Central Support
ON–LINE

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LOGON:

Terry Smithton

ON-LINE Editor, L.W. Abel, recently made a difficult decision to leave McDonnell Douglas Field Service Company to pursue outside career interests.

Having assisted with previous issues of ON-LINE, I have been asked to assume the editorial duties and as your new Editor, I'd like to introduce myself. My name is Terry Smithton and I joined McDonnell Douglas Field Service Company in April, 1989 as an Applications Analyst. In the recent past I was Assistant Editor for the National Distributors at Cipher Data Products in Garden Grove, California. This background has already proven useful in my new role.

I look forward to the challenges of being the editor of ON-LINE and serving you, our customer. If you have any questions or wish to see a specific subject covered in ON- LINE, please address them to Editor, ON-LINE, McDonnell Douglas Field Service Company, Mailstop FS200, 1801 East St. Andrew Place, Santa Ana, Calif. 92705.

- Terry Smithton

After Hours Software Support Contracts

Effective January 1, 1990 optional After Hours Software Support contracts are available to all users of McDonnell Douglas computer systems. After hours shifts are broken into three groups:

SHIFT	HOURS AND DAYS
Evening	5:00 pm - 1:00 am; Monday - Friday
Graveyard	1:00 am - 8:00 am; Tuesday - Saturday
Weekends	5:00 pm Friday - 8:00 am Monday

Evening, Graveyard and Weekend support can be purchased independently or in a combination of shifts. All three shifts can be purchased at a discount for a full 24 hour/7-day software support program. New Year's Day, Thanksgiving and Christmas Day are the only exceptions to the support year.

Support is obtained by the same mechanism that is in place for you during the day. Just call Central Support through our Central Dispatch number (800) 678-3399. Your call will be answered by one of our Customer Service Representatives and transferred to a Software Support Specialist, who will return your call. Our support facility is staffed during these off hours.

Prior to this new option, we offered After Hours Support only on a Per-Call basis. This proved to be costly for our larger users who run a 24-hour/7-day operation. After Hours contracts are being offered as a more cost-effective solution to you, our customers. Time and Materials will still be available for those customers who don't have a need for this type of support on a regular basis.

Letters describing this service along with a self-addressed Option Form, have already been mailed to most customers. If you have not yet received yours and you are interested in this service, please call (714) 566-4939 for the Field Service Marketing Department. They will be able to assist you in contracting with us for this support.

- Bob Aull

STAR POWER

Setting up Your Spooler Queues

In previous issues we have suggested modifications to SYSTEM-SETUP with regard to WORKSPACE and SET-WRITES. In this issue we will recommend modifications to the QUEUE-SETUP proc.

QUEUE-SETUP, in the file SYSPROG-PL, is called from SYSTEM-SETUP and is therefore automatically executed after a bootload or AF Restore on 2.3, 5.3, and 6.0 Operating System releases. Its purpose is to create spooler queues in addition to the default Standard queue. Therefore, within the PROC you must specify the queue information the system requires in order to set up your queues for you. For example, if you had your Sales printer on port 10 you would enter before the RTN statement, in QUEUE-SETUP:

```
HSP-CREATE SALES PORT 10
P
```

After QUEUE-SETUP is executed you would find the Sales queue listed in your spooler status display. Any other queues needed to be set up would be entered in the same manner.

Although it is possible to create queues at TCL, it is preferable to have QUEUE-SETUP do the work for you.

- Linda Denney

MARKETING

Purchasing Used Equipment and Third Party Service

One dilemma that the Field Service Company frequently encounters is that of a customer purchasing equipment from the "used equipment market." There are many entities not affiliated with McDonnell Douglas that offer peripheral add-ons, system upgrades, maintenance, and other services, usually at very competitive prices. In an effort to assist users who might be contemplating such a purchase, we have highlighted some of the more common pitfalls associated with dealing in used equipment along with an explanation of each below.

Systems and System Upgrades : A fairly typical scenario is the customer who purchases a system or an upgrade from the used equipment market and then discovers that it doesn't perform as expected or that certification and upgrade charges were not included in the purchase price.

McDonnell Douglas Computer Systems Company (formerly Microdata) has been manufacturing proprietary hardware for the REALITY® Operating System since 1969. As older systems go out of service they often enter the used equipment market. Once this proprietary hardware goes off of maintenance, or otherwise leaves the care of the Field Service Company, it most likely will not be kept up to the current revision (rev) level.

It is therefore standard policy that any equipment not kept under Field Service Company maintenance for more than 30 days must be recertified before a new maintenance contract can be issued. This is very similar in concept to having to take a physical as a condition of receiving health or life insurance. The certification process verifies that the equipment under consideration is functional and up to current revision levels. The cost of certification varies depending upon what is being certified. The cost of upgrading "down rev" components is usually prohibitive and, in most cases, will negate any savings that may have been realized in the initial purchase.

Peripheral Add-Ons: Another fairly typical occurrence is a customer who purchases a peripheral, be it new or used, directly from the manufacturer, distributor or used equipment broker and later discovers that it is incompatible with their system.

Most of the points mentioned in the discussion of systems also apply to peripherals; however, peripherals present unique opportunities of their own. In recent years, McDonnell Douglas has transitioned from manufacturing their own peripheral products to purchasing them from companies who specialize in those devices.

