Central Support
ON-LINE

Published for System Software Users

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EDITORIAL

ON-LINE Marks First Anniversary

One year has passed since the first *ON-LINE* went to print. During that time, we have published over 70 articles in a dozen columns. Our purpose in publishing *ON-LINE* was (and still is) to provide you with relevant technical information regarding the utilization of your McDonnell Douglas computer system.

Although we have received comments about how successful our efforts have been in achieving our purpose, those responses have been intermittent thus far. We really want to know what you like and dislike about *ON-LINE*! So, in partial celebration of our one year anniversary, you will find included in this issue our first *ON-LINE* **Reader's Questionnaire.**

By completing and returning the enclosed postage-paid survey, you can help us in determining what you want to read in future issues of *ON-LINE*. Please take a few moments to tell us what you think about *ON-LINE*. Your opinion does count.

To highlight this special *ON-LINE* occasion, you will find in this issue several articles of particular interest, as well as a few changes. Our Product Support Manager, Christine Harding, discusses "Why do I pay an Operating System License Fee?" and introduces Bob Aull as the new Central Support Section Manager. Mauro Mendoza presents useful insights about MDFSCO's escalation procedure.

Steve Gill reveals why joining MICRU International **now** could be a real bargin for you. Will Edwards and Jim Norris continue with their **Performance Series** under the ROS column. The topic for Part 2 is correctly using TIMESLICE and SET-WRITES. And Niki Jhaveri begins another COMMS series discussing SNA basics.

The Star Power Column, which provides information you can use immediately, has been moved to the front of the newsletter. A new column, **14/100**, has been added for customers using the new Series 14/100 product.

After a year as Editor, I realize *ON-LINE* is the result of the contributions and dedication of many people. If you have talked to a Support Manager or a Support Analyst during the past year, you have probably spoken with an *ON-LINE* contributor. To them and to you, our readers, I express my gratitude in celebrating this first Anniversary!

- L.W. Abel

STAR POWER

This column is intended to **provide you with information you can use immediately** to improve the utilization of your system or to avoid potential problems. Usually, the topics discussed are derived from customers' questions or problems which have been frequently reported to Central Support during the past quarter.

Too Many LPTRs Can Spoil Your Spooler

When creating a form queue with no device assigned, we find that some customers assign to the queue a DEVICE-TYPE = LPTR and DEVICE# = 0. This type of assignment causes problems for the system.

The DEVICE-TYPE determines which device will perform the output; DEVICE# assigns an address to that device. For each despool device that exists on the system there is a work area. When the system calculates an offset into this area for a device address of 0, the figure arrived at will be erroneous since all devices start at address 1.

Therefore, if a form queue has no device, it should be given a DEVICE-TYPE of 0 as well as a DEVICE# of 0, as shown below.

```
:SP-CREATE
FORM-QUEUE   DEVICE-TYPE(LPTR,TAPE,PORT)
                DEVICE#: HOLDQ 0 0
```

Using VERIFY-SAVE (I)

In a previous issue of *ON-LINE* (Volume 1, Number 3), we emphasized the importance of doing a VERIFY-SAVE after a FILE-SAVE (for Series 6000 2.3, Series 9000 5.3 and Series 18 6.0 systems). During the past quarter, we have continued to receive calls concerning restore problems. In many cases, these problems could have been prevented, if a VERIFY-SAVE had been initiated prior to restoring the system.

It is imperative that time be taken to use this utility after each FILE-SAVE and ACCOUNT-SAVE. Since using the VERIFY-SAVE utility is system-intensive, it should be performed during non-peak operational hours. The VERIFY-SAVE utility is described in the *Programmer's Reference Manual* (PRM) or the *Operating System Enhancements Manual.*

To verify an ACCOUNT-SAVE **individually**, you need to use the **'I' option**, as shown below:

```
:VERIFY-SAVE (I
```

You may want to annotate your manual with this option, since it was accidently omitted during the preparation of the manual.

- Cherylnn Pope

LOGON:

McDonnell Douglas Field Service Escalation Procedure

McDonnell Douglas Field Service Company (MDFSCO) has an official escalation policy which has been recently updated and implemented throughout the company.

This policy serves a basic need: To ensure timely customer problem resolution for all hardware products supported by MDFSCO and all McDonnell Douglas Computer Systems Company (MDCSC) software problems. We do this by providing you, the customer, with a focal point for all field service issues. The local MDFSCO District Manager (DM) is responsible for keeping you abreast of the status of the service call.

