/u/fortune* news

The Newsletter for Users of SCI/Fortune Computers January 1989/Volume 6 Number 1

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The Formula 5000 - Our First Impressions

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- **System Admin. - the /tmp and /u directories**
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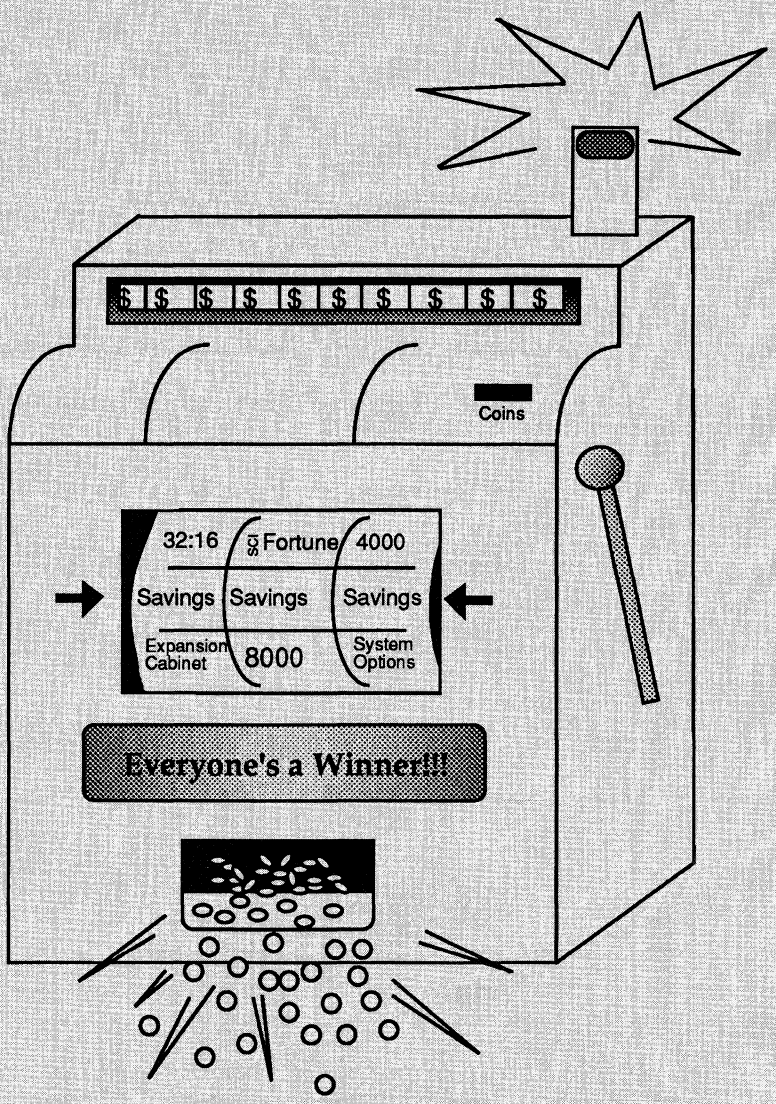

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SCI FORTUNE

/u/fortune *news*

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CONTENTS

From The Editors

A New Year Bodes Well - Read About Price Reductions and Nationwide Hardware Support

Well, it is the beginning of a new year - the sixth for us here at **/u/fortune** *news*. And while it was a tough year in some ways for owners of SCI/Fortune equipment, I think 1988 will be remembered as the year of SCI/Fortune's resurgence. During the last half of 1988, SCI/Fortune introduced significant new hardware (e.g., the SCI/Fortune 5000, an Intel 386 based computer) and new software (e.g., the Southwind Products as just one example). And just as important for our readers, SCI/Fortune has been providing us with evaluation machines and software. For example, in this issue we give some of our first impressions of the SCI/Fortune 5000 computer. We will continue to report on the 5000 as we gain experience in using it.

This past year was definitely a turning point for SCI/Fortune. And this year, 1989, is already turning out to contain some nice surprises from SCI/Fortune. They have just announced two pieces of news that we wanted to bring to your attention.

Incredible Price Reductions

Take a moment and look at the ad SCI/Fortune has placed in this issue (see page 2). This is their way of letting you know about an aggressive new pricing policy for most of their Motorola based products (which include 32:16's, SX's, Formula 4000 and 8000's, Tape Backups and Expansion Cabinets). You'll need to call your local SCI/Fortune dealer for the specific details (and if you don't know who your local dealer is, SCI/Fortune has put a number on their ad so you can call them - they will direct you to the nearest dealer). But call soon because the minimum reduction in price is 22 percent and some products have been reduced over 40 percent.

Thus, there has never been a better time to evaluate your current computing needs with an eye to enhancements and upgrades. We feel that SCI/Fortune has made a good decision in reducing these prices for basically two reasons. First, it does allow the average Fortune owner to upgrade their current systems without needless expense. Second, these new prices produce a favorable competitive pricing structure for the SCI/Fortune Motorola Based products when compared against SCI/Fortune's major competitors (including IBM AT compatible computers!). This should spur interest in SCI/Fortune products in the new customer.

Nationwide Hardware Maintenance

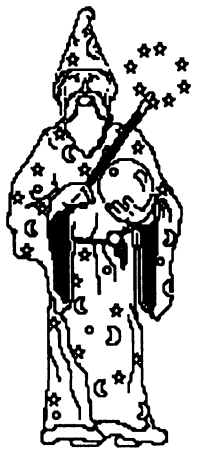
The second announcement that will help many current SCI/Fortune hardware owners is an agreement with Bunker Ramo Corporation. Bunker Ramo, an Olivetti Company, is a third party service organization whose main business, in conjunction with servicing SCI/Fortune hardware, is the maintenance of microcomputers running UNIX or MS-DOS. Bunker Ramo has been servicing the Fortune 32:16 product line since it was developed and will now be able to service the complete line of SCI/Fortune computers.

This arrangement with Bunker Ramo will be useful for some of our subscribers who live in far out-of-the-way places and are unable to get support from other sources.

Overall, 1989 is starting out to be a great year for owners and users of SCI/Fortune equipment. Stay tuned to **/u/fortune** *news* for the latest news with regard to your computer investment.

System Administration: Part 21

No Longer Requires a Degree in UNIX Wizardry



This series is a must for all owners and users of the Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the Fortune Computer, and is past president of the Houston UNIX User's Group. He contributes independently to ***/u/fortune news.***

by Dave Kloes

This month we are going to once again continue our discussion of the major directories of the For:Pro operating system. In particular, we will be talking about the "/tmp" and "/u" directories.

/tmp

The "/tmp" (stands for temporary) directory is normally empty and is used for storing files temporarily. For example, when you are doing a diskette backup using the "cp" command, the system stores its working files here while the backup is in progress. Some application programs may store files here as well - either during the initial loading of the software or while the software is being used. They may, for example, store a temporary file to indicate whether a printer is currently being used. The files are then removed by the application program when the files are no longer needed.

The "/tmp" directory should be checked periodically to clean up temporary "garbage" files that have not been normally removed. For example, if you are doing a backup and get a power failure, the backup command will not have had a chance to remove its temporary working files. These files usually begin with "part..." or "ls..." and can use up system space if they are not removed. The best way to check for this is to do the following procedure:

1. Insure a backup is not in progress.

2. Login as "root" and change directory to "/tmp":

```
# cd /tmp
```

3. Do an "ls" command and see if there are any files that begin with "part...." or "ls...".

4. If there are then enter the following command:

```
# rm -r part* ls*
```

/u

When new users are added to the system using the "newuser" command, the directories for each user are stored in the "/u" (stands for user) directory. Within each user subdirectory, system and application files are stored. For example, Fortune:Word and Multiplan (or other spreadsheet) files are stored in each user directory. For this reason, the "/u" directory should be backed up on a regular basis (daily would be best). In addition, other application programs such as the Informix database may store files in these directories depending on who you were logged in as when they were created.

If you are looking to free up disk space on your system, the directories under "/u" are usually a good place to look. If you haven't already found out, users are reluctant to remove their old Fortune:Word and Multiplan files unless they are forced to. You should periodically have your users go through the files in their directories and remove or archive documents that are no longer needed or seldom accessed. You will be amazed at how much extra disk space you will have when this is done. We heard about one study that was done where the System Administrator backed up and removed all user files from the system that had not been modified within a six month period. It freed up a substantial amount of disk space and over 80% of the users never even noticed they were removed!! Here is a command that you can use to check for files in the "/u" directory that have not been modified in any given period of time:

```
find  /u  -mtime  +x  -print | lpr
```

This command will "find" all of the files that have not been modified in the "/u" directory within the last x days and print

Figure 1. Oldstuff.sh

```
# Program: oldstuff.sh
# find, list, backup and remove files older than 6 months
# find files older than 6 months ————————
echo "
Searching for files older than 6 months ..."
list='find /u/davek/C -mtime +183 -print'
# exit if no files found ————————————
if test "$list" = ""
   then echo -n "
No files older than six months found.
Depress <RETURN> to continue: "
        read bunk
        exit
fi
# get files - skip directories ————————
for name in $list
do if test -f "$name"
      then backuplist="$backuplist $name"
   fi
done
# exit if no files found ————————————
if test "$backuplist" = ""
   then echo -n "
No files older than six months found.
Depress <RETURN> to continue: "
        read bunk
        exit
fi
# List files to printer ————————————
echo "
Listing files to the printer:
"
ls -al $backuplist | lpr -h -p 2
ext="no"
while test "$ext" = "no"
do echo -n "
Do you want to backup and remove the files? (y/n): "
   read ans
   case $ans in
     y|Y|Yes|YES) ext="yes";;
       n|N|No|NO) exit;;
               *) echo -n "
You must answer 'y' or 'n'.
Depress <RETURN> to continue: "
                  read bunk;;
   esac
done
# Backup 6 month old files ————————————
echo "
Backing up files that have been found:
"
cp -routVB /dev/fd02 790 $backuplist
# Remove files after backup ————————————
echo "
Removing files:
"
for name in $backuplist
do rm $name
   echo "$name removed."
done
# finished ————————————————————
echo -n "Program complete.
Depress <RETURN> to continue: "
read bunk
```

the list on the printer. For "x", you would enter the number of days you want to go back. For example:

```
find  /u  -mtime  +183  -print | lpr
```

would print a list of files that have not been modified within the last 6 months (on the other hand, if you use "-" instead of "+", you will find all of the files that HAVE been modified in the last six months). If you wanted to find and remove the files, you could use (however, be aware that this command will irrevocably delete files from you system, so be verrrry careful):

```
find  /u  -mtime  +183  -exec rm {} \;
```