The used equipment market abounds with peripherals of all types and description. Purchasing peripherals on the open market presents two possible difficulties. First, the peripheral may be similar to those sold by McDonnell Douglas, but still may be incompatible. Incompatibilities can arise from differences in interface specifications, options supported, custom or proprietary firmware, etc.

Second, all peripherals are not created equal. Peripherals purchased by McDonnell Douglas must meet strict requirements and specifications established by McDonnell Douglas Computer Systems Company systems engineering. Peripherals not conforming to these standards are sold to less discriminating buyers. This is especially true of disk drives and, to a lesser degree, tape drives. By purchasing equipment of unknown origin, there is a risk that it may not conform to McDonnell Douglas standards. This can cause delays in the certification process and may actually result in non- certification.

The moral to this story is an old one: with very few exceptions, you get what you pay for. In the long run, you are better off obtaining systems and upgrades from your authorized McDonnell Douglas Independent Sales Organization (ISO). By doing so, you will avoid unwelcomed surprises at installation time.

Service: There are many third party maintenance organizations offering service on the McDonnell Douglas product line. It is important to understand how these organizations are able to provide maintenance at or below Field Service Company rates. One reason commonly cited is that they have lower overhead. This is probably true, but let's look at what overhead entails.

Overhead is having the right spare parts in the right place when they are needed. The Field Service Company maintains a $22 million inventory of spare parts for the McDonnell Douglas product line. This massive inventory is tracked by a nationwide on-line logistics system.

Overhead also includes having the spares at the correct revision level. At the Field Service Company, all spares are routinely brought up to current revision levels as they are cycled through the repair center. The Field Service Company also manages a "Field Change" program which assures that critical changes are incorporated in an appropriate time frame. No other service organization can provide this level of responsiveness at any price.

Overhead is possessing diagnostics that quickly isolate and aid in the correction of system problems. Diagnostic development requires a great deal of human and material resources. The Field Service Company diagnostics are constantly being updated and improved to increase reliability and decrease downtime. These diagnostics remain proprietary and no other service organization is licensed to use them.

Overhead is having a responsive systems engineering department to address complex or persistent problems that may arise, since not all problems can be resolved by replacing parts. The Field Service Company has direct access to both hardware and software engineering groups. The company has, on many occasions, sent the design engineers to customer sites to investigate and resolve complex issues. Again, no other service organization can boast of this level of support.

Overhead is having a professional Field Engineer training department dedicated to providing up-to-the-minute instruction on all products, including the most recent changes and configurations. The Training Department has $10 million in equipment dedicated to training Field Engineers.

Overhead is also maintaining a full-time support staff focused on keeping Field Service Company Field Engineers abreast of current technical information. In other third party service organizations, this information may lag for months, if it is ever disseminated at all.

Overhead is having your Field Engineer install the latest Operating System and overlay patch tapes as they are released. This is scheduled at the customer's convenience and as long as it is done during normal maintenance hours and a current Maintenance Agreement is in force, there is no additional charge for this service. No other service organization can offer this service.

A great deal has recently been learned about the effects of static electricity (ESD) on electronic components. Any electrostatic discharge has a detrimental impact on components whether it causes an immediate failure or not. The Field Service Company recently spent in excess of $100,000 implementing a comprehensive ESD management program. All test stations in the repair centers and every Field Engineer have been issued special anti-static kits specifically designed to eliminate damage caused by electrostatic discharge. From repair center to customer site, each electronic assembly is packaged and shipped in special anti-static materials. And at no time are these devices handled unless personnel are properly grounded. This kind of overhead translates into increased uptime and overall installation reliability for users.

The long and the short of service is that if you can afford downtime, then you can probably find someone to service your system for less. In fact, the more downtime you can afford, the better the price you can negotiate. The Field Service Company operates on the premise that any down time is excessive and strives to keep it to an absolute minimum by utilizing the skills of professionals best capable of doing so.

- Steve Gill

ROS

Current OS Releases And Patches

The following table contains the most current Operating System (OS) revisions and patch levels for each supported system. McDonnell Douglas Field Service Company has recently assumed responsibility of installing all patch tapes for Dealer/VAR and branch customers.

If you do not have the current patch tape installed for your particular Operating System, please contact your Field Engineer (FE) through Central Dispatch to schedule a time for installation.

Series	Release	Patches (PP = Paper Patches)
4700	4.3RevD	PP1-2
6000	2.3RevD	RevC Tape (Includes PP1-175) PP 69,70A,79,81A,82,84-89, 91-92,103
	1.1RevD	RevB Tape
9000	5.3RevD	RevC Tape (Includes PP1-120)
	1.3RevC	RevA Tape
18	6.0RevF	RevB Tape (Includes PP1-114) PP 48-52,57-59,66

Please note: Patch Tape Rev B for Series 18 Release 6.0RevF is now available.

- Mike Bingman

What is Flow Control?

Let's imagine that you want to drink 2 glasses of water. You cannot possibly fill the glass from the tap and drink it while the water is flowing without having water go down the drain. To keep water from going down the drain, do not fill the glass to the point where it overflows. Turn the flow of water from the tap off when the glass is partially full. Keep the water turned off until you have drunk the water in the glass and are ready to take more water from the tap again. This process is essentially a description of FLOW CONTROL between a printer or other device attached to a computer.