By following this policy, the DM has access to company-wide management and technical resources, guaranteeing that Field Engineers (FEs) have the best possible resources to quickly isolate and resolve your technical problems. This also ensures you a high level of visibility with our senior management should problems become involved.

Our Central Dispatch Center operates 24 hours a day, seven days a week, 365 days a year. Your initial point of contact is with our Customer Service Representatives (CSRs). Upon receipt of your system ID, an incident is immediately opened and assigned a number. Your call will be dispatched to the primary local FE if the nature of the call is hardware related. If the call is software related, the call is assigned to our in-house software support analysts. All calls are handled by severity levels and tracked through our system from the time the incident is opened until it is resolved.

Severity levels are established by the CSR after speaking to you. If the nature of the call is unclear (whether it is software or hardware) a judgment call is made by the CSR in establishing the severity level and assigning the call. The technical person responding to your call further verifies whether the right severity level has been assigned and whether the problem is software, hardware or a combination of both. (S)he then proceeds to resolve your problem.

It is important that you write down the **incident number** given to you. This helps greatly whenever you need to inquire about your specific incident.

Following is a brief explanation of the severity levels used which may assist you in understanding how your problem is categorized.

1. **Severity Level 1 (Highest)** - Any failure of hardware supported by MDFSCO and or failure of MDCSC software which causes a severe impact on the customer's business. Failures resulting in loss of production which CANNOT be circumvented.
   A. System down hardware/software.
   B. Communications processor or console down.
2. **Severity Level 2 (High)** - Any failure causing a partial interruption or impairment of a customer's production which CANNOT be circumvented.
   A. A process is inoperative (such as an A*L*L application is aborting every time a single user tries to logon, but the rest of the system processes are working.)
   B. Peripheral related problems which do not completely interrupt the customer's processing ability.
3. **Severity Level 3 (Medium)** - Any failure causing a moderate interruption or impairment of a customer's production which CAN be circumvented.
   A. The customer is able to logon to WORDMATE but is having an intermittent problem printing a specific document.
   B. Keyboard problems.
   C. Intermittent printer or terminal problems.

4. **Severity Level 4 (Low)** - Problem with no observable impact on the customer's production.
   A. General information questions relating to technical advice on generalities and not on specific problems.
   B. Scheduled Preventive Maintenance.
   C. Installations, upgrades and deinstallations.

Escalation of customer problems is handled in two ways. First, there is a Management Alert Escalation process managed by the Central Dispatch system. The system automatically alerts the appropriate levels of management as time passes, eventually alerting the Executive Vice President of MDFSCO. The Technical Escalation process is the other procedure in place that assures your local FE has access to higher levels of technical support should your problem be prolonged.

Timely customer response and **prompt resolution** of your problem are our highest priorities. Every business morning, MDFSCO senior management conducts a conference which focuses on reviewing unresolved problems, designing corrective strategies, and implementing an effective course of action.

By closely following this escalation policy, MDFSCO is confident that it can provide you, our customer, with quality service.

- Mauro Mendoza

Why Do I Pay an Operating System License Fee?

Many of you have asked us the purpose of the Operating System License Fee on your monthly maintenance bill. For many years, when our company began marketing the product, the monthly license fee was called a "Firmware License Fee." At that time it was strictly a "right-to-use" fee which authorized you to use the McDonnell Douglas proprietary operating system and firmware.

Several years ago the company started the Central Support group in order to provide centralized operating system software support for end-users of the McDonnell Douglas Computer Systems Company products. At that time the scope of the Firmware License Fee was broadened to include software support. Hence, the name changed to "Operating System Support and License Fee." Although you continue to pay for a right-to-use fee, several additional services have been included.

Foremost of the services is telephone support from 8:00 a.m. to 5:00 p.m. during your **local time** on the operating system of REALITY-based products. Your problems are dealt with in a technically competent and courteous manner.

One process established to help us in achieving consistently good follow-up is the formal escalation procedure. After a customer "opens" an incident by calling Central Dispatch, the escalation procedure is used to monitor the development of the incident through resolution. Throughout this procedure, appropiate levels of MDFSCO management are notified of the incident's status based upon its priority and the time elapsed since it was opened. These incidents are reviewed daily. For more specifics on the escalation procedure, please see the preceding article.

In addition, the quarterly *ON-LINE* technical newsletter was created and is included in the support package. Lastly, the Central Support group is introducing a new Bulletin Board Service (BBS). The BBS's features are discussed in the article which follows.

All of the services discussed above are covered by your monthly Operating System Support and License Fee. You should know that the same personnel supporting you for these services also offer other services which are available to you on a billable basis. These services include: 24-hour per day/7 days a week software support; performance analysis studies; assembly language user mode conversions; datacommunications consulting and programming modifications.

