the command stream. Hasn't anyone written a Fortran interface to GCML? Ed.]

Q9:   RSX-11M V3.2 on 11/34 and 11/44. Why do TKB and FTB built with Autopatches D and E on the 11/44 crash, and if built on the 11/34 they work? (Robert E. Morris, McDonnell Douglas)

A9:   There were problems with patches distributed on Autopatches D and E. [Try cross-referencing Autopatch patches with those published in the Software Dispatch, and throw out patches not common to both. Ed.]

Q10: Why won't Micro/RSX Version 1.0 allow a user to specify APR 7 on a CLSTR or LIBR TKB option when the documentation says otherwise? (Mike O'Brien, Metscan, Inc.)

A10: Please send in an SPR.

Q11: I would like to be able to backup the system disk to another disk (RL01) using BRU and the currently running system. We think the procedure would be: (1) Bring BRU into memory, (2) swap hardware unit plugs, (3) run BRU. Any ideas? (C. Boozer, Universal Computing)

A11: Since BRU is overlaid, the scheme won't work. Try using a memory resident disk, and install and run BRU from the memory resident disk. [Such a driver, FXDRV, can be found on the Fall '83 tape in UIC [312,346]. Ed.]

Q12: Why does EDT Version 3 think I have advanced video option on my VT100? When I invoke change mode, EDT sets my screen width to 132 characters. (Walter Levy, Revlon Research)

A12: EDT now reads the size of the terminal buffer used in the SET /BUF command, and sets the screen size accordingly. A workaround is to place a SET SCREEN 80 command in the EDTINI startup file.

Q13: How can you get PIP to use the /FI and /LI switches together? Everytime I try, PIP gives "File not found" messages. (David Berg, Fermilab)

A13: PIP can't make sense out of a /FI/LI combination. /LI tells PIP to list a directory file, while /FI tells PIP to bypass the directory and directly access the index file. [Why can't PIP list the filename out of the file header? I think that is what David was asking. Ed.]

Q14: SET TERM/INQUIRE on a Micro/RSX is issued with a VT220. If the VT220 is set up as either a VT52 or VT220, the software attribute is set correctly; however, if the VT220 is set up as a VT100, the software attribute is set as VT2XX. Why? (Steve Mullarkey, Tascom Ltd.)

A14: This is caused by a hardware bug in the VT220. An ECO is required.

Q15: A Fortran/Macro application program hangs or completes without performing any noticeable function. What steps can the user take to uncover the source of the error? (James L. Latimer, Hughes)

A15: Recompile or assemble the sources after adding statements to the code, such as WRITE (Fortran), QIOs, IOTs, BPTs, etc. (Macro) to localize the source of the error. Use F77 DEBUG if that is available.

Q16: (Deferred until Advanced Q & A)

Q17: As a system manager with privileges on a RSX-11M system, how can I log off non-privileged users on other terminals? (Robert S. Dixon, Ohio State University)

A17: Use the DECUS program FORCE to cause BYE to be spawned on the user's terminal.

Q18: (Was not asked)

Q19: While attempting to copy the RSX Fall '83 SIG tape from a TPC disk container file to tape, I kept running off the end of the tape. What's happening and how can I fix it? (Emily Johnston, Carroll Computer Consultants)

A19: This sounds like a hardware incompatibility problem. Different tape drives produce different length record gaps, so if your drive produces larger gaps than the originating drive, you're in trouble.

Q20: Can you briefly describe upcoming support for installed-then-deleted task images: when will the support be there and how do I get it? (Jim Webb, Taulman Co.)

A20: May be in M-Plus V3.0. We don't know now if VMR FIX will fix memory resident overlay segments correctly.

Q21: The system crashes to XDT when running INI from terminals on the DHV-11 board. It works OK from TT0:. (Jim Pizano, 3M Co.)

A21: This problem was due to a bug in the DU driver, and is fixed in an Update.

Q22: Under Micro/RSX, when BRU is used with /BAD, the system crashes to XDT. (Chuck Wilson, 3M-EMRD)

A22: The problem is corrected in revision E.

Q23: Is it possible to use VMR to publically mount a device other than the system device? (Donna Sykes, Gerber Scientific)

A23: No.

Q24: If you are having problems with slow response from terminals, which terminal driver is better? (Henry Gruenemeier, Garrett Turbine Engine Co.)