The program, shown in Figure 1, can be used as is or as a guideline for finding files that are older than 6 months. We provide this program for those that feel comfortable with using or modifying it for their own particular situation. **IF YOU ARE NOT FAMILIAR WITH HOW TO RECOVER THE FILES OR WITH SHELL SCRIPTS, WE RECOMMEND THAT YOU ANSWER "N" TO THE REMOVE QUESTION.** In any case, the program will print a long listing of the files that it found. This can be used to question individual users about whether they need to remove the files or not. The program will:

1. Find all files in the /u directory that are older than six months.

2. Insure that what is found is a file and not a directory.

3. Print a long listing of the files that have been found on the system printer.

4. You are asked if you want to backup and remove the files. If you are not sure of how to recover the files or whether you want the files removed or not, then answer "N". If you answer "Y", the files will be backed up to diskette and then removed. Be sure you have enough formatted diskettes on hand before proceeding with the backup.

Once again, for those of you that are not inclined to create the "oldstuff.sh" program (and the "cleanup.sh" program you will see later on in Figure 2) on your system but want to use it, a copy has been provided to The Cambridge Consortium. You can contact them about details for obtaining this and other shell scripts we have provided during the System Administration series.

Have you ever had a "core dump" message appear on your screen while you have been working on the system? Usually when you receive this message, you are thrown out of the program you are working on or returned back to the login screen. Whenever this happens, a file called "core" is created in your current working directory. For those that are so inclined, this file can be analyzed to try to determine the cause of the error. In most cases, these are one time "gliches" that occur occasionally and can be ignored - but what about the "core" files that are created? As these files are accumulated on the system, they can use up valuable system space. The System Administrator should periodically search for these files and remove them - especially in the "/u" directory where they are most likely to accumulate. Here is a command you can use to find these files:

```
find  /  -name  core  -print
```

This command will start searching at the "/" (root) directory and find all of the files named "core" that are on the system. It will return the full pathname of where the files are located.

If you want to remove the files as they are found, use this command:

```
find / -name core -exec rm {} \;
```

These core files can be quite large so it would be worth your time to run this command to clear them out on a regular basis.

Application programs can sometimes leave temporary files in user directories that need to be cleaned out to conserve disk space. For example, Fortune:Word creates temporary files in user directories that begin with ".W" and ".w". Files like these are created when you do a print command in Fortune:Word. If the system has a power failure while this command is in progress, the program never has a chance to remove the temporary files. Therefore, over the course of a couple of years, a fair amount of disk space is wasted unless they are cleaned up. By cleaning up the files, your backup time will also be reduced.

One way of finding these files would be to login as "root" and change directory to each of the user directories. By doing the following "ls" command in each user directory, you will see if these files are present:

```
ls .W* .w*
```

You would be amazed at how many of these files we have found on some systems - especially if they are prone to frequent power failures. If any ".W" or ".w" files are found, they can be removed by entering:

```
rm .W* .w*
```

Be sure that all users are logged off the system when you do this. If they are currently using Fortune:Word and printing documents, you would be removing valid temporary files. For those of you interested in saving time, the shell program shown in Figure 2 can be used to find and remove the "core", ".W", and ".w" files for you:

There is one last issue we need to discuss regarding disk space and the "/u" directory. When someone leaves your company, there is always the issue of what to do with their user directory and the files that are stored there. Unfortunately, if you are like our clients, the user directory and all of its files are usually left on the system. While it may take someone some time to sift through the files in the directory, it is worth the effort for the disk space that can be saved. Also, remember that if the files are not needed then you are also wasting backup time by not removing them. Here are some suggestions and points you should consider in dealing with this situation:

1. User accounts are deleted using S2 (System Management), #12 (Delete existing account) from the Global Menu. This function DOES NOT, however, remove the user directory and the files that are stored in it. If you are not interested in saving any of the files in the directory, it can be removed using S1 (System Utilities), #22 (Delete A Directory) using the "all" option - after the account has been deleted. The directory can also be removed directly from For:Pro by entering:

```
rm -r /u/xxx
```
(where xxx is the account name)

2. Files in the directory that are no longer needed can be removed by using the Fortune:Word and Multiplan application programs. Use these programs to list, view, and archive or selectively remove the files. The files may also be moved to another user's directory.

3. You can also find out what files are in the user's directory by looking at them from For:Pro:

```
cd /u/xxx
```
(where xxx is the user account name)

```
ls
```
to list the files

```
ls | more
```
to list the files a screen at a time

```
ls | lpr
```
to list the files on the printer

```
ls -al | lpr
```
long list - to also look at other information such as the date/

Figure 2. Cleanup.sh

```
# Program to remove "core", ".W" and ".w" files
echo -n "
All users should be logged off of the system.
The following users are logged in:
`who`

Be sure you are logged in as 'root' or 'manager'.

Depress <RETURN> to continue or <CANCEL/DEL> to exit: "
read bunk
if test "$USER" != "root" -a "$USER" != "manager"
   then echo -n "
You must be logged in as 'root' or 'manager'.
Depress <RETURN> to continue: "
        read bunk
        exit
fi
# Find and remove core files ----------
echo "
Searching for and removing 'core' files ... "
find /u -name core -exec rm {} \;
# Find and remove .W and .w files ---------
echo "
Searching for and removing .W and .w files "
cd /u
for user in `ls`
do cd /u/$user
   echo "Working on /u/$user ..."
   rm .W* .w* > /dev/null
done
echo -n "
Program complete.
Depress <RETURN> to continue: "
read bunk
```

time they were last modified and how big they are.

Basically, any Fortune:Word file that is created, creates three files in the user directory. For example, if we create a Fortune:Word file called "letter", we would expect to find the following files in the user directory:

```
letter, letter.dc, letter.fr
```

If you are selectively removing Fortune:Word files from For:Pro, be sure to remove all three of the related files. The actual Fortune:Word document is the filename without any extension. In this case, "letter" is the document itself. You can view these files from For:Pro by changing directory (cd) to the user directory (/u/account name) and entering:

```
more filename
```

Multiplan files can be identified in the user directory by looking for a ".MP" extension to the filename. Other extensions may be present (such as ".SL") but these are not very common in most cases. Unfortunately, you cannot view these files from For:Pro since they are stored in binary format. To find out the actual contents of Multiplan files, you will have to load each one in Multiplan and look at it.

4. Some administrators opt to backup the directory and then remove it. In this case, if any of the files in the directory are needed, they can be recovered later. The command to backup the directory to diskette would be:

```
cp -routVB /dev/fd02 790 /u/xxx
```
(where xxx is the account name)

5. For those of you that are worried about angry employees who are about to be fired or quit, we strongly suggest that you immediately take steps to change the password for the account. You might also insure that other account passwords are changed and that there are no "back doors" for the user to gain access to the system. We also recommend that you backup the user's files BEFORE they get the bad news. There is always the possibility that the user will retaliate by removing his (and other) files from the system. You would be surprised how many other system files can be removed by an ordinary login account.

In closing, we should mention that "/u" is not a generic Unix directory. The only point you should remember if you are working on other Unix systems is that there is normally one directory on the system that is used to store login account subdirectories and their related files. This may be "/u", "/usr", "/user" or some other directory name.

In the next issue, we will be talking about the "/usr" directory. This is a system directory that holds many of the commands and files needed by the operating system in the day to day operation of the system.

Have a great day!❑

The BASIC Advisor

The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

We always look forward to collecting our annual list of IDOL/BAS support companies. It gives us the opportunity to talk with many friends and acquaintances, and allows us to meet new dealers as well. In addition, we frequently learn about current trends in the software business.

Last year, it seems, was anything but dull. Many of the companies we contacted had grown significantly, some had faltered and then re-grouped, and a few had disappeared altogether. Of those who expanded in 1988, some did so on their own while others took the merger route. This industry is often a headache but never a bore. In spite of the fact that some companies either raised or lowered their prices, the overall average cost of support for the end user has stayed about the same (roughly $63.00 per hour).

Although many of the companies listed have drifted away from SCI/Fortune, they all provide Fortune Systems software support. Some will help you upgrade your present system and/or assist you in porting your software to another computer. And I am sure that if you ask them nicely, some will even sell you a new computer. For those of you in the market for specialized programs or applications, I encourage you to call around. You may find that the perfect package is already written, tested and available for purchase.

So here, in the order received, is our Fourth Annual IDOL/BAS Support Company Listing. We have reported billing rates as we understood them at the time the call was taken: please contact the individual companies to verify their prices.

UNICONCEPTS CORPORATION, Englewood, CO. Contact John Reimschisel at (800) 541-2082. $60.00 per hour.

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UNI-KOMP, Houston, TX. Contact Dave Kloes or June Robinson at (713) 895-9900. $65.00 per hour.

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Product Update

SCI/Fortune 5000 Our First Impressions

I guess it's been about a month now that we've had Fortune's **Formula 5000** to play with. Although we can't even come close to mastering even some of the most basic things, we have been able to use it enough to become very intrigued.

I've always felt it's easier to test things when you're trying to do something practical, so when our hard disk began to fill up and our 32:16 became heavily taxed doing newsletter things, I decided to try to do some of my **Progress** consulting on the 5000.