If you have any questions, please contact Grace Varela through our toll-free Central Dispatch number (800) 678-3399 for more information.

- Christine Harding

New Bulletin Board System Announced

McDonnell Douglas Field Service Company is in the process of introducing a Product Support public bulletin board, named **BBS,** for use by its users.

Although registration as a board member is required for access to the BBS, its use is included as part of your Operating System Support License Fee.

The board consists of many text files which can be accessed and read by the members of the BBS. Some of the available files follow:

* Current Operating System (OS) releases, overload patch tapes, and paper patches
* Compatibility Matrix of Applications overlays
* Paper patch descriptions
* OS ABS frame descriptions
* List of known aborts
* Past issues of *ON-LINE*
* User documentation catalog

The Electronic Mail feature allows board members to communicate with each other privately or with specific groups. Several public boards have

been designed to encourage the public posting of members' questions, announcements, and responses.

In addition to these features, certain boards are also available under software support contracts. For example, contracted Series 14/100 and REALISM users will have special access to product-specific information, not generally available to other board members. (Note: Both of these products were reviewed in *ON-LINE*, Volume 1, Issue 3, pages 3-4. The Series 14/100 Support Plan can be found on the front page of *ON-LINE*, Volume 2, Issue 1.)

The software package which runs the board is McDonnell Douglas' REALISM. Our choice of REALISM for the BBS was based upon many of its features, including security, management control, batch processing, and corporate documentation. REALISM is especially "powerful" in the area of user friendliness and access protection.

Access to the board will be phased in across the United States. Please watch for a forthcoming letter inviting you to register as a BBS member.

- George Jorgensen

New Manager for Central Support

On April 17, 1989, Bob Aull joined McDonnell Douglas Field Service Company as Section Manager of Central Support. This is the group that supports all customer needs pertaining to the operating systems of the REALITY product line.

Bob has previously worked for McDonnell Douglas as an analyst in New Jersey, as an Account Manager in Field Service Sales for McDonnell Douglas Computer Systems Company (MDCSC), and most recently as the Western Regional Systems Manager for MDCSC Sales.

Bob comes to us with a wealth of knowledge in the data processing industry, strong management skills and most importantly, a high sensitivity and responsiveness to customers. He will be working closely with our Field Service District Managers in his new position. Bob can be reached by calling (714) 250-1000, extension 7449.

- Christine Harding

MARKETING

MICRU Slashes Membership Dues

MICRU International, the official user group serving McDonnell Douglas computer users, recently announced a significant reduction in annual membership dues. The cost of joining or renewing has been reduced from $175 to $50--a bargain by any standard! Benefits of membership are, primarily, enhanced contact and communication with other users and also with McDonnell Douglas.

In addition to receiving a membership directory, a member can obtain impartial information available only through the MICRU International Executive Office. *MICRU DATA*, the group's newsletter, is published bi-monthly and distributed to the entire membership.

This year marks the 10th Anniversary of MICRU International. The 1989 annual conference will be held in Dallas; beginning on Sunday, June 18th and ending on Tuesday, June 20. Conference highlights will include addresses by Bill Freeman, Senior Vice President of McDonnell Douglas Computer Systems Company and Bert Novak, Executive Vice President McDonnell Douglas Field Service Company and U.S. Operations. There will be a question and answer session immediately following the addresses.

Of special interest at the conference will be a panel of experts staffed by top Engineering and Support authorities. Discussions will include an operating system update, highlighting the new features available on Release 7.0. A live demonstration of the latest communications offerings is also scheduled. The Vendor Room will feature McDonnell Douglas hardware and software, along with the software products of several of its key dealers and suppliers.

For additional information regarding MICRU International or the upcoming conference, contact the appropriate Regional Coordinator listed below.

Region I: (ME,RI,CT,NH,VT,MA): H. Clay Minor, Regent Controls, Inc. (203)736-2924

Region II: (PA,NY,NJ): Louis Bramante, Seabrook Housing Corp. (609)451-3350

Region III: (KY,WV,MD,DE,DC,TN,NC, MS,AL,GA,SC,FL,VA): Marcie Gebauer, Discovery Consultant Services (703)476 0837

Region IV: (MI,IN,OH): Debbie Venci, c/o Barium and Chemicals (614)282-9776

Region V: (MN,WI,IA,IL,MO,KS,NB,SD,ND): John Wexler, Beauty Craft Supply and Equipment (612)935-4420

Region VII: (WA,MT,ID,WY,OR,CO,UT,NV,CA, AZ,NM,AK,HI): Michael Palmer, University of Wyoming (307)766-4867

Region VI: (OK,LA,AR,TX) {Herb Jackson

Region VIII: & IX (Canada) {MICRU Int'l

Region X: (Outside No. America) {(303)526-9862

- 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. If you do not have the current release or patches installed for your particular Operating System contact the following:

For Independent Sales Organization (ISO) customers, please contact your dealer.