A24: Can't answer either way - this problem is applications dependent. However, be cautious about possible terminal line noise caused by unterminated or very long lines.

Q25: Does FMT support the RX50? If not now, when? (Bill Minasian, U.C. Davis)

A25: No. MSCP requires special commands which the driver does not support. Also, it is not recommended to use the Rainbows to format the drive since the head positioner is not accurate enough. (Comment from Bill: Please inform Telephone Support!)

Q26: Two tasks both built /PR:0 with multiuser task names (...XXX). The first task spawns the second through MCR. When users log off before the spawn occurs, the second task doesn't get started up. Any help? (Fred Raymond, Mayo Clinic)

A26: Try using RUN (Install-Run-Remove) through MCR using the /EST switch or have users delay logging off.

Q27: The DCL LINK command is documented as having an /OPTIONS: switch. What syntax is expected after the colon? "Filename" and "@Filename" as arguments cause a "syntax error" message. (Robert S. Dixon, Ohio State University)

A27: This is a known DCL error that was fixed in Update D.

Q28: How can I create 77 character record length magtapes? (Tuan Do, Riggs National Bank)

A28: This cannot be done. Hardware controllers only support even-byte record lengths.

Q29: What is the advantage of running SHUTUP on an RSX-11M system without Multi-User Protection support? SHUTUP isn't built with SYSGEN, but DEC Field Service tells us we should run it before shutting down the system. (Michael P. Morrow, Clark Equipment Co.)

A29: SHUTUP doesn't do much more than broadcast to users and dismount devices. The RSX file system is designed in such a way that the processor can be halted without affecting file system integrity. [RSTS systems, however, require SHUTUP to be run, which is probably why Field Service is worried. Ed.]

Q30: When running IFL from a command file, how can the command file detect an error condition? (C. Boozer, Universal Computing)

A30: Get exit status value (<EXSTAT>) from IFL and check against error values. See us offline for further help.

Q31: Is there any chance of getting a full blown PIP on M or M-Plus with all the functionality found in RSTS PIP? The features and options are extremely helpful. (Paul Kvamme, Idaho Power Co.)

A31: No. "We want to stamp out switches in your lifetime."

Q32: We are running RSX-11M V4.0 or V4.1 on a PDP-11/45. We find
     that absolute location 0 is incremented by one each time BYE
     is run. Neither V3.2 nor any M-Plus system we have used has
     caused this. TSC was able to reproduce the problem, but
     could not resolve it. (TSC thought the location may be used
     as a counter. Obviously, they can't be serious.) (Jim
     Shultz, USDA Nutrient Composition Laboratory)

A32: This may be a bug caused by NETBYE when DECnet is removing
     aliases. No known patch exists.

Q33: The Full Duplex terminal driver chokes on continuous data.
     What options are available? (Anchie Cheda, Cal Poly San Luis
     Obispo)

A33: There will be a fix to CTRL/S - CTRL/Q processing in next
     version. Also, refer to driver documentation for other
     options.

Q34: When task building Fortran application programs, we get one
     extra logical unit built into the task. If we specify
     UNITS=6, the LUN command says we have seven. Tasks run all
     right, but the behaviour is confusing. (Dave Harpring,
     Cincinnati Gas & Electric)

A34: Fortran programs cause an extra LUN to be allocated and
     assigned to TI: for error output. This is the normal
     behaviour.

Q35: RUN $SHUTUP under Micro/RSX allows a backup option, but when
     asked to backup from DU0: (the system Winchester disk) to
     magtape, it gives the message "Illegal operation for device
     DU0:". The operation works fine from the installation
     diskette. (Steve Mullarkey, Tascom Ltd.)

A35: The system is acting "super-safe" by not allowing backup
     operations with a system disk while that system is active.

Q36: When using F77 V4.1 under 11M-Plus V2.1B, if we build a
     program that uses VIRTUAL arrays against F4PRES (which is
     built against FCSFSL), the task build succeeds without
     errors, but the task aborts with a bad stack error. The same
     task built against FCSFSL and the Fortran OTS from SYSLIB
     runs fine. What's the problem, and if there is one, when
     will it be fixed? (A. James Arnold, Environment Canada)

A36: Sounds like a TKB problem. Please submit an SPR.