We will consider flow control from the McDonnell Douglas system to a character printer and touch on flow control and modems. We will not be discussing some of the more sophisticated setups that involve networks or multiplexors, or flow control with PCs and other types of devices.

Flow control comes in two varieties: Xon/Xoff and HARDWARE. HARDWARE flow control is handled by connecting one of the RS-232 control lines from the DB type pin connector on the printer to the HARDWARE flow control line on the McDonnell Douglas system. You will have to consult your printer manual for the proper signal on the printer side. If the manual does not indicate that flow control is handled by pin 4,5,6, or 20, then look for a pin marked READY/BUSY. This flow control pin should be connected to the flow control signal on the respective McDonnell Douglas system. Candidates for this READY/BUSY signal are 11 and 19, but this will vary from printer to printer, so consult your printer manual.

Xon/Xoff flow control is a pair of characters sent from the printer to the system over the printers transmit wire (usually pin 2). These signals correspond to a control-Q and control-S respectively, and tell the system to turn the transmission on or off.

Following is a list of the type of flow control supported by the various McDonnell Douglas systems and, in the case of HARDWARE flow control, the signal line to connect:

* REALITY systems with 25 pin connectors--These older systems will not support flow control unless they have an ICC (intelligent 8-way) and have pin 11 connected to the 8 connectors supported by that 8-way.
* REALITY systems with 9 pin connectors--HARDWARE-- Connect this and all other systems with 9 pin connectors to pin 5.
* 9000 systems with 1.x OS--HARDWARE.
* 9000, 6000, and SERIES 18--HARDWARE and Xon/Xoff.

The McDonnell Douglas systems will be set to react to the flow control initiated by the printer; they will not initiate any flow control themselves to the printer.

Depending on the age or brand of printer which you are connecting to the system, it may or may not support both HARDWARE and Xon/Xoff flow control. Consulting the printer manual may be confusing also. You may find no mention of flow control, however the manual may give an indication by using the term DC1/DC3. This really means Xon/Xoff. And as explained above, READY/BUSY on a particular signal line means HARDWARE flow control.

When using a modem, HARDWARE flow control is not supported. The signals are intended for control of a modem and are therefore not passed through from the printer to the system. Likewise, Xon/Xoff flow control, even though it is a set of characters which will be passed through, should not be used unless the modem you are using has error correction capability.

Remember that we only partially filled the glass before turning the water off? Let's think of the glass as the "buffer." Most character printers have a buffer which will hold characters to be printed. When this buffer is x% full, the printer will send the Xoff character to tell the system to STOP SENDING. The printer will continue to print until the buffer is down to x% full, and will then send the X/on to the system to tell it to start sending again. If a non-error correcting modem happens to interpret the noise it receives from time to time as a X/off, the system will stop sending data and calmly wait for a X/on which will never be sent.

The McDonnell Douglas system expects the HARDWARE flow control signal to be HIGH to indicate data is to be transmitted and LOW to indicate a transmit off condition. Some printers will allow the user to select polarity for HARDWARE flow control. Usually, selecting the NORMAL

polarity will be correct but you should consult your manual.

When configuring the port on the McDonnell Douglas system to react to HARDWARE flow control, be sure to connect the proper signal wire. If this signal wire is not connected, the port will interpret this as a LOW or transmit off condition. The system will not send anything to the printer until it sees a HIGH voltage on this signal line.

In summary: use HARDWARE flow control only in direct connections from a printer to the system. Do not use Xon/Xoff over a modem unless that modem has an error correcting protocol (MNP is one used frequently). Remember that the computer system is reacting to the type of flow control used by the printer and it must be set to follow the printer.

Once your FLOW CONTROL is properly configured for your system, you can then use PCM or the TERMINAL verb to configure your port to adjust to the FLOW CONTROL. The device determines FLOW CONTROL, not the computer.

- Sam Craghead

MIC Ratings for Series 18

The Series 18 can be configured to three different performance ratings. This can be easily verified by logging onto SYSPROG, keying in LIMITS at TCL, and looking at the RAM FIRMWARE LEVEL.

5.0	24 MIC	18/900, 18/600
5.1 1	8 MIC	18/900, 18/600
5.3	11 MIC	18/600

MIC is an acronym for MCDonnell Douglas Computer Systems Company (MDCSC) Internal Classification. It represents the processor's speed and therefore, the maximum system performance that can be achieved, assuming unlimited memory, DPUs, and disc drives. Actual performance is dependent on the system configuration and the demands of the application.

- Mark Onoda

PGM

Satisfying PROC Input Statements When PERFORMing the PROC

The DATA/BASIC manual for 2.3/5.3 is in error when it states:

"The DATA statement may be used to store stacked input for TCL, ENGLISH verbs, or PROCs when used in conjunction with the CHAIN statement. In addition, the DATA statement can be used to feed input requests to other programs that are executed via the CHAIN or ENTER statements."