For Branch customers, please contact your FE through Central Dispatch to schedule a time for installation.

Series	Release	Patches (PP = Paper Patches)
4700	4.3RevD	PP1-2
6000	2.3RevD	RevB Tape (Includes PP1-68) PP 69,70A,79,81A,82,84-89, 91-92,103
	1.1RevD	RevB Tape
9000	5.3RevD	RevB Tape(IncludesPP1-65) PP 66,67A,68-70,71A,72-83, 85-86,106
	1.3RevC	RevA Tape
18	6.0RevF	RevA Tape(IncludesPP1-47) PP 48-52,57-59,66

Recently we have been receiving calls for problems that have been corrected by the above paper patches and patch tapes. If you have encountered what appears as an unusual and repetitive system condition (what is sometimes called a "bug") during processing, it would be in your best interest to **ensure your system is patched to the current level** as indicated above. You should also check that any application overlays are at current patch levels. This information is presented under the APPS column featured on page 8.

If the problem persists after the installation of the patches (either tape or paper), then you should call Central Support for assistance in diagnosing the problem. Since some of these tapes often include patches that are not released in paper patch form, it is advisable to obtain and install the patch tapes along with subsequently released paper patches.

- Mike Bingman

PERFORMANCE (PART 2)

Using TIMESLICE and SET-WRITES

This is the second in a series of articles about system performance which will appear in *ON-LINE*. It is hoped that this series will provide you with the fundamental concepts and procedures to "fine-tune" the performance of your system.

• TIMESLICE

On any interactive multi-user system the aim of the Operating System and hardware is to make it appear that a user has sole and continuous use of the system. In reality, each process is given processor time in turn for only a few milliseconds. Individual users aren't aware that the processor has dedicated only a small period of time to their tasks because it is back and working again before a pause is noticed.

Timeslice is the amount of time in milliseconds a process is allowed to use the CPU before it is stopped and the next one serviced. If this time is too large, then the apparent response time of the system will decrease because it takes more time to get back to a particular user after servicing all of the other users. On the other hand, if the timeslice is too small, the overhead on the system of continually starting and stopping processes will degrade system efficiency.

The easiest way to determine the best setting for your system is to use the WHERE verb with the E(lapsed) and B(usy) options to determine the system workload. By looking at system activity over a period of time, 10 seconds by default, the number of activations for each process can be added together, along with the number of elapsed CPU milliseconds. The average number of milliseconds per activation is determined by dividing the total number of milliseconds by the total number of activations. This number is then the average timeslice actually used by the system's currently active processes.

This is an example of a WHERE (EB) from a typical system:

PORT	PCBFID	PS	P3	ELAPSED-CPU	ELAPSED-ACT	ELAPSED-RDS	TSLC	LOCK
003	0008C0	7A	FF	285	108	199	5	FF
004	000900	76	FF	728	269	630	5	FF
005	000940	7A	FF	909	298	513	5	FF
007	0009C0	7A	FF	475	161	279	5	FF
048	001400	7E	FF	414	1906	739	5	FF
049	001440	7A	FF	404	161	434	5	FF
068	001900	7E	FF	3261	1050	0	5	FF
074	001A80	7A	FF	220	82	178	5	FF
106	002280	76	FF	184	96	378	5	FF
*145	002C40	7E	FF	162	43	0	5	FF
147	002CC0	7A	FF	87	68	154	5	FF
174	003380	5E	FF	2666	893	2296	5	FF
253	004740	3F	FF	25	58	0	5	FF

Total CPU milliseconds = 9820
Total number of activations = 5193
Average CPU time/activation =
9820/5193 = 1.89 milliseconds

To determine what your timeslice should be:

1) The timeslice should be set to at least four times the recommended value as shown below:

Series	Release	Timeslice
18	6.0	2
9000	5.3	4
6000	2.3	10

2) Perform WHERE (EB) several times during a **normal working day**; obtain the average CPU time/activation values; then, reset the timeslices back to their original values.
3) Take an average value from these samples and then round up to the nearest whole millisecond.
4) Set the resulting timeslice value with the TIMESLICE command, using the (A) option to set timeslice for all processes.