Q37: Occasionally we see secondary pool get sucked down, sometimes
     so far the system crashes. Why is this? How can it be
     avoided? (Mary J. Marchaterne, Commonwealth Edison Co.)

A37: Secondary pool might fill up with: (1) a lot of files being

opened, (2) a lot of command lines being processed simultaneously, (3) a lot of SEND DATA directives being executed. Try to see what task's are running when this happens.

Q38: CON doesn't work after startup command file completes. HRC times out. Any reasons why this should happen? (Jim Webb, Taulman Co.)

A38: Try aborting HRC before issuing the CON command. [I would suggest sending in an SPR with the TAL listing of HRC when it does this, along with a map of HRC. Ed.]

Q39: Can I change the switch defaults for FTB? (Donna Sykes, Gerber Scientific)

A39: Look in the TKB build file. If the change is made using a GBLDEF, then try it in FTB; if changed via a GBLPAT, then don't.

Q40: When I try TAS or TAL, I invariably get a partial list terminated by an "insufficient buffer space" message. What buffer is this and how do I increase it to sufficient space? (David Berg, Fermilab)

A40: This buffer is at the end of MCR's task space. Using VMR, remove MCR and reinstall it with an increment [/INC=2000 should do it - Ed.].

Q41: A task issuing a QIO to an MT: type device does not require a MAXBUF option specifying the largest buffer being written, while the QIO to an MS: type device does. Why? (Chris Sharp, NL Measurement)

A41: If the MS: controller is an Emulex, the controller needs to be Rev G or higher. If this is the case, submit an SPR, as no known problems or features explain this.

Q42: We are performing computer-computer communication using DLV-11Js. Our problem is that occasionally the DLV-11J "locks up" allowing no further communication into the system, but you can broadcast messages to it. Works OK after rebooting. Why does this happen? Can it be fixed online? (John Hansen, Ligna Technology)

A42: There is a problem with DLV-11J not allowing input if interrupt enable bit is set. Sometimes the CPU doesn't see the interrupt, so the DLV-11J port refuses input. [Additionally, be certain you are following the rules for Q-Bus configurations. Otherwise, interrupt grants may be lost. Ed.]

Q43: When shutting down the system, terminals that have BYE

commands forced to them display many "MCR - Task active" messages, and SHUTUP hangs. What's wrong? RSX-11M-Plus V2.1D. (Michael P. Morrow, Clark Equipment Co.)

A43: Please see us offline.

Q44: Will the KMC support multiple line printers and if it will why won't my system work? (Linda Callabresi, Garrett Turbine Engine Co.)

A44: KMC may require all controllers to be in the system. If the installation of all controllers does not fix the problem, submit an SPR and a crash dump. Problem could be due to Unibus mapping.

Q45: When using BRU and /IMAGE:SAVE mode, BRU does not allow /APPEND without /SUPERSEDE. This makes [0,0]BRU.SYS larger; however, previously saved files in the container file are no longer accessible using /IMAGE:RESTORE. Why? (Jasper Davis, Teradyne)

A45: Please submit an SPR.

Q46: What/When/How is the IO.RSN (Read Serial Number) QIO function used? (Martin R. Furuhjelm, Scientific Micro Systems)

A46: Don't know.

Q47: What causes multiple allocation of disk blocks to several files and how may I fix it? (Dottie Elliott, Northrop Services, Inc.)

A47: Use VFY occasionally to check the disk for problems. VFY will print out the files (by file ID) which share multiple block allocations. Enough of these files must be deleted (using PIP) to eliminate all multiple allocations. Use VFY to perform final check and rebuild the bitmap, if necessary.

Q48: Will the next version of BRU which supports named directories be able to backup/restore a PRO 350 hard disk when run as a diskette-based P/OS application? (Vince Perriello, Composition Systems, Inc.)

A48: It should work.

Q49: On Micro/RSX, ACFPRE hangs when using a Brand-X LPV11. How do I simulate the effects of ACFPRE without running it? (Maurice Wuts, USC)

A49: You can't simulate ACF; however, the problem you describe is fixed in the next release.

Q50: Why won't RSX have a version/equivalent to VMS BACKUP? RSTS

has one! (Jim Neeland, Hughes Research Labs)

A50: Noted.