If you've been reading our Databasics column, you'll remember that **Progress** is a 4GL applications development program. One of the nice things about **Progress** is that it runs on lots of different computers—ranging from XT's up to VAX's, of course stopping at the Fortune line in between. Most of our clients have been using 32:16 or SX computers for their **Progress** applications.

The **Formula 5000** can run **Progress** under Interactive 386/IX, which is basically System V Unix, or under **VPIX** (DOS). The Unix approach has the advantage of being multiuser, so that's where I decided I would do my programming. The first task was to move the data and programs over to the 5000. Probably the easiest way to do that would have been to copy the files onto a tape, and then copy from the tape to the 5000. That's right, the 150 meg tape drive in the 5000 can READ a tape created on the 60 meg drive in the 32:16 or Formula. (However, you can't WRITE a tape on the 5000 and read it on the 32:16.) Unfortunately we don't have a tape drive for our 32:16.

The next easiest route would have been to connect a wire between the 5000 and our 32:16 and Kermit it all over. We struck out on this front too, because we didn't have a cable with the right connectors to go into the 5000, except for the two standard serial ports. These ports are special, and seem to require hardware handshaking to work properly, so we couldn't tie in. The 5000 also has a HUB-6 serial controller which has 6 ports on it. These ports are similar in operation to the ports I am familiar with on the 32:16, but the cables are 8-conductor modular. No luck on that right now. (Editor's note: Don't feel too sorry for us, we have obtained a cable.) So I had a chance to experiment with some of the 5000's goodies.

I transferred the files from our 32:16 to our AT clone, which are always tied together. I put the files which were now DOS files onto a DOS floppy. I walked the DOS floppy over to the 5000 (a reliable but verrry slow form of data transfer) and popped it in the drive. Then I used the **VPIX** (DOS) copy command to copy the files onto the hard drive. The very same hard drive with the same file system as the one I was using under Unix. When I tried loading the files into **Progress**, I got error after error, which I discovered was caused by a ^M at the end of each line. The ^M is the primary difference between ASCII files on DOS vs. Unix. Just as I began to edit out the ^M's, I happened to read in the **VPIX** manual that there was a special flag available with the copy command which would automatically either add or subtract the ^M, depending on which way I wanted to copy the files. That simplified things a great deal—all I had to do was type copy /d a:*.* z:. If you're familiar with DOS that should look somewhat familiar.

The magical part was that after copying the files from the DOS floppy, I switched into Unix, and all of the files were there. No difficult conversions, no overly complex commands. In essence, the hard disk is transparent to the operating system, either DOS or Unix can read or write files.

Next I had to load up my database. This involves loading the data dictionary first, and then loading the data. This all happens with ASCII files. The problems I began to encounter here were involved with file names. I had been generous with my Unix file names and used almost all of the 14 characters allowed. I sometimes even used more than one period in the name. Both of these things are not compatible with DOS. DOS file names are limited to 8 characters, followed by a period, with a 3 character extension, e.g. text.doc. As the Unix files were copied in, the long names were truncated. For instance, printaccts.p became printacc.p and find.by.name.p became find.by. In order to fix this, I had to edit my menu programs to call the files by the correct new names. I could have reconverted the truncated DOS filenames back to the longer names allowed under Unix on the 5000, but it's probably better programming practice to adhere to the lowest common denominator, which in this case is the DOS restrictions. That way my application will be portable if and when I want to go back to DOS.

Once all of that was done, my application came right up, and I could begin programming. **Progress** has a built in screen editor that lets you write programs, but I like to use the vi editor which has some more power (some might even prefer the screen editor). One of the great things about program-

ming on the 32:16 is that with Fortune:Windows I can write my programs in one window, then switch to the **Progress** window to run them. If there are problems, I can switch back and forth in a flash. I didn't want to give up that capability to work on the 5000.

Fortune:Windows isn't available yet on the 5000, but there is a similar capacity on the 5000 console. It's called virtual terminals, and you can have up to eight of them. Each one is a separate login and can have separate processes. In theory, I could even have a DOS application like Pagemaker running in one window, with my Unix applications in another. (I say in theory because, in fact, we are still finding a few kinks here and there when we try to do this, although basically it does work.) Note that at the moment this is only available on the system console.

After setting up my virtual terminals I felt like I had everything I needed. The 5000 worked just I hoped—it's much, much faster that our 32:16 for compiling and running the application.

In fact I felt like I would need to put the application back on a 32:16 for final testing to be sure that the my client's speed on his 32:16 would be adequate.

We'll have more thoughts next time.❑

Josh Lobel

/u/help

This month we reprint several questions and answers that we received from SCI/Fortune's ***Technical Support Staff****. Each of these questions deals with the new SCI/Fortune 5000.*

Question: *How can I determine which applications are installed on my Fortune 5000 system (running Interactive 386/ix) without having to look through the entire file system?*

Answer: The simplest means of determining what applications are currently loaded on the system is through the **sysadm** menu. **Sysadm** contains an option called **softwaremgmt**, which subsequently has an option called **listpkg**. **Listpkg**, just like it sounds, lists all of the software packages currently loaded on the system. The following is the easiest way to initiate the **sysadm** menu:

At the system prompt type `sysadm <CR>`. Select option 5 *software management.* Then select option number *2 listpkg.* press **q** to quit when you are finished viewing the list.

Question: *Is it possible to verify which drivers are currently configured into the kernel of my Fortune 5000 running Interactive 386/ix?*

Answer: Yes, the **kconfig** utility lists all drivers during the process of removing a driver. You can use the **kconfig** utility to list, then quit without actually removing a driver. Here's how:

Login as **root**. At the system prompt type **kconfig** and press **RETURN**. Press **RETURN** selecting a default for the next two selections, *Configuration Directory?* and *System File Name?* Select Option *1) CONFIGURE KERNEL*, then select option *2 remove driver.* A list of current drivers will be displayed. Press **q** to quit and return to the prompt.

Question: *Is it possible to determine how the interrupt vectors are set on my SCI/Fortune 5000 system running the Interactive 386/ix operating system?*

Answer: Each configurable device has a directory off the **/etc/atconf/modules** directory whose name indicates the device. For example, **/etc/atconf/modules/hub** directory contains all configuration information pertaining to the HUB6 board. Similarly, the directory **/etc/atconf/modules/wt** contains configuration information pertaining to the Wangtek tape subsystem. The **intvec** value for a particular device is usually found in the **config** file for that device. Within the **config** file there is a line similar to *intvec = 5.* This value represents the interrupt vector value for the device.

The easiest way to view all the interrupt vector values at one time is to cd to the **/etc/atconf/modules** directory and then type `grep intvec */config`. This will give you a listing as follows:

```
asy/config:intvec = 3,4
clock/config:intvec = 0
fd/config:intvec = 6
fp/config:intvec = 13
hd/config:intvec = 14
hub/config:intvec = 5
icc/config:intvec = 10
kd/config:intvec = 1
lp/config:intvec = 7
mouse/config:intvec = 5
oad/config:intvec = 14
ohd/config:intvec = 14
rtc/config:intvec = 8
sun/config:intvec = 12
weitek/config:intvec = 6
wt/config:intvec = 9
```

It should be noted that some systems have different values than those show above, and that system configuration should only be done by a qualified system administrator. Refer to your **Interactive** documentation for more information.❑

Our Newest Diskette is available for the 32:16 and the Formula 4000 and 8000

Chess, Yahtzee and More....

Several months ago we announced the availability of a new software disk that we are distributing. This disk is called **Chess, Yahtzee and More...** and contains 6 computer games. The games included are **Chess**, **Yahtzee**, **Dots**, **Ogre** and **two solitaire card games**. *The games work on **both** the SCI/Fortune 32:16 and the Formula 4000 and 8000 computers and can provide hours of enjoyment.*

Computerized Chess - Why buy a separate piece of equipment when you can play a game of chess with your Fortune? The chess program plays a very good game and has many more options built in than the typical store bought variety. In fact, I played this program against a chess machine and beat the machine! The following list represents only *some* of the options:

both - causes the computer to play both sides of a chess game.
clock - allows the user to set tournament time controls such as 60 moves in 5 minutes etc.
depth - allows the user to change the search depth of the program.
easy - toggles easy mode (thinking on opponents time) on and off.
force - allows the user to enter moves for both sides.
get - retrieves a game from disk. This allows you to save an unfinished game and resume the play at a later time.
hint - causes the program to supply the user with its predicted move.
set - allows the user to set up a board position.
switch - causes the program to switch sides with the opponent.
undo - undoes the last move whether it was the computer's or the human's.
remove - undoes the last two moves.
white - causes the computer to take the white pieces with the move.

Yahtzee - for those who have never played, Yahtzee is a game played with five dice. Basically, the player rolls the dice three times in order to make some high scoring combinations. For example, getting three dice with the same number (like in poker, three of a kind). This particular game does NOT pit the computer against a foe, but rather allows up to four human players to play amongst themselves.

Ogre - is a game of tank warfare in the 21st century. You command a force of infantry, armor, and howitzers which are pitted against a giant cybernetic tank called the Ogre. Your mission is to destroy the Ogre, or at least render it immobile, before it reaches and destroys your command post.

The play is split up into several phases. First, in the initialization phase, you get to place your command post and your forces anywhere on the board. After this the Ogre appears on the board. In the third phase, you are allowed to move any infantry or tanks. Then, fourth, you are allowed to fire all your vehicles in range of the Ogre. Finally, the Ogre moves and fires at all units in its range. The play continues until either you destroy (or immobilize) the Ogre, or the Ogre destroys your command post.

The game originally comes with two levels of play. However, I found that I was humiliated every time I played so I "fixed" the program and provided three other levels of play. In these levels, I provide my side with a preponderance of force so that I have at least a fighting chance against the Ogre.

Dots - The Fourth game is called dots and is a computer implementation of the game that many of us played with paper and pencil. A grid of dots is drawn by the computer (which can vary from a 4 by 4 grid to a 10 by 10 grid). The player is pitted against the computer and the object is to connect any two dots by a straight line. When a box is created, the player who created the box puts his or her initial into it and this box is credited to that player. The object is to have the most boxes by the end of the game.