Thus, for the example above, the timeslice for all processes could be set to two milliseconds by issuing the command: TIMESLICE 2 (A).

Although this article has discussed setting the timeslice for all users, it is possible to set individual processes to "fine tune" system response. However, it is important to keep in mind the effect on system performance should a process' timeslice be set too high or too low.

- **SET-WRITES**

As computer memory has become less expensive, faster, and more reliable during the last decade, it has been used to increase the overall performance by reducing the demand on relatively slow disc drives. Retrieving data from memory is much more efficient than getting it from the disc; however, memory is by its nature volatile. The issues concerning SET-WRITES are twofold. The first issue is data integrity. Should the system go down, it is important not to lose the data stored exclusively in memory.

The second issue is that when all of available memory is full, data must be written to disc so as to have memory available in which to read data.

Overall, the goal is to balance these factors, making sure to regularly flush data from memory to disc, yet at the same time not imposing too great an overhead on the system, which would cause system degradation.

The first question to ask is how much extra disc I/O can the system withstand. In the calculations below a low disc I/O is used. Except in the most unusual of circumstances, any disc drive will be able to cope with 1/8 of an I/O per second. It is also true that this extra disc overhead will ultimately reduce the overhead at peak times.

SET-WRITES is the number of user activations the system will perform before flushing a buffer or buffers from main memory to disc. In order to calculate the number of activations that will cause a rate of 1/8 writes/second/drive, it is first necessary to determine how many disc drives are on the system.

This can be determined by entering WHAT (or LIMITS for Series 6000 system) at TCL from the SYSPROG account. At the bottom of the display there will be the disc drive configuration for the system. In the example given below from a Series 18 system, there are six drives:

DISC DRIVE CONFIGURATION:

IOP	CONTROLLER	CHANNEL	TYPE
E8	07	01	3
E9	07	01	3
EA	07	01	3
E8	07	02	3
E9	07	02	3
EA	07	02	3

Therefore, for six drives at 1/8 of an I/O per second per drive the SET-WRITES value should cause .75 extra I/Os per second overall.

The second step is to determine how many user activations there are per second, again using WHERE (EB). In the example given in the TIMESLICE discussion, there were 5193 activations in the 10 second default time period. In other words, there were 519.3 activations per second; therefore, to achieve 1 extra I/O per second the SET-WRITES value would be 519. To achieve .75 extra I/Os per second, the SET-WRITES value would be 519/.75 = 692. This can be set from the SYSPROG account at TCL by entering the command SET-WRITES 692.

Unlike timeslice, which should be determined at normal working times, **SET-WRITES should be determined at the busiest time of day** and should be set to the largest of a number of calculated values. When the system is normally loaded, there is enough time for it to maintain its memory without outside intervention. Only during the busiest times of the working day is it necessary to force data from memory to disc.

- Will Edwards & Jim Norris

New GCR Tape Drive on Series 18

GCR represents **Group-Coded Recording**. In GCR mode, tape data is encoded into groups of seven data characters--within the data blocks--with their own error correction character. This scheme allows a higher level of error correction than that provided by **Phase-Encoded** recording as with PE (1600 BPI) or DDPE (3200 BPI). Two channel dropouts can be corrected before a hard error occurs rather than the single channel correction that is

available with PE and DDPE. Therefore, **fewer tape errors should be seen on marginal media.**

With the introduction of the new Kennedy GCR Tape Drive on Series 18, Central Support has received calls concerning incompatability with tapes generated on other vendors' tape units. This problem occurs when trying to read tapes recorded at 3200 BPI on either a Cipher or Pertec tape drive while the Kennedy drive is set with the REMOTE density selection. A simple workaround is to use 3200 BPI with the REMOTE density LED off.

The cause of this incompatability has to do with an ID burst written on the tape. An ID burst is a recording of all 1s in a specific data channel at the beginning of tape prior to the user's data. For 800, 1600 and 6250 mode there is an industry standard indicating which channel is used for the burst. Since no industrial standard existed during the introduction of 3200 BPI tape drives, both Cipher and Pertec have used different methods to record the ID burst.

In the REMOTE density mode of operation, the Kennedy drive attempts to read the ID burst at its present density. If the drive is unable to read it, the tape is rewound to BOT and the next lower density is selected. This sequence continues until either the ID burst has been read, or an error condition has been generated because the drive could not read the tape at the lowest density of 800 BPI.