Q51: Using BRU on 11M V4.1D, when a large file (37000 blocks) is transfered to tape using /VERIFY, after the verification completes, BRU printed out "No files found." Why? (Stephen Tai, Bell Canada)

A51: Try using /COMPARE on a separate run of BRU instead of using /VERIFY.

Q52: RSX-11M/M-Plus Internals/Logic Manual: If and when will Digital produce them? DEC has been "noting" this request for years! (Bryan MacKinnun, Fermilab)

A52: Maybe. [Is that better or worse than "noted?" Ed.]

Q53: My 11/70 running 11M V4.1C gradually runs out of pool. I am using PMT and when the critical pool state is entered, I crash the system to get a crash dump. However, the crash dump reveals nothing unusual. (Linda Callabresi, Garrett Turbine Engine Co.)

A53: Go to the Software Clinic with the crash dump. [The Clinic determined that Linda's system was filling up pool with retrieval pointers. Thanks, doctors! Ed.]

Q54: On 11M if I SYSGEN for two DHV11 controllers, but only one is actually present, the system traps through location 4 and does not work. (Bill Minasian, U.C. Davis)

A54: This is a VMR problem which will be fixed in Update E.

Q55: My system doesn't see the third RK07 on a single RK711 controller when M-Plus V2.1D starts up. CON is unable to access this device to size the drive. If I wait 5 to 10 minutes after startup, CON ONLINE DM2:   works. (Gerard P. Van Trieste, Jr., RCA)

A55: Look at the hardware unit switch or the drive cabling for the problem.

Q56: Delayed I/O completion codes uses MTPD$ (Move-to-previous D-space) regardless of whether the region currently mapped is the same one which contained the I/O Status Block at the time the QIO$ is issued. (Abrie Marais, Marais & Partners)

A56: This behaviour is documented in the Executive Reference Manual.

Q57: Power fail recovery does not restore supervisor mode D-space APRs. (Abrie Marais, Marais & Partners)

A57: Fixed in Update D.

Q58: I run two tasks which communicate via a 64 byte global
partition using two global event flags. The tasks run much
slower than expected, presumably because of the inter-task
communication overhead. Why is it so slow and how can I
speed it up? (Bob Capel, Signetics)

A58: Using one task with memory resident overlays may be more
efficient than two tasks that communicate with context
switching overhead.

Q59: (Was not asked)

Q60: Compare and contrast the use of RPOI$ (Request and Pass
Offspring Information) and SPWN$ (Spawn) directives. (Dave
Birkenmeyer, Clark Equipment)

A60: Use RPOI$ if the requesting task doesn't care about the exit
status of the offspring, or if the requesting task is acting
on behalf of another task which wants the final status
("passing the buck"). Use SPWN$ when the requesting task
wants the exit status.

Q61: In M-Plus with Kernel Data Space enabled, it is much more
difficult to make flying patches to the Executive, since code
will not run in primary pool. Allocating a chunk of the ICB
pool would do nicely. How do you do this? (Forrest Wilks,
Landis & Gyr Systems)

A61: Use the alternate entry point to allocate core, specifying
the ICB pool list head, e.g.:

```
        MOV     #size,R1        ; No. bytes to allocate
        MOV     #$ICAVL-2,R0    ; Address of listhead - 2
        CALL    $ALOC1          ; Allocate ICB pool
                                ; R0 -> allocated ICB pool
```

Q62: Terminals set to half-duplex on a DHV11 hang in I/O rundown
when a task is aborted or exits with status. (David
Zeleznik, DMS, Inc.)

A62: Please submit an SPR with a crash dump.

Q63: When you dismount the system disk and remount it /FOREIGN to
back it up, it warns that the system disk is being dismounted
and you can back it up. Then when you dismount it, it
disables all tasks that were installed from the system disk,
including ...MOU, so you can not remount it and proceed.
(Tony Scandora, SAI)

A63: Use the /LOCK=V (Virtual) switch to DMO each time you
dismount it. This is supposed to allow installed tasks to

work as long as Volume Valid is true (e.g., the disk is not spun down).

Q64: I have an application requiring dynamic regions on M-Plus, and I prefer that they be checkpointable. However, when I create a region with the Create Region directive, it is marked as non-checkpointable. Is my only answer to install the regions from task images? And won't I have a problem building if the region is greater than 32KW? (George Cornelius, Mayo Clinic)

A64: (No answer provided) [To the best of my knowledge, regions created through CRRG$ are checkpointable on M-Plus, unless they have outstanding non-buffered I/O. Ed.]