The computer plays a pretty tough game and you really have to work at it to win. There is also a mode where the computer plays against itself, which is interesting to watch.

Solitaire Card Games - If you like to play solitaire with cards, you'll like these computerized implementations. Each game is similar in the sense that the object of the game is to get all of the cards in each suit in order on the proper ace pile. However, the mechanics are different in each game. These games also allow a certain amount of cheating but they keep track of your "less than legal" moves and, in the words of the program, "this cheating will be counted against you in your next life!"❑

Unix Command Focus

The *tr* Command

In this **Unix Focus** column we take a look at the Unix command **tr**. The name, **tr**, is said to stand for **tr**anslate because this command is usually used to translate the occurrence of one character into another. As such, **tr** is a *filter* - a program which takes some input, such as a file, and gives you output which is basically the same but with some minor, or not so minor modifications. One Unix columnist described the idea of a filter by comparing it to a coffee filter, "You pour hot water in one side and hot flavored water comes out the other side."

In the rest of this short column, we want to accomplish four tasks. First, we will show you the syntax for using **tr** to translate all the occurrences of one character in a file to another. Second, we will show you how to use **tr** to delete characters from a file. Third, we will show you how to change all lower case to upper case (or vice versa). Finally, we will introduce a freely distributable program, called **trm**, that will accomplish these tasks if you don't have SCI/Fortune's Development Utilities on your system.

One to One Translations

One of **tr**'s main uses is to translate the occurrence of some character to another character. For example, suppose you received a file that contained a mailing list - and let's call this file **addr.dat**. Now, the individual that sent you this list just happened to output the list in the following format:

```
name|address|city|state|zip
```

As you can see, each element of the mailing list (e.g., name, city, zip), is separated by a vertical line otherwise known as the pipe symbol (|). Now suppose, that your database wants to see all the elements separated by colons (:). What we need to do, then, is to translate all the pipes (|) into colons (:). The following **tr** command would accomplish this:

```
tr "|" ":" < addr.dat > newaddr.dat
```

Simple Deletions

Our focus command, **tr**, can be used to delete characters from a file. Let's suppose that we just wanted to delete all the pipe symbols from our address file. The tr command to do this is:

```
tr -d "|" < addr.dat > newaddr.dat
```

The **-d** flag instructs **tr** to delete rather than translate. If you want to delete more than one character you can put several in the double quotes. For example, `tr -d "|:"` will delete all the pipes and colons in a file. Also, a range of symbols can be given. For example, to delete all lower case letters in a file, simply type `tr -d "a-z"`.

Changing Lower to Upper Case

Sometimes it is necessary to have a file be in all one case. Suppose we want to change all lower case letters to upper case - we can do that with **tr** by utilizing the range function illustrated above. The command to translate all lower case letters to upper case is as follows:

```
tr "a-z" "A-Z" < addr.dat > newaddr.dat
```

Some Odds 'N Ends

We have given you a very quick overview of some of the more usual uses of **tr**. We showed you the **-d** flag for deleting characters, but tr also has two other flags. The **-c** flag stands for complement and tells **tr** to perform its function on all characters **EXCEPT** those stated. Thus, if we wanted to delete everything EXCEPT upper case characters from a file, we would type: `tr -cd "A-Z"`.

Another flag is the **-s** flag which tells tr to "squeeze" multiple occurrences of some character into one occurrence. So, one use of this flag might be to prepare a manuscript for typesetting. You see, sometimes I type one space after a period and sometimes I type two spaces. Most typesetting programs want just one space. So, a **tr** command to squeeze multiple spaces into one space would be: `tr -s " " " "`.

trm - A tr-like program

If you have SCI/Fortune's Development Utilities, then you have **tr**. If you do not have it however, we can offer you a *tr-like* program that was donated to us by **Scott Chapman** of SCI/Fortune. We will include **trm** on a future software diskette, but if you need it now you can contact us and we will make arrangements to get you the program and the source.

trm behaves in many ways like **tr**, though it is not meant to duplicate **tr**'s every behavior. This program, like **tr**, will do simple translations like that explained when translating the pipe symbol to the colon. It will also delete characters or strings. It will not, however, work on ranges of characters so you could not change all lower case letters to upper case letters.

One thing that **trm** does that tr doesn't is to expand or compress strings. For example, if I wanted to change all occurrences of "isn't" into "is not", I could type:

trm "isn't" "is not"

Conclusion

Filters are one of the mainstay tools in the Unix user's tool box and **tr** is a very useful filter. We hope you have a better idea of what **tr** can do and how you might use it to solve some of your problems. In addition, if you do not have access to **tr**, we can offer you a tr-like program called **trm**.❑

Book Review

Tricks of the UNIX Masters

Tricks of the UNIX Masters by Russel G. Sage. Publisher: Howard W. Sams & Company, 1987. Price roughly $23.00.

This book, as its name suggests, is targeted at the more proficient Unix user and is basically a collection of instructive, informative and usually useful shell scripts. The book is well written and each shell script is *thoroughly* explained. The explanation is always broken down into the same sections which include: 1) Name, 2) Function (brief description, 3) Sample Call, 4) The shell script code, 5) Description (in-depth description of the program's behavior) - this section has two sub-headings which are *Why do we need this program* and *What does it do?*, 7) Explanation (of the shell script's inner workings).

There are two main benefits that this book offers. First, it gives the code to over 50 shell scripts - many of which are useful. We list the names of these shell scripts with a brief description of what they do below.

The second benefit involves the "tricks" that one can learn by studying these shell scripts. Often the best way to learn how to do something is to emulate what someone else has done but the problem with this technique, in the programming world, is that someone else's code is usually not well documented. The scripts presented in this book are well documented which aids the learning process. Even the last chapter of the book, called Miscellaneous Tricks, is filled with "a potpourri of UNIX tricks, including one or two line commands that do unexpectedly powerful things."

The following is a listing of the chapter headings and what programs are described in each chapter.

1. The UNIX Environment

Actually, this chapter doesn't present any programs but sets the stage for the rest of the book by giving the reader a general description of the Unix environment.

2. File Accessibility

tree - visual display of a file tree
thead - print the head of each file in a tree
tgrep - search for strings in a file system tree
paths - find the path to an executable, with special options
lc - list file information in columns
ll - list file information in long form
kind - list files of the same kind
m - easy access to more
mmm - nroff processing with manuscript macros
pall - print all files in a tree

3. File Maintenance

cptdir - copy a directory tree
can - move files to a trash can
dosflp - wildcard access for MS-DOS files
autobkp - automatic file backup
cpiobr - backup and restore
dsum - dual directory sum
log - view file backup logs

4. Programming Documentation Management

stripc - strip C file documentation header
stripf- strip C function documentation header
strips - strip shell script documentation header
ctags - C function tag cross reference

5. Time and Office Management

at - execute task at a specific time
b - background task subshell
greet - timely greeting from the terminal
lastlog - report last login time
timelog - logs sessions for accounting and statistics
today - print calendar with today highlighted
jargon - technical jargon generator
phone - telephone number database
office - office manager

6. User Awareness and Personal Security

activ - display terminal activity
info - display password info on a user
uchk - check processes of another user
watch - watch for specific logins
whox - who with expanded options
acme - display accounting information
inuse - disable terminal
lock - lock and unlock files

7. Devices and File Systems

c - fast clear screen
mntf - mount the floppy disk on the system tree
mntlook - look for all mountable file systems
umntsys - unmount all file systems except root
lrgf - create the largest file your system can handle

8. UNIX Communications

cuchk - check for a free cu line
talk - talk to another system
uust - uucp status and housekeeping
uutrans - transfer a file tree from UNIX to UNIX

9. Administration and Security

access - show all free access logins
chkset - check the system for setuid/setgid files
suw - watch the sulog for violators

10. Miscellaneous Tricks

As explained above, this chapter contains many shell scripts and useful pointers.

Appendices

A. Environmental Variables
B. Shell Interpretation Sequence
C. Shell Variable Special Characters
D. Shell Statement Special Characters
E. Shell Built-in Statements

Mark Palmerino

DataBasics - Our continuing series on Data Bases.

Choosing the Right Index - for performance sake...

In this month's DataBasics column, Deborah Harriman of PROGRESS Software Corporation discusses how good database design is only as good as choosing the right index.

Good database design, driven by the ever demanding need to build the most efficient systems possible, is always a popular topic, particularly within the MIS environment. Good database design however, is only as good as choosing the right **index**. By choosing the right index you can ensure maximum performance from your PROGRESS-based application.

The PROGRESS Application Development System consists of several major components: a tightly integrated English-like fourth-generation language and relational database manager; and a menu-driven application builder called PROGRESS FAST TRACK.

The PROGRESS Database

A PROGRESS database consists of a single O/S file which may contain up to 1023 logical files, any number of fields for a given file, limited by 2000 characters per record, and at least one index per file. When defined properly, indexes enable ***FAST*** retrieval of data from the database. This fast retrieval is made possible because the data no longer has to be searched sequentially but has been organized into an extended B-tree structure. This B-tree provides for essentially direct access to the desired data.

Static Indexes vs. Dynamic Indexes

Indexes can be defined for files in the database either implicitly, or by explicit creation. If not explicitly defined, the sort order of data is based arbitrarily on the value of the **RECID** for each record. The recid is assigned during record creation, and as long as only creates are done on the file, all records will be sorted in the order they are created. *Note the first explicitly defined index for a given file will cause the index based on the recid to be deleted.* Implicit or explicit, statically defined indexes provide for the fastest access of data. Explicitly defined indexes can be comprised of *one or more fields* of a given file. The construction of multiple field or "**complex**" indexes form the root of some of the more common database design problems.

Indexes can also be defined dynamically via use of the "by" clause available on the PROGRESS "**for each**" statement. The key difference between static and dynamic indexes is that only static indexes make use of a presorted index structure, supporting the ability to bypass sequential search of data to satisfy selection criteria. The cost of defining a static index can best be measured through awareness of:

1) The overhead of creating new records or updating existing records.
2) The savings gained to perform subsequent access.