The manual is mistaken because PROC input requests (IP, IBP, NIP and IN) may not be satisfied with stacked data. The data stack is actually part of the PROC workspace, but is shared by other processors. Its purpose is to allow PROC to stack input in the Secondary Output Buffer for use by the process being invoked from the Primary Output Buffer when the PROC "P" command is executed. You would not be able to construct a TCL command in the output buffer by getting responses from the terminal if the presence of data in the buffer would cause input statements to be bypassed! The theoretical reason PROC works in this way is that it was designed to be the highest level of control in the system-- just a micron above TCL. As such, its requests for input should not be subservient to any other processor.

The ROS 7.0 documentation has been corrected, and states:

"The DATA statement cannot be used to supply data for PROC input statements because PROC input statements do not accept data from stacked input." (DATA/BASIC manual)

"If the PROC is executed from a DATA/BASIC program via a CHAIN or PERFORM statement, the secondary output buffer is not initialized. Therefore any data placed in the data stack by a DATA statement will be present in the secondary output buffer. However, this is not a desirable method of passing data from a DATA/BASIC program to a PROC because the PROC input statements ignore stacked data." (PROC manual)

So how do you solve the problem? The answer is that ANY workaround will involve modifying your PROCs! Suppose you have a PROC that prompts for start and end dates in order to customize an ENGLISH report, as in...

```
PON
OENTER START DATE+
IBP:&1
OENTER END DATE+
IBP:&2
HSORT CUSTOMERS WITH INVOICE.DATE>=
A"1
H AND <=
A"2
P
```

The PROC has been made as simple as possible for the purpose of this example. Normally, you would perform error checking on the input to assure the dates are valid. If you wish to PERFORM this PROC and pass it input--but NOT have it stop on the IBP statements, you will need to modify it. You can do so and even have it behave normally if not PERFORMed! One simply need pass a 'flag' to the PROC to let it know what to do. In the example

below, the first program is the DATA/BASIC program that PERFORMs the PROC. The second program is the above PROC modified to work from TCL or DATA/BASIC PERFORM...

```
START.DATE=DATE()
END.DATE=START.DATE+30
START.DATE=START.DATE 'D2/'
END.DATE=END.DATE 'D2/'
PERFORM "MO.INVOICE *PERFORM*":START.DATE:"
":END.DATE
.
etc.
.

MO.INVOICE

PQN
IF %2 # "*PERFORM*" GO 10
MV %1 %3,%4
GO 50
10 C Get input
OENTER START DATE+
TBP:%1
OENTER END DATE+
TBP:%2
50 C Produce report
HSORT CUSTOMERS WITH INVOICE.DATE >=
A"1
H AND
A"2
P
```

When the first program (DATA/BASIC) PERFORMs the PROC above, it passes the dates in the TCL stream after the PROC name. The PROC name (MO.INVOICE) will reside in %1, and the parameter list will go into %2, etc. Note that this would also be the case if the PROC were invoked directly from TCL by:

```
MO.INVOICE *PERFORM* date1 date2
```

The arbitrary flag chosen in this example is '*PERFORM*'. Its only purpose is to allow the PROC to stop for input when it is NOT PERFORMed. If the PROC had been written to get input into %3 and %4 in the first place, it would not have been necessary to shuffle the data down with the 'MV' command. Moreover, the logic could be changed to eliminate a branch when the PROC is not PERFORMed.

Bypassing PROC input statements in this fashion has the added advantage of bypassing the prompts, thus keeping the screen uncluttered.

Lastly, one word of caution. You may CHAIN to a PROC using the above method of passing parameters through the TCL stream. However, if you invoke the DATA/BASIC program doing the CHAIN by PERFORMing it from another DATA/BASIC program, then you will not be able to pass parameters along in the TCL stream. This restriction applies only to releases prior to 7.0.

- Sandy Herring

Q & A

Have you ever been puzzled over how to do something on your system, but you couldn't easily find the answer in the manual? The purpose of this column is to give you answers to those questions.

In each issue we will present Questions and Answers submitted by our readers. We welcome your questions, so please send them to the Editor, *ON-LINE*.

Q: How do you check what release level you have?

A: On the 2.3,4.3,5.3,6.0 systems you can display the LOGON Banner by entering at TCL :PRINT-ERR ERRMSG 335 <cr>. [L.W. Abel]

Q: How can I disable call-waiting on a phone so my modem doesn't disconnect when a second call interrupts the phone line? [Kim Harkness, American Federation of Teachers]

A: When using tone dialing, preface the phone number with *70 (i.e. *70 703-555-1212). After dialing *70 you will get a secondary dial tone. If you are using an auto-dialer it may be necessary to program a brief pause after *70. When using pulse (rotary) dialing, preface the phone number with 1170. In both cases, this will temporarily disable the call-waiting feature. Disconnecting (dropping the line) will reenable call waiting. The above procedure applies to most Bell systems. If you are on a non-Bell system and this procedure does not work, contact your phone company. [Steve Moore]

14/100

14/100 Tips

* When you are going to shut your system down, first do the <Ctrl-Alt-Del> and wait until the memory has been flushed before turning the power to the system off. If you turn the power off while the flush procedure is in progress, there is a chance that the key will be damaged.
* Following Murphy's Law, the black insert in the key housing, which indicates the system serial number, is not designed to go into the housing the "wrong" way. It can, however, be made to fit the wrong way. Be aware that this can cause the key to be erased!
* You might want to make note of the fact that we were successful in running the Series 14/100 on a Compaq 286 portable, with the Series 14/100 in a bus extension pack on the back of the computer.