Q65: Alter Priority directive returns $DSW = 1 even if a task is not installed after Spawn directive has been called to spawn the task. (Jim Webb, Taulman Co.)

A65: Not seen - use the GIN$ (Get Information) directive on M-Plus.

Q66: (Was not asked)

Q67: While performing a non-standard SYSGEN in which I did not specifically ask for inclusion of the Null Device NL:, building the Executive results in an undefined reference to the symbol $NLTBL. However, I could not find any references to this symbol in the sources. Do you know what is making the reference? (Roger Neyman, Plessey Peripheral Systems)

A67: Search Macros for references to NL in SYSTB.MAC, search LST files to find references, or taskbuild with the /CR switch to produce a cross reference of all references.

Q68: The DLV-11J port 4 on my system (11/23-Plus) will come up online and may be output to but not input. The input buffer shows data overrun errors. What is wrong? (Al Newsom, Mobil Oil)

A68: Fixed in an Update.

Q69: Currently we have a number of disk subsystems. It seems in many cases our RA81 is considerably slower than our RK07 or our brand "S" drives (RP05 equivalent) and are about the same speed of our RL02s. Is this normal or should we be looking for hardware/software errors? (George Rogers, Manitoba Telephone System)

A69: Problem not seen elsewhere - the problem may be hardware.

Q70: What would be the procedure for adding an extra word to the task header (the static portion at the beginning)? (Forrest

Wilks, Landist & Gyr Systems)

A70: These are dangerous areas, and doing this is not recommended. You may be able to change the task loader to perform your function on the fly.

Q71: (Was not asked)

Q72: What can be done to prevent jobs submitted to Batch from being locked out and killed if ACNT is accessing the Account File at the time the job is started by the batch processor? (John Vilandre, University of Minnesota)

A72: We will look into a possible solution.

Q73: We have a dual ported RK07 between an 11/70 and an 11/44. It doesn't work as expected. Simultaneous accesses cause errors. If a new file is created by one system after the other mounts the disk, the latter system doesn't know about the new file. My Service Technician says M-Plus supports dual porting. Does it? (Thomas J. Cook, American McGaw)

A73: It is supported by M-Plus if both ports go to the same system, but not in your case. Simultaneous reads will not cause errors, but the above scenario will never work without communication between the two file systems on each system.

Q74: Typing a continuous series of command lines containing only a continuation marker "-" eventually causes a system crash in the CORAL pool deallocation routine. (Jim Wayda, Plessey Peripheral Systems)

A74: Pending.

Q75: RSX-11M V4.1C with 256K of memory running on a J-11 oversizes the memory on a soft boot.

A75: Problem is known, the cause is so far undetermined.

Q76: PIP filespec/TR doesn't work with a large, multi-header file (230,000 blocks), but gives no indication of an error. (Scott Snadow, General Dynamics)

A76: Don't know of problem, but it sounds like PIP is suffering from a sign problem. Please submit an SPR.

Q77: What kind of security enhancements are slated for future releases of RSX, and when can we expect them? (Stephen Tai, Bell Canada)

A77: Only plans are for one-way password encription for 11M V4.2 and 11M-Plus V3.0.

Q78: Under M-Plus, you may not have a system device on a RH11 controller on an 11/70. The problem appears to be in SAV because it assumes that it is an RH70. When are you going to fix this? (Bryan MacKinnon, Fermilab)

A78: Fixed in next release.

Fix to Allow DCL to be the Catchall for MCR

Mark Hartigan
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At my previous company we used only RSX11M. When we upgraded from V3.2 to V4.0 I decided to set MCR as the primary CLI and install DCL as the catchall task on all of our systems. This proved to be an advantageous configuration for us since it maintained full compatibility with any existing command files designed to use MCR as well as a familiar environment for those of us reared on older RSX systems where MCR was the only show in town. At the same time it allowed people to make occasional forays into the world of DCL without having to change any of the default settings. Without losing the capability to type "PIP /LI" one can type DIR. Without sacrificing the succinct "UFD DLO:[1,54]", one can experiment with "CREATE /DIRECTORY DLO:[1,54]". More importantly, in cases where there are commands which are common to both MCR and DCL (for example RUN), the more familiar MCR form takes precedence.