Each new record creation causes the addition of an entry in and the need to rebalance the index structure. This overhead is endured for each index defined for the file. Each update causes the need to rebalance the index, although this is reduced to a relatively small task.

The access time to subsequently located specific records in a file is significantly reduced as a result of the work done to keep data always sorted. The "work" done to access data is now limited to processing the selection criteria and determine which is the best index to use.

Index Selection

Which index to be used for a particular statement is deter-

Figure 1.

Index Number	1	2	3	4
Index Names	A	B	C	D
Fields	a	b	c	b
		c		c
		d		

Figure 2.

```
For each somefile
  where b = 5 and c begins "s*" and d = 10821.
Find first somefile
  where b = 5 and c begins "s*" and d = 10821.
```

mined at compile time based on several well defined rules. The resulting selection is totally independent of the distribution of data in the file. The PROGRESS "**for each**" and "**find**" statements are the tools by which records are read from the database. The dynamic index selection process entails a systematic identification of certain key clauses used on either the "**for each**" or "**find**" statement. The "**use-index**" phrase is a means of forcing the use of an existing index, but note this may not have been the best one to choose. If you have specific knowledge about the distribution of data in the file, however, the "**use-index**" phrase may be used to your advantage.

If the "**use-index**" phrase is absent, the "**where**" clause, if present, is analyzed, afterwhich the "**by**" clause is evaluated. The"**by**" clause will cause a resort of data selected as a result of choosing the best index based on the "**where**" clause.

There is this concept of "**index bracketing**" which is applied to how to best access data based on the selection index. Figure 1 presents 4 columns, hence index numbers 1, 2, 3, and 4. Each index contains one or more fields. When defining static indexes, one should keep in mind what sort of reports one is planning to generate, the volume of data (# of records) needed for the report, and how presorted data is going to help.

When trying to parse the "**where**" clause the index selection process entails determining if each leading component of the index is matched for equality before allowing the next component to be looked at. In the coding example in Figure 2, field 'b' is testing for an equality but 'c' is not. Once the first inequality is encountered, the "**index bracketing**" process is used to determine how to best access the remaining data. If two or more indexes exist exist with the same qualifying leading fields, the index to be used will be based on the *alphabetic order* of the index name. As a result of this rule, index #2 in Figure 1 will be selected and, in fact, index #4 will always be redundant.

Remember that the existence of extraneous indexes result in waste of the execution time it takes to **ADD** each record to the customer file in that all indexed entries will have to be updated and rebalanced. *Redundant or not, the more indexes you define, the more effect this will have on performance.* In a system where lots of records are created, and the records are large, the overhead of many indexes can have a tremendous impact.

If on the other hand, you have frequent need to produce several different views of a file, and each group is based on the indexes defined in Figure 1, there are two issues to emphasize. One is the need for unique data in the selection criteria, and the other is for having equality selections be contiguous, from the **FIRST** field on down, in the case of the complex index.

Indexes #1 and #3 both support the need for alternate sorting access of data over index #2. Index #1 supports, for example, the need for field 'a' to be unique. Index #3 supports the ability to specify an equality selection on field 'c' without requiring an equality on field 'b'.

To Build or Not to Build...

In summary, the prevailing rule for when to set up an index is to ask whether you need unique indexes or when you will have equalities to access data. In the latter case, always test your decision to create an index with the questions:

1) How big is my file?
2) How often do I need to produce a particular selection of records?
3) How many other indexes do I already think I MUST have?

If you file has 100 records, you probably don't care how you build it but if you're planning for 500 records to several thousands, defining the right index can have a tremendous impact on how long you can expect to wait for your output. To better estimate what performance cost you sill incur by adding that one new index you must first determine what average size of your indexes are and compute how many accesses through the index structure are needed to access each data record. This formula is presented in some detail in the *PROGRESS Programming Handbook.*

It's probably unnecessary to create that extra index if you determine that the frequency of its use is to be monthly, or that the process which uses it can be run nightly such that you don't care about the impact on CPU and I/O cycles.

Of course, if there are no other indexes defined, then who cares?

Admittedly, the issue of performance is one you visit once the demands placed on your database design exceed your original expectations. However, keeping in mind some facts about how indexes are used can help you be better prepared to add features to your system later.

Many of the points presented here are thoroughly addressed in the Advanced Progress Seminar presented by PROGRESS Software Corp. The issues of index selection and bracketing are reviewed in summary format in both the Version 4 *PROGRESS Reference Manual* (under the "**for each**" and the "**find**" statements), and the Version 4 *Programming Handbook.*❑

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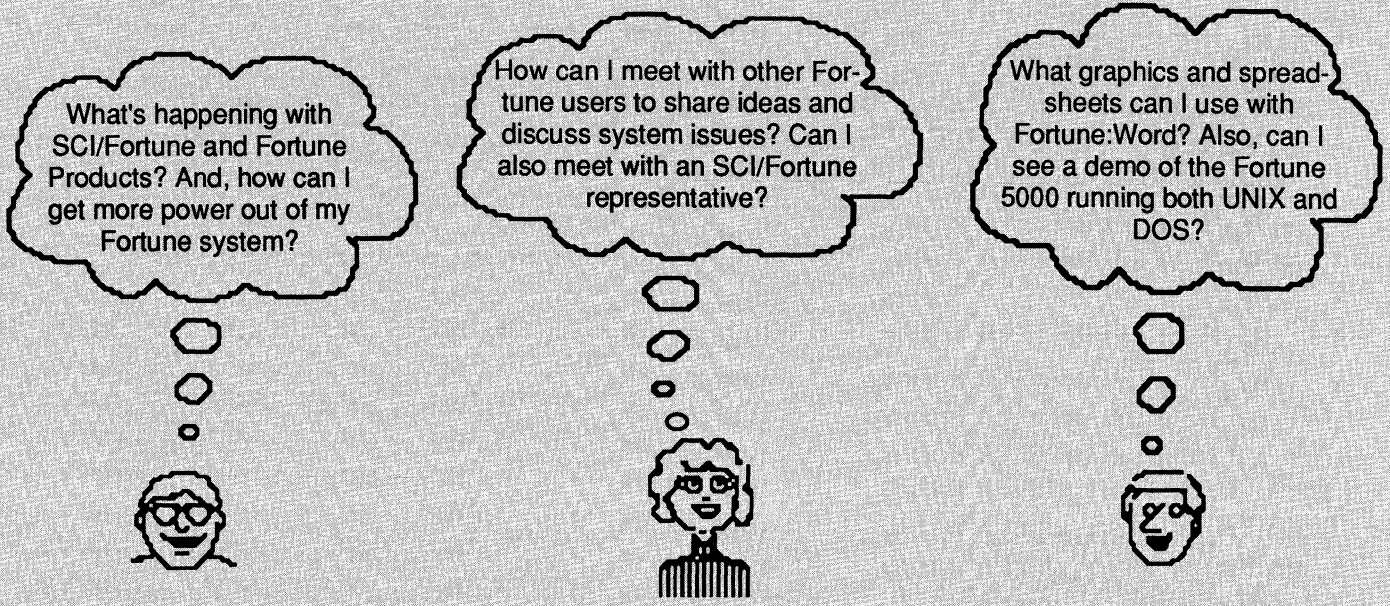
The Newsletter for Users of SCI/Fortune Computers February 1989 / Volume 6 Number 2

New Tools that make you more productive, from the simple to the sublime, from the 32:16 to the 5000

- Using the rolo program to print labels
- Using Fortune:Word to create text for Pagemaker
- Developing applications on the 5000
- SCI/Fortune wants your ideas
- Plus /u/help, The Basic Advisor, System Administration and more

When Fortune Users Ask Questions SCI/Fortune Provides Answers



If these kinds of questions have been swimming around in your head lately, then you should go to an open house sponsored by an SCI/Fortune dealer. Our past open houses have received rave reviews from dealers and users alike. *It's an event "not to be missed."*

SCI/Fortune is working with seven dealers who have expressed interest in sponsoring an open house during the next two months (March & April). Their names are listed below. Many topics will be covered in each open house, such as those raised in the above questions.

To reserve space at an open house listed below, please contact the SCI/Fortune dealer directly, no later than March 16th. Anyone from your company as well as guests are welcome to attend.

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CONTENTS

From The Editors

Reaching Out...

In this issue of **/u/fortune** *news*, we present information that covers many different topics. For example, you'll find an article on Fortune:Word and how to move Fortune:Word files to other programs. This is a function we use all the time because we use Fortune:Word to write many of the articles that appear in **/u/fortune** *news* and then we transfer the articles to **Pagemaker**.

We answer some questions in **/u/help** and in another article we show you how to use the electronic rolodex (**rolo**) program to print labels. We also continue our evaluation of the new Fortune 5000 and two different articles discuss its capabilities.

In one of those articles, we discuss how fast and efficient the 5000 is in the context of developing, compiling and running C-programs. In the second article, we describe our experiences of using **Pagemaker** on the 5000 to produce this issue. That's right, we are finally able to produce **/u/fortune** *news*, from start to finish, on SCI/Fortune hardware!

Naturally, we wouldn't want you to miss either of our regular columns. In **The Basic Advisor**, Ray Wannall answers some questions about getting non-Fortune terminals to work with IDOL. Dave Kloes continues his discussion of **System Administration** by looking at the /usr directory.

SCI/Fortune Wants To Talk To You

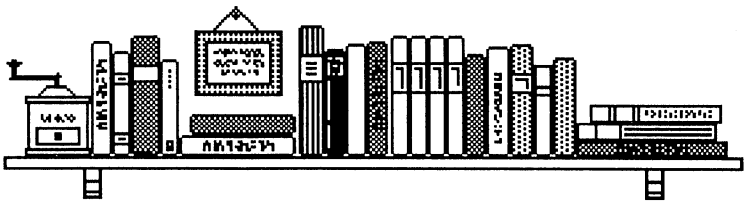
This issue, however, contains some special requests from SCI/Fortune. As you know, SCI/Fortune has been making some very noteworthy strides of late to bolster its contact with Fortune computer owners and users. To this end, they have given us evaluation software and hardware to use and write about. Recent articles about **Tactician**, **Ezgraf** and the new Fortune 5000 are a result of this cooperation between SCI/Fortune and **/u/fortune** *news*.