At this point in the development of 14/100, it is important to know who uses 14/100. What would you like to see in the future? Please send any ideas or suggestions to the Editor.

• Sam Craghead

APPS

Current Application Overlays

The following matrix provides you with the release level of Application Overlays required by each supported Series and OS. It is important that you know which Overlay you should obtain prior to a planned upgrade. For example, if you are upgrading a Series 9000 from 5.1 to 5.3 which uses REALCALC, then you will need to obtain the corresponding Overlay release (REALCALC 2.1C) before upgrading.

Application Overlay	Series 4700	Series 6000	Series 9000	Series 18
A*L*L 1.1	4.3	1.1	1.3	N/A
A*L*L 1.2 (Paper Patches 1-59)	N/A	2.3	5.3	6.0
PCmicroREALITY 2.0B	N/A	1.1	N/A	N/A
PCmicroREALITY 2.1	4.3	2.3	1.3,5.3	6.0
REALCALC 2.1C	4.3	1.1,2.3	1.3,5.3	6.0
REALGRAPH 1.0C	4.3	1.1,2.3	1.3,5.3	6.0
REALLINK 2.0	4.3	1.1,2.3	1.3,5.3	6.0
REALISM/DEVELOPER 1.0A	N/A	2.3 5	.3	6.0
REALITY Integrated Office 2.3	4.3	1.1,2.3	1.3,5.3	6.0
WORDLINK 1.4	N/A	1.1	N/A	N/A
WORDLINK 1.4C	N/A	2.3	1.3,5.3	6.0
WORDMATE 2.1C (Overload Patch Tape Rev A and Paper Patches 1-7)	4.3	1.1,2.3	1.3,5.3	6.0
TRANSACTION LOGGING 1.2	N/A	2.3	5.3	6.0

• Janet Altman

Spooler Fix for RealGraph

The "RealGraph User Guide" notes in Appendix C that certain printers require a spooler fix and cannot be supported at this time.

The "fix" is as follows: linefeed and formfeed delays for the serial printer port must be "0". Setting the delays to "0" will prevent the output of extra null characters to the printer--which garbles the graph.

This "fix" can be accomplished by editing the SYSPROG-PL TERMINAL-SETUP proc and adjusting the TERM statement for the printer port to be TERM ,,,0,0.

• Janet Altman

Lost WORDMATE Memos?

Memos are pretty easy, right? That is until a memo can't be found. Some are lost because the memo was altered or lines were deleted from the top portion of the memo before filing.

Deleting the "COPIES" line, for example, can cause the memo to be lost if done before it is filed. Once the memo is filed it is treated like any other document and can be edited without a problem.

Just remember when creating a memo to "FI" the memo before you change the top portion. This does not refer to a name change or a correction of spelling. I mean something changed or eliminated in the TO:, FROM:, DATE:, SUBJECT:, or COPIES: headings.

Also, a memo can be lost if you file it before entering text into the body of the memo. If you want to create a memo in order to put something into at a later time, put some text below the ruler line and "FI" it. This can be just a word or two.

To summarize, DON'T MODIFY OR CHANGE THE TOP OF THE MEMO BEFORE FILING.

• Terry Smithton

Two REALLINK Tips

The Implementation Advisory (IA) for REALLINK 2.0 contains two important, but often overlooked, recommendations concerning DOS Backup and changing the RL.PAR file.

Before doing the DOS Backup (and Restore) of your PC's hard disk, you should uninstall REALLINK from it. If you do not uninstall REALLINK before backing up, there is a possibility that some of the REALLINK files may not be saved. The files which may not get backed up are the "hidden" files used with REALLINK's copy protection scheme. Since they have not been saved during Backup, they cannot be restored. The result is that REALLINK may not be accessible.

A similiar result occurs if the hard disk crashes and needs to be replaced. Trying to reinstall REALLINK after replacing the disk will generally fail, since the Distribution diskette does not contain the hidden copy protection files.

In both of these cases, you will have to order a replacement of your REALLINK package.

The IA also recommends another helpful tip. Since the REALLINK parameter file, RL.PAR, is deleted from the PC when uninstalling REALLINK, any changes you may have made to this file using SETPAR will be lost. You can eliminate the need to reconfigure the RL.PAR parameters by copying the RL.PAR file from the disc where REALLINK has been installed onto the REALLINK Distribution diskette.

Please review the REALLINK 2.0 Implementation Advisory for more details.

- L.W. Abel

Creating an Account in REALISM

After loading REALISM, there will be two new accounts on your system. The accounts are PP.CONTROL and PP.GLOBAL and they are the only accounts where REALISM is active. To "wrap" the rest of the system, each account needs to be setup with the Account Setup process in the PP system. Once the account has been setup, one cannot log on to the account unless they go through REALISM. However, REALISM will not let you log on to the account until there is a logical system for that account. Logical systems are created and maintained by the System Setup process in the PP system.