When I first started working with RSX11M-PLUS at my current company, I was very much surprised to find out that this configuration doesn't work. If DCL is installed as the catchall task, it will inform the user that some unnamed task is already active when any DCL command is entered. After several days of disecting the various tasks involved in the command string intrepretation process I found that the problem was actually quite simple to explain and is directly related to the difference in the way RSX11M and RSX11M-PLUS handle commands.

Under RSX11M, a command unrecognized by MCR is dispatched to the cathchall task which must be installed as "...CA.". According to the M convention, the first one so activated is called "...CA."

and all subsequent ones "CA.Tn". The catchall task (really DCL) then analyzes the command and determines the utility which needs to be spawned. That utility (for example ...PIP in the case of DIRECTORY) is then spawned under its own name (...PIP or PIPTn). It is for this reason that those of us accustomed to using RSX11M, can occasionally be caught typing ABO PIP after having typed the DCL DIRECTORY or TYPE commands. The disadvantage of this system is that a command like PURGE [*,*]*.* (which uses PIP) disallows the use of a command like DIRECTORY (which also uses PIP) from the same terminal since DCL would try to spawn ...PIP twice.

Under RSX11M-PLUS, an elegant solution has been found. Wher. the PURGE command is typed, DCL must (as in M) spawn PIP. However, it names the spawned version of PIP "PURTn". A second version of PIP can thus be simultaneously invoked for the DIRECTORY command by naming it "DIRTn". In this way one can have multiple DCL command all using PIP running simultaneously running from a single terminal. This has the additional advantage of allowing the user to abort the DCL command by simply typing ABO PURGE or ABO DIRECTORY without having to know that these commands use a task called PIP. This works when DCL is the primary CLI, but not when DCL is the catchall.

The reason for this lies in the fact that this principle of spawning tasks with the name of the command is carried one step to far. When the dispatcher task (MCD.TSK "MCR...") activates the catchall task, it activates it with the name of the command (for example DIRTn). When the catchall tries to then spawn the utility (for example PIP) with the name of the command (DIRTn), the task name is already in use (itself!). The solution requires a change to the MCR dispatcher to name the catchall CA.Tn as in RSX11M. This poses no problem with the concurrent execution of several DCL commands from the same terminal since the catchall task doesn't wait for the spawned utility to exit.

After making this change, I unearthed several bugs in DCL which only crop up when DCL is used as a catchall. One involves an incorrect DPB for the RPOI$ directive in the module DCLDAT.MAC which causes the prompt to return before the command execution is complete. The other involves the incorrect checking of a status return in DSPCMD.MAC which makes it impossible to activate the catchall DCL from an indirect command file. Both of these patches are also included and should be made before DCL is used as the catchall.

The only remaining bug is that under certain circumstances two MCR prompts are issued after the completion of a catchall processed command. I don't really have any idea why this occurs, but it seems to be relatively harmless so I've left it that way on our systems. Otherwise, we've been using DCL as MCR's catchall now for about three months on all of our V2.1D systems without any difficulties.

(Additional notes by B. Z. Lederman)

It has been more than three months now, and DCL still works
fine as a catch-all. I should note, however, what happened to TDX.
Some applications people got used to DLG, and I, for one, like to
have CVT around to convert ASCII to Octal, etc. What we did to
solve this was quite simple: install one copy of the TDX task
image under the different names of the desired commands. For
example:

```
INS TDX/TASK=...CVT
INS TDX/TASK=...DLG
INS TDX/TASK=...DLN
```

and so on for whatever TDX commands you wish to retain.
(Don't install it as DIR or TYP, or you will defeat most of the
purpose of having DCL as the catch-all.)   By having a task
installed under a given name, like CVT, and command line which
starts with CVT goes to that task rather than being pushed off to
the catch-all, and so the proper commands go to TDX. I should also
point out that we run on M-Plus with tasks built with external
headers, and enough secondary pool so that we can install as many
...XXX tasks as we want without using up any primary pool.

The patches mentioned do not have any effect whatsoever on DCL
used as a CLI as far as we have seen. We patch the sources, then
build two copies of DCL from the same sources: one is built to be
used as a CLI, and has MCR catch-all and "." pass-through enabled.
The copy built as a catch-all for MCR <u>MUST</u> <u>NOT</u> have MCR catch-all
or pass-through enabled, or else you may get an infinite catch-all
condition.