Thus, the benefit to you is that **twice as much data can be placed on a reel of tape** than when recorded at 3200 BPI. Consequently, **only half the time is needed to do the same job.**

- Brian McKinstry

14/100

Installing an 8-Way in a Series 14/100

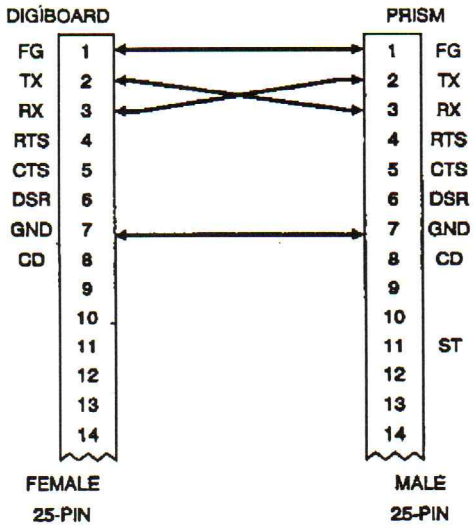
Adding a Series 14/100 board and software to your IBM PC or compatible will allow your PC to function as a REALITY system. The Series 14/100 product is based upon the 2.3 Operating System for the Series 6000 computers. The use of a serial board will allow the addition of two ports to the Series 14/100 -- i.e., another terminal and/or printer. If more ports are required, the Series 14/100 has the capability of supporting up to eight additional ports.

By installing an 8-way, you can simply add eight more ports. The two recommended compatible 8-ways on the market are the **StarGate PLUS 8** and the **Digiboard COM/8s.**

Generally, installation is easy. However, two minor problems have been recently reported to Central Support by customers installing 8-ways. These problems involve using the correct cable pin-out and, if installing a Digiboard 8-way, selecting the correct Digiboard COM/8 version.

The first problem is easily solved. Although the 8-way has its own short set of cables, you will need to pin an additional cable for each PRISM terminal you are connecting to the 8-way. These cables should have the following pin-out or configuration:

Cable for 8-way Communications Board to PRISM Terminal



The second recurring problem deals directly with selecting the correct Digiboard version. Digiboard manufactures both an "intelligent" (COM/8i) and an "unintelligent" (COM/8s) version. Since the "intelligent" model has its own software which overrides that of the Series 14/100, we recommend that you **select the COM/8s version.**

With this information, the installation of an 8-way on your Series 14/100 should be both simple and easy.

- Joan McWilliams

APPS

REALITY Integrated Office 2.3

The following is the list of terminals supported with REALITY Integrated Office 2.3:

DEC VT52
DEC VT100
IBM PC (via REALLINK)
McDonnell Douglas PRISM 2, 4, 5, 7, 8 and 9

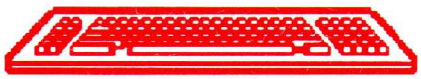
REALITY Integrated Office 2.3 does **not** support terminal independence.

- Janet Altman

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 1-46)	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
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)	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

Using REALLINK 2.0 with DOS 3.3

With the advent of DOS 3.3, a 32 Mb partition on your hard drive is no longer necessary. However, there does need to be a 32 Mb partition on your hard drive if you are going to install REALLINK 2.0 on it. The reason is that REALLINK 2.0 was released before DOS 3.3. Consequently, the REALLINK copy protection scheme did not take into account a partition size of greater than 32 Mb. The typical error that occurs is "No DOS Partition Found" and the installation procedure terminates.

If your hard drive is partitioned over 32 Mbs and you wish to install REALLINK 2.0 on it, you must first repartition your hard disk so that it has a 32 Mb partition. This problem is being addressed and will not occur on the future version of REALLINK.

- Bryan Glassick

Series 7000

Series 7000 Catalog Announced

Because we want to provide continued support to users of the Series 7000 product, McDonnell Douglas Field Service Company has assumed full responsibility for the limited sale of equipment and will continue maintenance for hardware and software.

As stated to Series 7000 users in late 1988, McDonnell Douglas Field Service Company remains fully committed to continued user support on the Series 7000 product through year-end 1993.

In keeping with this commitment, we have created a Series 7000 hardware catalog which is available to users. Copies of this catalog were sent to users during April 1989. Included in the catalog is information about products that you have told us are important, such as the following:

* Current Product Offerings
* Current Hardware Purchase Price
* Current Maintenance Prices
* Communications and Software Support

For more information on specifics, please contact Account Manager Christy Gilbert at (714) 566-4465. Your feedback regarding this product will enable us to continue to provide you with quality support for your Series 7000.