It is clear also that SCI/Fortune is serious about beginning a two-way dialogue with the users of its software and hardware. The ad (on Page 2) as well as the User Survey (on Page 17) attest to this fact. Don't miss the ad because SCI/Fortune and some of its dealers are teaming up to offer you close-up and hands-on demonstrations of SCI/Fortune's new software and hardware. We were able to participate in one of the first of these open houses last November and we heartily encourage any Fortune user or owner to attend one, if you have the chance.

Also, don't miss the Survey that SCI/Fortune has included in this issue on Page 17. We have often heard, in the past, that Fortune never listened to the end user. Well, things are obviously changing because they are actively pursuing *YOUR* comments. We hope you will take the time to fill out the Survey and mail it back to SCI/Fortune. This is your chance to let SCI/Fortune know what you like, don't like and, most importantly, what you would like to see in the future.

They are ready to listen, now its up to you to do the talking.

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

As usual, we have a couple of people who missed the deadline for our annual listing of IDOL/BAS Support Companies. Here they are.

COMPUTER SERVICES OF ATLANTA, Norcross, GA. Contact Dwayne Osborne, Jr. at (404) 447-4107. $60.00 per hour billed in 6 minute blocks, 15 minute minimum. Quarterly contract rates available.

OVERALL SYSTEMS AND SUPPORT, INC., Austin, TX. Contact Marcia Hyink at (512) 263-3653. $40.00 per hour plus expenses.

The Editor's of /u/**fortune** *news* would also like to apologize for a printing error in one of the entries in the last issue. The phone number for **DENNICIN MANAGEMENT SERVICES, INC.**, of Chelmsford, MA should read **(508) 251-3063**.

Question: *I have a 32:16 in my office and a small personal computer at home. Recently I established a modem connection between the two using kermit and have, after some effort, managed to log into the Fortune. I can get to the global menu just fine, but when I enter IDOL, the screen characters become garbled. Furthermore, none of my function keys work in IDOL, whereas they do for other non-BASIC global selections. I have the 6.5.12 upgrade to BASIC. Is this my problem?*

Answer: For:Pro and Business BASIC, which is the language of Thoroughbred OS, have always had a difficult time coexisting on the same disk. Each wants to usurp total control of all systems tasks. It was the original Fortune Systems Corporation that brought them together in a semblance of harmony: no small feat according to Concept Omega technicians who came over from SMC. To this day, both the For:Pro and the BASIC must be placated whenever alien (i.e., non-Fortune) terminals are used with your 32:16.

It is a good thing you have the 6.5.12 upgrade. Earlier releases do not allow you to configure your terminal within the BASIC. In order to set up your terminal in BASIC, you must run the *NPSD utility, which is selection number 13 on the Thoroughbred BASIC Utilities menu. We discussed defining mnemonics with this utility in our December, 1988, article (/u/**fortune** *news*, Volume 5, Number 12).

If you can, try to get to the utilities menu within the confines of your garbled screen. You may not be able to see what is happening, but if you log in as normal and enter UTL at the business accounting menu, you may get lucky and wind up at the utilities menu. If you do, enter 13 'CR' (Carriage Return), and from that point on the screen should be clear. If you cannot get into the program in this manner, you will have to alter the ipl file for your terminal, changing the program to run in the last line (IPL) from CSYST0 to *NPSD. This will cause you to go directly into the terminal configurator from the global menu.

In any event, once you are into *NPSD, you are asked to "ENTER A CARRIAGE RETURN: ". Isn't that a brilliant way to start a program? Press 'CR' to get to the Terminal Configurator screen with its three options:

1. MODIFY TERMINAL TABLES
2. MODIFY TERMINAL/MODEL CODE CONFIGURATION
3. LOAD TABLE INTO TERMINAL

2. SELECT OPTION (1,2, OR 3):

In this program, all questions asked are numbered. (I assume question number one was "ENTER A CARRIAGE RETURN".) In order to see if your modem terminal is already defined, enter 1 'CR' to examine the terminal tables. Here is a list of the predefined terminals provided with 6.5.12 BASIC on the Fortune:

ADM-3A	LSI MODEL ADM-3A
PROGTERM	BURROUGHS/CONV.PT
ALTOS-II	ALTOS-II TERMINAL
REXON	REXON MODEL 301
ATT-5425	AT&T 5425 DISPLAY
RX 303	REXON 303
B4 7250	BASIC/FOUR 7250
S4	SAFARI S4
CALLAN	UNISTAR 200 MONITOR

SEIKO	SEIKO 8600 TERM
CDC722	CDC 722 (ADV)
SST	SST 307H
CDX-268	MOTOROLA CDX-268
SVT-1210	SPERRY 1210
CIT-80	C ITOH MODEL 80
SVT-1220	SPERRY 1220
COMM	COMMUNICATIONS PORT
T7000	WICAT T7000
DDE 400	DDE 400
TVA950	TELEVIDEO ALTERNATE
DM 10	DATAMEDIA COLOR 10
TVI912	TELEVIDEO 912
FASTRK30	4-PHASE FASTRAK 30
TVI920	TELEVIDEO 920
FORTUNE	FORTUNE
TVI950	TELEVIDEO 950
HZ1510	HAZELTINE 1510
VT100	DEC VT100
IBM3101	IBM 3101
VT52	DEC VT52
KIMKT7	KIMTON KT-7
WICAT	WICAT MONITOR
LISA	APPLE LISA
WY-50	WYSE-50 DISPLAY
MERC	MERCATOR
ZDS	HEATH TERMINAL
MICOTERM	MICRO TERM
ZEN8001	ZENTEC MODEL 8001
PIXEL	PIXEL CONSOLE TERM
ZEPHYR	ZENTEC ZEPHYR

Chances are your terminal is already present on the list. If it is not, you may either define a new entry yourself or select a model code which is close to the one you are using. More than likely, one of these will work for you. The model codes are represented by the two- to eight-character designation to the left of the terminal model description (e.g., the model code for the TELEVIDEO 912 terminal is TVI912). Once you have selected a model code for your terminal, enter END 'CR' at the prompt, "3. C-CREATE M-MODIFY D-DELETE L-LIST TABLE ENTER C,M,D, OR L:". This will take you back to the original option menu with the three selections.

Select number 3, "LOAD TABLE INTO TERMINAL", and press 'CR'. The program will ask you to "25. ENTER MODEL CODE TO LOAD (CR=xxxxxxxx)". If your terminal has not been previously defined, the (CR=xxxxxxxx) will not be displayed. At this prompt, enter the terminal code which you selected from the terminal table list exactly as it was displayed and press 'CR'. You will return to the original option menu, where you may enter END 'CR' to exit to the Thoroughbred BASIC Utilities menu. From now on your terminal should work properly in BASIC.

Question: *I think I have found another bug in the Thoroughbred BASIC. If you are using several FOR-NEXT loops in a program, and the loops are not completed, you can get an error 33 (memory overload). It seems the remaining counts are not cleared from the memory after you exit the loop.*

Answer: I attempted to duplicate your problem with the following program which I typed in at the READY prompt in BASIC:

```
00010 SETERR 08000
00020 FOR I=1 TO 1000
00030 EXITTO 00050
00040 NEXT I
00050 LET X=X+1
00060 PRINT X,
00070 GOTO 00020

08000 PRINT 'LF',ERR
08010 ESCAPE
```

I set the program in motion and left for lunch. When I returned an hour later, it was still cranking out values for X with no problems. I then reset the value of X to zero (with the BEGIN command) and changed line 30 to read:

```
00030 GOTO 00050
```

I restarted the program, and X was increased to 643 before I bombed out with an error 30. Were you using GOTO rather than EXITTO to leave the loop? I suspect you were, because obviously EXITTO clears the loop whereas GOTO does not. You may have been deceived by the use of a FOR-NEXT loop within a subroutine. The following program generates an error 27 at line 7030:

```
00010 SETERR 08000
00020 GOSUB 07000
00030 LET X=X+1
00040 PRINT X,
00050 GOTO 00020

07000 FOR I=1 TO 1000
07010 GOTO 7030
07020 NEXT I
07030 RETURN

08000 PRINT 'LF',ERR
08010 ESCAPE
```

This kind of "feature" in BASIC tends to give us a false sense of security when using FOR-NEXT loops in the main body of a program. When you first exit with GOTO, no errors are encountered. But after several loops, the computer gives up and dies. In fact, if you do not have an error handling routine in the program, you may find that the only way you can get out of the error is with Control-B.❑

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System Administration: Part 22

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides Unix seminars, software for the SCI/Fortune computer, and is past president of the Houston Unix User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

In this issue, we will start our discussion of the last two items that branch off of the "root" directory. In particular, we will be talking about the "**/unix**" file and the "**/usr**" directory.

If we were to rank in order of importance, each of the files that are on the system, the "**/unix**" file would be at the top of the list. The "*kernel*" is the heart of a Unix system. It resides in memory and in effect interprets what we enter at the shell prompt into a language that the machine understands. The "**/unix**" file is the "*kernel*". If it were removed from your system, the "kernel" could not be loaded into memory and therefore your system would not operate. There are ways of restoring this file if it is corrupted or removed through the "back door" to the system, which we have not discussed yet. Needless to say - you should leave this file alone.

In fact, it is not a bad idea to make an extra copy of it (you can name it whatever you like) so you can start up your system easily if something happens to the original file. One thing you should be aware of is how large this file is. Remember that this file stays resident in main memory all of the time - so the larger the file, the less memory you have available to do your actual work. The "kernel" has in fact grown significantly in each of the last two operating system releases (2.0 and 2.1). This means that you would normally have to increase the amount of memory you have on your system if you wanted the system to run as fast with the new operating system version.