Using DCL as a catch-all can be habit forming, especially if
you get used to some commands like DELete. With PIP /DE, if you
forget the version number, you get an error message, but with
DELete, it starts listing all of the files by version number and
prompts for "Yes, No", etc. Also, as previously noted, since tasks
run under their command name, you abort TYPe with ABO ...TYP, abort
DIRectory with ABO ...DIR, etc.: no more having to remember that
it's really PIP under there. If you use System Accounting, and
what to know what's eating up the system, this is very handy as
different uses of PIP get listed seperately as DIR, TYP, COP, etc.
There is the minor point that if you have DECNet, you won't know if
COPy resulted in invoking PIP or NFT, but it does make things a lot
easier for the user, who also doesn't have to know when to use PIP
and when to use NFT, or even that there is an NFT. There are lots
of little places where life is easier with this configuration.

I might also mention one other cosmetic change. When you type
an unrecognized command, or try to invoke a task which is not
installed, MCR returns "Task not installed".   If DCL is the
catch-all, the same command will result in "Illegal command". It's

not serious, but may take a little getting used to for die-hard MCR
people.

     The first SLP file is the change to the dispatcher so that CA.
runs as CA.Tn:

```
[12,10]CHAIN.MAC;2/AU=[12,10]CHAIN.MAC;1
-93,94,/;MDH001/
    BEQ     8$              ; IF EQUAL YES
    CMP     2(R3), RCA.     ; STARTING CATCH ALL TASK?
    BNE     10$             ; IF NOT EQUAL NO
8$:     MOV     2(R3),(R3)      ; SET NAME  AT. OR CA.
/
```

     This change is applied, CHAIN is re-assembled, the new module
replaced in [1,24]MCR.OLB, and then re-build MCD. Since MCR... is
always active, you will have to remove and install it in VMR, and
then re-boot before the change becomes effective. Don't delete the
old task images until after you re-boot and the changes are tested.

     The next SLP file is the change to the RPOI$ directive in DCL.

```
[23,10]DCLDAT.MAC/AU=[23,10]DCLDAT.MAC
-2,2,/;MDH001/
    .IDENT  /MH00/
-220,220,/;MDH001/
$RPOI::     RPOI$   ,,,,,,,,RP.OEX!RP.OAL
/
```

     The last change is to the status return in DCL.

```
[23,10]DSPCMD.MAC/AU=[23,10]DSPCMD.MAC
-2,2,/;MDH001/
            .IDENT  /MH1.03/
-132,,/;MDH001/
    CMPB    $DSW, IE.ALG    ; This will happen if we're spawned by
ICP
    BEQ     SPAWN           ; If we were, try $SPAWN
/
```

     The two DCL changes are applied, the modules re-assembled
(look at the command file in [23,24] for the proper method), new
objects replaced in the object libraries (DCLDAT goes into
[1,24]DCLR.OLB, DSPCMD goes into [1,24]DCLO.OLB, and no, I don't
know why there are two libraries just for DCL), and then DCL can be
built.   Look at the comments in the build file: you will probably
want to make a seperate copy with MCR fall-through turned off to
build a copy of DCL as the catch-all under a different name (we
call it DCLCAT, and of course give it a task name of ...CA.).   The
catch-all can be removed and re-intstalled while the system is

running: so can DCL, provided no one is using it as a CLI while
you try to remove it.

MARTY OLEVITCH

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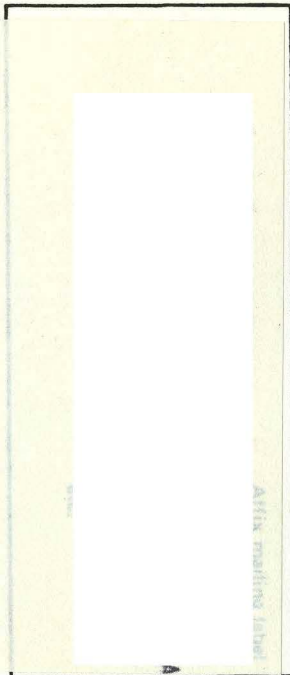DECUS Membership No.: _____

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