- Pat Dwight

Put your IBM PCs to work

Did you know that your IBM PC can be used to emulate an Information Terminal on your Series 7000 and also for bi-directional transfer of files? The McDonnell Douglas Terminal Emulator (MTE) interface software allows the IBM PC to operate in four modes:

1. As a stand-alone IBM PC, with all the associated facilities and applications software.
2. As Series 7000 Information Terminal emulator, enabling the user to access the data base and extensive facilities of the Series 7000 system.
3. As a remote printer, the terminal emulator will receive and print remote print jobs.
4. As a terminal allowing the bi-directional transfer of files between the Series 7000 and the IBM PC.

The PC used as an Information Terminal may invoke any of the standard Series 7000 facilities other

than off-line utilities. Emulation mode facilities include:

* Standard software, compilers, on-line utilities, etc.
* Application packages such as Textpro.
* Communications packages such as 2780+, SNA etc.
* Data Entry.
* Background processing via TSK utilities.

The PC can be connected directly to the Series 7000 or remotely connected via modems. For additional information on the PC Terminal Emulator, please contact the Series 7000 group through our toll-free Central Dispatch number.

- Helen James

FREE Zip Code Tape

All of our Series 7000 users are required to key name and address records at one time or another. This can be time consuming if you have a lot of them. But here's a way to cut down on the number of strokes and gain even greater accuracy than keying the entire record.

The U. S. Post Office has a zip code tape which you can obtain **free of charge** (yes, I said FREE!) This tape can be loaded onto the Series 7000 system using a simple program that reads a record from tape and writes it into an indexed file.

This file would have the zip code as its key and would contain the name of the city and the state. The data entry format would then require the operator to key and verify the zip. A KeyBASIC program could extract the city and state and insert it into the record. Since the average city field is approximately 20 characters and another two for the state, if you keyed only 300 records per day you would save about 6600 keystrokes. Over a period of a month this is a substantial savings of time and effort. The following is a quick example of a format which utilizes this file. Please see Figure 1 below for an example of a simple KeyBASIC program.

ZIP CODE FORMAT

Columns	Prompts	Field Definitions
1-5	ZIP CODE	KEYBASIC EXIT 2
6-25	CITY	BYPASS FIELD WITH KEYBASIC EXIT 3
26-27	STATE	BYPASS FIELD WITH KEYBASIC EXIT 4

This is a very simple example. However, as you can see, it does not require extensive or complex coding to take advantage of using this free resource. Depending upon your needs, you have the option of just loading local or regional zip code data instead of the complete zip code file. You can obtain the zip code tape by contacting:

National Address Information Center
6060 Primacy Parkway—Suite 101
Memphis, TN 38188-0001

If you have any questions about this programming, please contact Ann Connelly through our toll-free Central Dispatch number (800) 678-3399.

- Ann Connelly

COMMS

Current COMMS Releases

The Product/Release matrix shown on page 10 details the current release of software for the various communications products.

Figure 1
KEYBASIC PROGRAM

```
00001 ON KENTRY() GOTO 100,200,300,400
00002 100 OPEN '1/1/ZIPFILE' FOR RANDOM IO ELSE KFERROR
      'CANNOT OPEN ZIPFILE;STOP
00003 200 READ REC FROM 1 , KEY KFLD(0) ELSE KFERROR
      'CANNOT FIND THAT ZIP'
00004 CITY = REC[1,20]
00005 STATE = REC[21,2]
00006 KRETURN
00007 300 KFLD(0) = CITY;KRETURN
00008 400 KFLD(0) = STATE;KRETURN
00009 END
```

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

If you plan to upgrade your McDonnell Douglas Computer 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 VAR 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	1.1,2.2	N/A	N/A	N/A
MCC (2.3) 3.1 (Rev 4)	N/A	2.3	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	1.2, 5.1, 1.3, 5.3	2.3	6.0
M3800 (2780) 2.1 (YA)	4.2	N/A	1.2, 5.1	N/A	N/A
M3800 (2780) 1.3 (A)	4.3	N/A	1.3, 5.3	N/A	N/A
M3800 (SNA) 2.1 (YA)	4.2	N/A	1.2, 5.1	N/A	N/A
M3800 (SNA) 5.3 (A)	4.3	2.3	1.3, 5.3	N/A	N/A
5750 COMMS	4.2	N/A	1.2, 5.1	N/A	N/A
TCL (5750) COMMS (REV2)	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 resides on the Sysgen tapes. If the software is not on the tape, it may be retrieved from a previous Sysgen tape.