Remember one of the commands we talked about in an earlier article was the "**uconf**" command. When this command is run, one of the things it tells you is the status of your memory. Here is an example of the output for the machine we are writing this article on:

Total primary storage = 768K; programs are using 167K of 484K available

First of all, this tells us that this particular system has 768K (768,000 characters) of total memory. We are currently using 167K of the 484K that is available. It does not take a degree in math to see that if we started with 768K and there is 484K available, that the "kernel", et al are using 362K. This is memory that is not available for our everyday work. In many cases, even though the size of the "kernel" increases and uses up more of our memory, it does not always follow that the system will run slowly. The exception would be when the changes that caused the "kernel" to grow result in more efficient processing of our data. In most computer systems today, memory is becoming less and less of an issue as the cost of additional memory is generally going down. We just configured a 386 system, for example, that has 9 megabytes of memory (9,000,000 characters). In a system with this much memory, the size of the "kernel" is less of an issue.

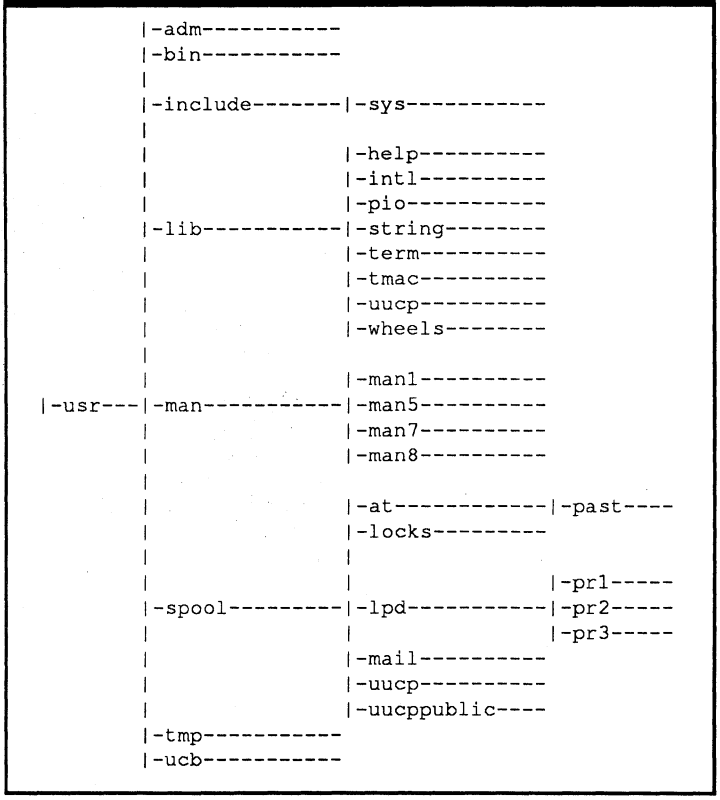
The last and one of the most important directories in For:Pro that we need to discuss is the "**/usr**" directory. Let's take a look at Figure 1 for the "tree" for this directory.

As you can see, the major directories under "/usr" are "adm", "bin", "include", "lib", "man", "spool", "tmp", and "ucb". Depending on what software you have installed on your system, you may have all or some of these directories.

/usr/adm

The "/usr/adm" ("adm" stands for administration) in Unix is used for things such as error message files and login accounting type information. In the current revision level of For:Pro, the directory is empty.

Figure 1.



/usr/bin

"**bin**" is short for "binaries" which normally refers to compiled programs. The "**/usr/bin**" directory contains commands that are used by all users. This is different than the "**/bin**" directory which contains commands that are normally used by the System Administrator. For example the print command "**lpr**" is found in "**/usr/bin**" because it is needed by all users on the system. Here are a few of the commands that can be found in this directory:

find - this command can be used to "find" things such as:

+ files that have/have not been accessed in a period of time
+ files that belong to a particular group
+ the name of a file, given the i-number
+ files that have a certain number of links
+ files that have/have not been modified in a period of days
+ where a file is located based on the name
+ files with a certain size
+ files of a certain type
+ files that belong to a certain user

For example:

```
# find / -user davek -print
```

This would show us all of the files that are owned by user "davek".

This command can also execute For:Pro commands and take action on files that are found that meet any of the above conditions. For example, "find" all of the files that have not been modified in the last year and remove them.

lpdun - this command is used to restart a suspended print job or notify the spooler of a change in the printer's condition. It is also used to set up default paper sizes and other default attributes of the printer.

lpmv - this command moves a print job to a new position in the print queue.

lpq - this command lists the line printer queues and state. The options available are "-s", "-q", and "-a".

lprm - this command allows users to remove jobs from the print queue.

tee - this command allows you to send output to two places at the same time. For example:

```
# cat file1 | tee file2
```

This would send the output of "file1" to your terminal screen and to "file2" at the same time.

tty - this command will tell you what terminal "tty" number you are. For example:

```
# tty
/dev/tty05
```

what - this command will tell you what version a particular file or command is. For example:

```
# what /unix
/unix
      FOR:PRO Operating System 2.1
```

Obviously, depending on the software you have installed on your system, there are many more commands in the "**/usr/bin**" directory. In a future article, we will elaborate on the "**lpr**" commands listed above to show you how you can maintain your print queue.

/usr/include

For those that are "C" programmers, this directory contains routines that can be "included" in your "C" programs. Even if you are not a programmer, you can find some interesting things in some of these files. For example, Figure 2 is what the tail end of the "**/usr/include/videotex.h**" file looks like.

While this may look like Greek at first glance, it really provides us with some useful information. The table is actually a conversion table for keyboard characters. The column heading labeled "chr" is the actual keyboard character. The other headings show the "hexidecimal", "octal", and "decimal" equivalent of the keyboard characters. We have left off

the last column of the table due to space limitations.

For example, if we look under the "chr" column for "^L", we will see that the "hex", "octal" and "decimal" equivalents for this character are "0C", "014", and "12", respectively. The "^L" character is in fact the "clear screen" character in FOR:PRO. If we were to enter the following command at the Unix prompt, our screen would clear:

```
# echo ^L
```

Before the table we see the lines:

```
*      { 0x1C, 'H', 0x60 }  start highlighting
*      { 0x1C, 'I', 0x60 }  stop  highlighting
```

These are the character sequences for starting and stopping highlighting. Highlighting is where the terminal makes the screen "bold" or stand out. To start highlighting, the sequence is a "hex" 1C. To convert this to a keyboard character we recognize, look at the table under the "hex" column and find "1C" - you will see that this is a control backslash (^\). The "H" in quotes means to use the actual "H" keyboard character. If we had the rest of the chart displayed, you would see that the keyboard equivalent character for a "hex" 60 is a "`". Therefore, the keyboard sequences for a Fortune terminal to start and stop highlighting would be:

start highlighting - ^\H`
stop highlighting - ^\I`

In fact, most of the special effect commands begin with the control backslash and use the letter "H" to start the effect and "I" to end the effect. That leaves us with just the last character to determine what the effect will be. The following sequences:

```
*{ 0x1C, 'H', 0x50 }  start underlining
*{ 0x1C, 'I', 0x50 }  stop  underlining
```

would be interpreted as:

start underlining - ^\HP
stop underlining - ^\IP

If you want to test these sequences from the Unix prompt, there are a couple of other things you need to know. First of all, any control character should be preceded by a control-V (^V). This is to a control sequence what the backslash is to other special characters. Whenever we are entering a control sequence at the shell prompt, we should precede it with the ^V to let Unix know that a control character is to follow. Note that when you enter the ^V, you will only see the character ^ on your screen - don't let this confuse you. The ^ will be replaced by the control character that follows when it is entered.

Secondly, special characters such as the "`" used in the highlighting sequence should be preceded by the backslash so the character is not misinterpreted by the shell. With these two pieces of information, here are the commands that would start and stop highlighting at the prompt:

```
# echo ^V^\H\`
# ls
file1   file2
# echo ^V^\I\`
#
```

Notice that in the first "echo" we preceded the ^\ with a ^V and we preceded the ` with a backslash. After the sequence is entered, our text is highlighted. We put in the "ls" command so that you could see what the effect has on your terminal screen. In the second "echo", we again preceded the control character with a ^V and the special character with a backslash. Once we entered the second "echo", our screen returned to normal intensity. Whenever we start an effect, the effect will remain on until we enter the "turnoff" sequence. You will lose your effect if you execute software programs such as the menu system and Fortune:Word. Now let's try the underlining sequence:

```
# echo ^V^\HP
# ls
```