To create and wrap new accounts in REALISM, one must first be in the SYSPROG account. Select the system from your system menu that will take you to the SYSPROG account, or log on to the SYSPROG account if SYSPROG has not been wrapped. However, if SYSPROG is left unwrapped, a hole is left in the security of the system and the potential for someone breaking into the system is higher.

Once you are in the SYSPROG account, get to XTCL and create the account using the CREATE-ACCOUNT verb. Now you can go to the PP system and wrap the newly created account via the Account Setup process. Do not forget to also create a system for the account in System Setup. If you do not setup a system for the account, the account will not be accessible to anyone (not even a Super User).

- Bryan Glassick

COMMS

Current COMMS Releases

The Product/Release matrix shown below decribes the current release of software for the various communications products.

Any software fixes which may be required will only be produced for the most current release.

If you plan to upgrade your McDonnell Douglas Computer Systems Company system to the next hardware system or Operating System release, contact your local dealer or VAR to make sure you have the required communications software prior to the upgrade. If in doubt, have your dealer or analyst contact the McDonnell Douglas Field Service Communications Support Group at (800) 678-3399.

COMMS PRODUCT RELEASE	Series 4700	Series 6000	Series 9000	Series 14	Series 18
MCC 3.1 (Rev 4)	N/A	1.1	N/A	N/A	N/A
MCC (2.3) 3.1 (Rev 5)	N/A	2.3	N/A	N/A	N/A
MCC (6.0) 3.1 (Rev 3)	N/A	N/A	N/A	N/A	6.0
FTU 1.2 (Rev I)	4.3	1.1, 2.3	1.3, 5.3	2.3	6.0
FTU 1.3 (Rev G)	N/A	N/A	N/A	N/A	7.0
M3800 (2780) 1.3 (A)	4.3	N/A	1.3, 5.3	N/A	N/A
M3800 (SNA) 5.3 (A)	4.3	2.3	1.3, 5.3	N/A	N/A
5750 (TCL COMMS) Rev 2	N/A	N/A	1.3, 5.3	N/A	N/A
2602 BISYNC	4.3	N/A	N/A	N/A	N/A

NOTES:

5750 Communications Software no longer resides on the Sysgen tapes. If you require this software, then have your dealer or VAR contact the McDonnell Douglas Field Service Communications Support Group.

2602 Bisync runs only on Series 4700 systems. The software is included on the Series 4700 4.3 Sysgen tape.

- Richard Yeh

File Transfer Utility (FTU) Basic Concepts

The File Transfer Utility (FTU) is a set of programs and files which allow you to transfer data between two McDonnell Douglas Computer Systems Company (MDCSC) minicomputers and/or microcomputers. The FTU will not communicate with other vendor's computers unless you write a comparable FTU on that vendor's hardware!

The FTU programs run on a real (i.e. not TIPH) serial port on each computer, in the same way as any other application would run (such as Wordmate, etc.). The serial port running the FTU is connected to the other system's serial port which is also running the FTU.

The FTU may run on several serial ports at the same time. Each serial port is connected to a serial port on another computer. In this way, one computer can be connected to several other computers, or one computer can be connected to another computer using several serial lines.

Alternatively, a modem may be connected to the serial port running the FTU. The FTU can be set up to control the modem and make it call the remote system.

If your system is a 1.x Series 9000 or Series 4700 system, then an additional FTU program is run on another system port. This program may be run as a TIPH process, and is referred to as the "secondary FTU process."

Each secondary process is directly associated to a particular FTU process running on a serial port. There is one secondary process for each "primary" process running on each computer.

The FTU programs running on the serial port are referred to as the "Primary FTU process," even if no secondary process is required.

The inter-computer connection is made with a serial cable in the same manner you would connect a terminal (Prism, etc.) to a system.

The cable is the same as a terminal cable, except that both ends have 9 pin connectors on them (unless you have a non-FCC Reality system). The pinouts are as follows:

9 Pin		9 Pin
Frame Ground	1 ------	1 Frame Ground
TX Data	2 ------	3 RX Data
RX Date	3 ------	2 TX Data
* RTS	4 ------	5 CTS
* CTS	5 ------	4 RTS
Signal Ground	7 ------	7 Signal Ground

* Optional: Request To Send/Clear To Send. Don't connect these wires unless you intend to use them.

You may use the RTS/CTS pins for flow control, but it is easier to simply use Xon/Xoff for flow control. For a "quick" cable, you can use two Prism terminal cables, connect the 25 pin ends using a breakout box, and use the breakout box to switch Pins 2 and 3.

Conceptually, the FTU is simply a program which performs a lot of "terminal input/output," very much like Wordmate or any other data entry type utility. The only difference is that instead of the program "talking" to a user at a terminal, the program is talking to another program.

When an FTU communications task is running, the task can be viewed as two BASIC programs talking to one another. One program executes a "PRINT" statement (as though it were sending something to your terminal screen), and the other program executes an "INPUT" statement (as though it were accepting what you were typing on your keyboard). The programs then reverse roles.

In other words, both programs "think" they are talking to a user at a terminal. Beyond this concept, the FTU keeps the Print/Input--Input/Print sequence synchronized, and performs other kinds of error control.

This is the reason Pins 2 and 3 are reversed: the transmit pin (2) on each computer is connected to the receive pin (3) on the opposite computer.