TCL-COMMS software is run on the 5750 Communications Terminal, in lieu of the 5750 software described above.

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

- Richard Yeh

SNA: System Network Architecture (Part 1)

In this issue, Niki Jhaveri introduces a series on understanding "IBM's answer to networking" -- the Systems Network Architecture, more commonly known as SNA.

What Is a Network? (Background)

Computer users began accessing the machine resources from remote terminals over thirty-five years ago. Since then, computer networks have become more versatile, more powerful, and inevitably, more complex.

A **network**, in a physical sense, is a combination of interconnected equipment and programs. It is used for moving information between points where it may be generated, processed, stored and used. The interconnection may have any of several forms, principally computer channels, telephone lines, microwave links, satellite links and cables.

In a more abstract sense, the term refers to a user- application network: a configuration of data processing products, such as processors, controller and terminals, established and operated by users for data processing or information exchange. The transport services may be common carriers or telecommunication administrations.

Today's networks range all the way from personal computers to complicated interconnections in which tens of processing units are interconnected to one another and to thousands of terminals, often with various forms of special multiplexors and controllers in between.

As this evolution proceeded, so had attempts to replace **ad hoc** methods of network design with systematic ways of organizing, understanding, and teaching network details.

The basic function of a network is the provision of **access paths** by which an **end user** at one location can access another **end user** location. The pair of **end users** may be a terminal user and a remote application program (s)he is invoking, two application programs interacting with one another, one application program querying or updating remote file, and so forth. The meaning of **access path** is not limited to a physical connection. It provides the sequence of functions enabling the **end users** to communicate with one another in spite of errors, differences in speed, format, pattern of intermittency and characteristic differences unique to each **end user** individually.

There are many ways of characterizing networks, for example:

1) Applications (banking, time sharing, airline reservation, etc.)
2) Geography (in-plant, out-plant, local area, wide area)
3) Ownership (public, private)

However, none of these approaches reveal what the network is actually doing. A much better approach is to examine the total repertoire of functions the network must provide in making up an effective **access path** between two **end users**. By doing this in an orderly manner, one can characterize the important features of both common carrier networks (dial, leased, circuit switched, packet switched, etc.) and the network designs of computer manufacturers. Two such examples of the latter are the Systems Network Architecture (SNA) of IBM and the DECnet of Digital Equipment Corporation.

* * * * *

In Part 2 of this series, Niki discusses in detail IBM's SNA network design.

- Niki Jhaveri

FEEDBACK

Mr. Bill Welch
MDFSCO District Manager

"I commend you for your leadership in running a quality and customer-oriented organization. **Joe [McSweeney]** and **Sam [Craghead]** of your office came to my rescue yesterday and today, in time of crisis.

Since we have been a customer of your company for several years, I have past occasions in dealing with field service personnel. But I am most impressed by the "extra-mile" effort made by both Joe and Sam in this incident of need. Their team effort has minimized my staff's lost time and effort.

THANK YOU to all of you and please convey my gratitude to your staff...."

Edward S. Chow
Director of Finance
• **CITY OF HUNTINGTON PARK, CA**

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* These classes are available in Santa Ana and St. Louis by request. Several other classes are also available by request.

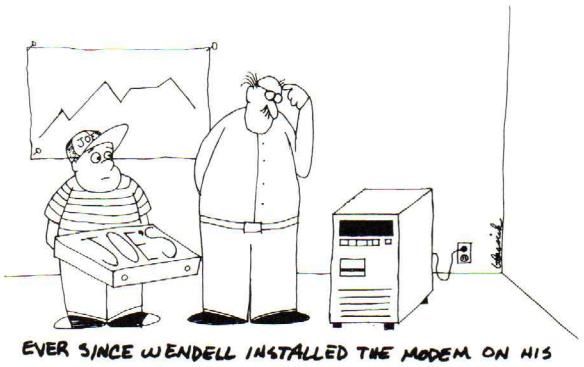
IN QUEUE

Next time look for our latest installment of PERFORMANCE (PART 3) and the second article in the SNA series. A new column highlighting Programming Tips begins. We will share with you some of the insights and comments from the responses to our Reader's survey.

Other topics will feature the latest information about operating system and application releases. Specific details of MDFSCO's Dealer/VAR relationship will also be presented.

We appreciate your feedback. Please tell us what you think.

GooFiEs



EVER SINCE WENDELL INSTALLED THE MODEM ON HIS SERIES 6000, X-LARGE PEPPERONI PIZZAS KEEP BEING MYSTERIOUSLY ORDERED FROM JOE'S PIZZERIA.

Central Support
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