• Richard Yeh

IBM Connectivity Services

McDonnell Douglas Field Service Company (MDFSCO) has provided data communication services for years. In the last issue we introduced some of the new offerings in wide area networks. In this section we provide a summary of the IBM CONNECTIVITY and the Monthly Maintenance Services available for the IBM Emulation products.

Centralized Network Support Services

Product Support provides a high level of centralized network support services for the following IBM emulation products.

(1) Bisync Batch:	Multiple Communication Controller(MCC), M3810
(2) SNA Batch:	SNA Controller(SNAC), M3830
(3) SNA Interactive:	SNAC, M3840
(4) SNA Batch and Interactive:	SNAC, M3850

Telephone support and consultation are the most significant part of this service. Our senior technical personnel, highly skilled in telecommunications and IBM's Bisync and SNA networks, help troubleshoot and isolate network problems in the complex multivendor environments. If the problem is isolated to a McDonnell Douglas Computer Systems Company

product, the MDFSCO network analyst will fix it. If the problem appears to be caused by equipment not supported by MDFSCO, the analyst will explain the problem and may suggest a possible solution to the other vendor. The analyst may continue to work on the problem caused by another vendor's equipment on a billable basis if the customer desires.

MDFSCO's Remote Diagnostic Center (RDC), equipped with state-of-the-art tools, provides extensive network analysis capability. Using 2400, 4800 or 9600 bits per second dial-up synchronous modems, the analyst can establish a Bisync or a SDLC link with an IBM mainframe or other products emulating IBM equipment.

MDFSCO SERVICES FOR M38XXX, MCC & SNAC

I. INSTALLATION AND NETWORK IMPLEMENTATION

(A) Pre-site Survey
1. Site planning (equipment layout)
   - Power requirement
   - Air conditioning
   - Humidifying equipment
   - Carpeting

2. Network planning with IBM support group
   - Network facilities
   - Telco line access
   - Network cables

(B) Physical Installation
- Power measurements and adjustments
- System integration
- Installation and hardware configuration of PC boards
- Standalone diagnostics and segment tests
- Cable attachment

(C) Software Installation and Network Implementation
1. IBM Emulation software installation
   - Communication SYSGEN
   - Network interface connection
2. Network configuration (IBM protocol parameters)
   - Network co-ordination and consultation with NCP/VTAM and IBM application (JES, POWER, etc.) programmers

(D) Network Acceptance
- Batch and/or interactive operation
- System demonstration

(E) Training Workshop
- Operations & procedures
- Bisync/SNA overview
- Emulation package in IBM terms
- Error messages
- Keyboard layout for IBM emulation

The following are separate customized services offered on a consulting basis.

(1) Develop IBM application programs

(2) Develop MDCSC application programs

(3) Provide cables other than defined by M38XX models

(4) Troubleshoot non-MDCSC equipment

(5) Telco support

Network Consulting Services

Network Consulting service is available with a two-hour minimum charge.

- Niki Jhaveri

The Three Most Common Modem Problems

The "Top 3" most common problems encountered by users of asynchronous modems are described in the following paragraphs. This "hit list" has been distilled from over five years of data communications experience at the national technical support level.

The **third** most common problem is "to DTR or not to DTR". The vast majority of all modems REQUIRE the Data Terminal Ready (DTR) signal to operate. DTR can be supplied by the terminal, printer, or computer by adding a wire in the modem cable from pin 20 to pin 20.

Fortunately, most async modems have the ability to generate the high (> +3volts) internally. Most async modems will then offer a configuration option of following the state of the pin 20 DTR input OR ignoring the pin 20 DTR input and assuming DTR is ALWAYS present by generating DTR internally. If the "Ignore DTR" option is selected (as it usually should be) then a standard 2-2, 3-3 & 7-7 wired cable can be used.

Another method can also be used. Add a jumper on the cable AT THE MODEM END from pin 9 (+voltage) to pin 20 (DTR). Mark this end "MODEM"! The problem is that this creates a unique, dedicated, polarized cable.

The **second** most common problem is in "correct cable pinouts". Most async installations require only three (3) wires in the modem cable-TXD, RXD and SG.

Transmit Data on pin 2
Receive Data on pin 3
Signal Ground on pin 7

There is NO "crossover" or "twist" of these three wires. Each wire should be twisted with a ground

return. They should be wired "straight through" 2-2, 3-3 & 7-7. When required for FCC compliance, the Frame Ground (FG) on pin 1 can be connected to the cable shield drain.

Of course, all the above assumes an EIA-232 (formerly RS232) connection using standard DB25P connectors between a DCE wired modem and a DTE wired terminal, printer or computer.

The **first** most common problem is "originate or answer." Async modems are used either to originate a call to an answering modem OR to answer a call from an originating modem. (Some are used to hold coffee cups.) The configuration options are DIFFERENT for ORiGinating and ANSwering modems.

Generally, all of the configuration option settings used for a call originating modem can be used for a call answering modem EXCEPT for the following THREE OPTIONS.

* ECHO
* COMMAND RECOGNITION
* RESULT CODES

When an async modem is attached to a terminal to be used to originate (dial-out) a call to another location, the modem must be configured to ECHO the keyboard entries to visually verify correct commands. Likewise, the modem must be configured to RECOGNIZE COMMANDS that are being entered from the keyboard, as opposed to ignoring the commands. Also, the modem must be optioned to report to the terminal the RESULTS of executing the commands, as well as to report any other important activities inside the modem.

However, when an async modem is attached to a host computer port to answer a (dial-in) call from another location, the ECHO option should be disabled so "LOGON PLEASE:" etc... will not just be echoed back to the computer, followed by "ERROR" from the modem because it did not recognize "LOGON PLEASE:" as a valid command. You can imagine how the computer port will respond if these types of messages are entered when all it is expecting is an Account Name and Password.

If all three--ECHO, COMMAND RECOGNITION, & RESULT CODES- -are not disabled, a dialogue will ensue that will so severly ensnare the microprocessors driving the modem port and host port that only a disconnect of the modem cable, power off/on of the modem, and reset of the host port can clear the situation.

By far the most common symptom of this failure to disable ECHO, COMMAND RECOGNITION, & RESULTS on a dial-in modem is this:

After the very first dial-in attempt is successful, subsequent dial-in attempts fail because the modem will not even answer the phone line when it is ringing. In fact, the modem Send Data and Receive Data indicators look as if someone were already dialed in and having a busy session.

NOW, you can solve this problem! If you have other perplexing communications problems, please call 800-678-3399 for support.

• Steve Moore

FEEDBACK

Dear Editor:

"I look forward to each new issue of *ON-LINE*. I've consistently found articles of interest and value in each issue. In the most recent issue, Vol. 2 No. 3, I particularly enjoyed the discussion of SET-WRITES in Star Power, the review of workspace allocation in Performance, and Henry Egger's article in Think Tank.

I'd like to offer one suggestion: please include the magazine name, volume and number at the bottom or top of each page. I frequently copy a page, highlight a few lines, and place the copy in our Programmer's Reference Manual. Unless I remember to write in the issue number, I won't know the source of the article when I turn to the copy.

Keep up the good work!"

H. Clay Minor
Manager of Engineering
* Regent Controls INC.

To: Editor, ON-LINE

"Just a note to let you know that I find *ON-LINE* very informative and I do hope you continue to publish...."

Rose M. Flaherty
Computer Liaison Technician
Risk Management Division
* Safeway Stores, Inc.

Editor's Note: We appreciate your ideas and comments. We are reviewing our layout requirements to satisfy your suggestion, Clay. And Rose, we intend to publish *ON-LINE* for as long as it remains useful to you. Thank you again for your letters.

• ED.

CUSTOMER ED.

FIELD SERVICE COMPANY TO OFFER CUSTOMER TRAINING

Effective 1 May 1990, McDonnell Douglas Field Service Company will be offering system software training on the REALITY Operating System to customers. The schedule below reflects the length and tuition for the various courses that are offered. Training scheduled through Harold Prottas and Associates and Discovery Consultant Services is subject to their respective course lengths and tuitions. We would like to hear from you regarding what type of training you would like to see in the future. Presently our training will only be offered in our Santa Ana location and at customer sites. However, our plans are to offer training at other locations throughout the United States. To enroll in a class please contact the registrar at (714) 566-5100. For further information, please contact Jim Lau at (714) 566-5086.

- Jim Lau

MCDONNELL DOUGLAS CUSTOMER EDUCATION SCHEDULE

	APR					MAY				JUN				JUL					AUG			
COURSES OFFERED	2	9	16	23	30	7	14	21	28	4	11	18	26	2	9	16	23	30	6	13	20	37
INTRO TO REALITY O/S 5 Days $1000/Person		SL	DC SA				BO SA									SA		DC				
ADVANCED REALITY O/S 5 Days $1000/Person				SA							TA											
REALITY O/S 7.0 5 Days $1000/Person																					SA	
INTRO TO DATA/BASIC 5 Days $1000/Person			SL								SA					AT						
ADVANCED DATA/BASIC 5 Days $1000/Person			SL														SA					
ACCELERATED DATA/BASIC 5 Days $900/Person						DC																
PROC PROGRAMMING 3 Days $600/Person										SA 6-8												
SYSTEM TROUBLESHOOTING 5 Days $1000/Person				AT				SA					DC							SA		
WORDMATE WORD PROCESSING 2 Days $400/Person			SA										SA								SA	
REALISM SHELL 4 Days $800/Person																						
REALISM DEVELOPER 4 Days $800/Person		SA																	SA			
A*L*L* 5 Days $1000/Person																						
INTRO TO DOS FOR REALLINK* 1 Day $200/Person																				SA		
REALLINK* 1 Day $200/Person																				SA		
SOV. REFORMAT/QUICKSTARTS 4 Days $1000/Person																						
SOV. BASIC PROGRAMMING 4.5 Days $1000/Person				SA																		

Data communications classes are available on an as needed basis. Classes include IBM bisync or SNA for the M7000, M6000, M9000, and Series 18. For more information please contact the Data Communications Support Department in Product Support at (714) 566-4827.

LOCATION CODES: AT = ATLANTA, GA; BO = BOSTON, MA; DC = WAHSINGTON, DC; SA = SANTA ANA, CA; SL = ST. LOUIS, MO; TA = TAMPA, FL.

GooFiEs

Central Support
ON-LINE

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