Figure 2.

```
 * Examples:
 *      { 0x1C, 'H', 0x60 }  start highlighting
 *      { 0x1C, 'I', 0x60 }  stop  highlighting
 *      { 0x1C, 'H', 0x50 }  start underlining
 *      { 0x1C, 'I', 0x50 }  stop  underlining
 */

/*
+--------------+-----------------+-----------------+
| Hx Oct Ch Dec | Hx Oct Ch Dec adr | Hx Oct Ch Dec adr |
+--------------+-----------------+-----------------+
|  0   0 ^@   0 | 20 040     32   0 | 40 100  @  64  32 |
|  1   1 ^A   1 | 21 041  !  33   1 | 41 101  A  65  33 |
|  2   2 ^B   2 | 22 042  "  34   2 | 42 102  B  66  34 |
|  3   3 ^C   3 | 23 043  #  35   3 | 43 103  C  67  35 |
|  4   4 ^D   4 | 24 044  $  36   4 | 44 104  D  68  36 |
|  5   5 ^E   5 | 25 045  %  37   5 | 45 105  E  69  37 |
|  6   6 ^F   6 | 26 046  &  38   6 | 46 106  F  70  38 |
|  7   7 ^G   7 | 27 047  '  39   7 | 47 107  G  71  39 |
|  8 010 ^H   8 | 28 050  (  40   8 | 48 110  H  72  40 |
|  9 011 ^I   9 | 29 051  )  41   9 | 49 111  I  73  41 |
| 0A 012 ^J  10 | 2A 052  *  42  10 | 4A 112  J  74  42 |
| 0B 013 ^K  11 | 2B 053  +  43  11 | 4B 113  K  75  43 |
| 0C 014 ^L  12 | 2C 054  ,  44  12 | 4C 114  L  76  44 |
| 0D 015 ^M  13 | 2D 055  -  45  13 | 4D 115  M  77  45 |
| 0E 016 ^N  14 | 2E 056  .  46  14 | 4E 116  N  78  46 |
| 0F 017 ^O  15 | 2F 057  /  47  15 | 4F 117  O  79  47 |
| 10 020 ^P  16 | 30 060  0  48  16 | 50 120  P  80  48 |
| 11 021 ^Q  17 | 31 061  1  49  17 | 51 121  Q  81  49 |
| 12 022 ^R  18 | 32 062  2  50  18 | 52 122  R  82  50 |
| 13 023 ^S  19 | 33 063  3  51  19 | 53 123  S  83  51 |
| 14 024 ^T  20 | 34 064  4  52  20 | 54 124  T  84  52 |
| 15 025 ^U  21 | 35 065  5  53  21 | 55 125  U  85  53 |
| 16 026 ^V  22 | 36 066  6  54  22 | 56 126  V  86  54 |
| 17 027 ^W  23 | 37 067  7  55  23 | 57 127  W  87  55 |
| 18 030 ^X  24 | 38 070  8  56  24 | 58 130  X  88  56 |
| 19 031 ^Y  25 | 39 071  9  57  25 | 59 131  Y  89  57 |
| 1A 032 ^Z  26 | 3A 072  :  58  26 | 5A 132  Z  90  58 |
| 1B 033 ^[  27 | 3B 073  ;  59  27 | 5B 133  [  91  59 |
| 1C 034 ^\  28 | 3C 074  <  60  28 | 5C 134  \  92  60 |
| 1D 035 ^]  29 | 3D 075  =  61  29 | 5D 135  ]  93  61 |
| 1E 036 ^^  30 | 3E 076  >  62  30 | 5E 136  ^  94  62 |
| 1F 037 ^_  31 | 3F 077  ?  63  31 | 5F 137  _  95  63 |
+--------------+-----------------+-----------------+
*/
```

file1 file2
echo ^V^\|P
#
In these "echo" commands, we preceded the ^\ with the ^V but since "P" is a normal character, we did not have to precede it with the backslash.

We can also use the commands in combination. For example, if we wanted to have both highlighting and underlining at the same time:

echo ^V^\H\'^V^\HP
 # ls
file1 file2
 # echo ^V^\|\'^V^\|P
#

Video effects can jazz up the shell programs that we write. Other effects such as reverse video and blinking can also be used.

The point here is not to be afraid to look at some of the files that are on your system. You would be surprised at the kinds of information that you can find.

In the next issue, we will continue our discussion of the "**/usr**" directory.

Printing Labels From Our Electronic Rolodex Program

This article is in response to many questions we have received over the course of time regarding the popular program **rolo** and the ability to print labels. The program does contain some primitive printing capabilities but it does not offer very much flexibility in terms of printing labels. In fact, as far as we know, the only way to get any type of printed output is to type `rolo -s` which produces an output which contains only the name, the work phone number and the home phone number.

Rolo, which is one of the programs that we offer on our **Unix Tools Diskette**, is very popular. However, its usefulness would be increased if there were some way to print labels from the rolo database. In this article, we will outline a simple shellscript that will allow you to print labels from a rolo database. In addition, with minor alterations you could use this shellscript to print out many different cuts of the data base including (1) rolodex cards, (2) company phone lists, (3) home phone lists, etc.

Our simple shellscript is presented in Figure 1 and will process a typical rolo data file (called **.rolodex.dat**) to produce labels that consist of 9 lines. We can write a shellscript like this because we know, or can find out, that the rolodex data file is simply ASCII text and it has a very rigid structure. Each entry in the rolodex data file consists of at least eight lines and each entry is separated by a blank line. Thus, we use this information to read through the file.

The basic way we attack this is to set up eight **read** statements (see lines 12 and 13). Then we continue reading until we hit a blank line. This is what lines 16 to 19 handle. Thus, at this point we have all the information that we need to print a label.

The first thing we do before we print the label is check the work address field (WADDR) to see if there is, in fact, a work address. If there isn't a work address, we skip this name. If there is a work address then we have to "parse" it. In the rolo database, the address field is one line with separate fields separated by semi-colons. For example, our address would be represented as follows: `225 Crescent Street;Waltham, MA 02154.`

The loop at lines 32 to 36 take care of splitting apart the separate fields in the work address. The trick here is to set the **IFS** variable (Internal Field Separator) to a semi-colon and a RETURN. That way we can process each of the fields separately in the **for** loop.

Finally, we must output some blank lines so that we will be brought to the top of the next label. The loop at lines 37 to 41 take care of this and rely on the fact that (1) we have kept a count of the number of lines we have already output on this label and (2) we know the maximum number of lines on a label (MAXLABEL). That's it!

Some closing points are in order. First, this is a shellscript and consequently will work rather slowly. It took 11 minutes to generate 46 labels on our 32:16 (but under 1.5 minutes on the 5000). Second, we have utilized only the work addresses to generate labels. Very simple modifications would be required to output the home address instead. Of course, now that you have the basic way of reading the rolodex data file, there is no reason why you couldn't modify it to simply list out names and phone numbers. Or, you could print out the information on physical rolodex cards.

You could even input your own field into each rolodex entry to code different types of names. For example, you could split out personal entries versus professional ones and then generate a mailing list just for your friends.❑

Mark Palmerino

Figure 1. Printing Labels From rolo

```
 1  :
 2  # read from standard rolodex file and print label
 3  MAXLABEL=9
 4  while :
 5  do
 6  # read standard rolo fields
 7          read NAME
 8          if [ "$NAME" = "" ]
 9          then            \
10                  exit
11          fi
12          read WPH; read HPH; read CMP; read WADDR;
13          read HADDR; read REMS; read DATE;
14          NXTLINE="junk"
15  # read user defined fields
16          while [ "$NXTLINE" != "" ]
17          do
18                  read NXTLINE
19          done
20  # output information in label format: use work addr
21          CNT=1    # at least 1 for the name
22          if [ "$WADDR" != "" ]
23          then
24                  echo $NAME
25                  if [ "$CMP" != "" ]
26                  then
27                          CNT=`expr $CNT + 1`
28                          echo $CMP
29                  fi
30                  IFS=';
31  '  # set IFS to semi-colon and RETURN to parse WADDR
32                  for aline in $WADDR
33                  do
34                          CNT=`expr $CNT + 1`
35                          echo $aline
36                  done
37                  while [ $CNT -lt $MAXLABEL ]
38                  do
39                          CNT=`expr $CNT + 1`
40                          echo
41                  done
42          fi
43          IFS='
44  '       # reset IFS to handle input
45  done
```

Fortune:Word To Pagemaker

As you may have read elsewhere in this issue, this edition of **/u/fortune news** has been produced on the **Formula 5000** using **PageMaker**. Although we have always used **Fortune:Word** to input the text for our stories, we have then ended up formatting them with Microsoft Word on our Mac. Since the idea of using the 5000 was to simplify our task, we decided to go right from **Fortune:Word** to **PageMaker**. This article discusses how we did that and provides some useful shortcuts.

Our goals were to write and format our articles in **Fortune:Word**, and then bring them directly into **PageMaker**. In order to do this, there were several things that we had to do. First we had to have a way to make a reasonable file available to **PageMaker**. Ideally this file would retain some of the formatting commands that we use in **Fortune:Word**. Finally, we would add the finishing touches in terms of special fonts, etc. in **PageMaker**.

PageMaker is a DOS program, and thus runs on the 5000 under the **VP/ix** program. One great advantage of using the **Fortune:Word/PageMaker** method is that our **Fortune:Word** Unix files are automatically available to DOS. The only requirement is that we adhere to DOS guidelines when naming our **Fortune:Word** files. For some reason, things seem to work better if we leave off any extensions after the period -- in other words, stick to names with 8 characters or less.

PageMaker can "place" text stories from many different word processors, but not from **Fortune:Word**. However it does accept plain ASCII text. If we were placing simple stories, it might work to convert **Fortune:Word** files to ASCII and import them. As we've discussed in the past, you can strip out most of the \B\'s etc. with the **WPstrip** program. If you have **Fortune:Word** 3.0, as we do, you can even just use the CMD SHIFT F14 key combination from within **Fortune:Word** to directly export your files to ASCII. If you place this file with **PageMaker**, you'll lose all hard returns, although tabs will be preserved, and indents will be converted to tabs. This simple conversion will probably not produce the desired result.

The reason that the returns are lost is that DOS programs, like **PageMaker** expect a ^M (that's a CTRL-M) at the end of each line. It turns out that the **VP/ix** DOS copy command supports two flags for adding or subtracting the ^M. Let's suppose we had a file called **fword** that we wanted to convert. All we do is enter **VP/ix** and type `copy /d fword dosfword`. The **/d** flag adds ^M's and the **/u** flag deletes them. Once we do that, we get hard returns at the end of **every** line, which isn't exactly what we want either.

There is an easy solution to these formatting problems. It's a program we've written called **fwtoxy**, which stands for **Fortune:Word** to **XyWrite**. **XyWrite** is a DOS word processor that is supported by **PageMaker**, and so all of its formatting information is retained. Our **fwtoxy** program doesn't convert all formatting information, but it does a reasonable job. To convert the same **fword** file discussed above, we just type `fwtoxy fword > fword.xyw`. The **.xyw** extension tells **PageMaker** that it's importing a **XyWrite** file. All of our boldface, underline, and italics commands are converted. Hard returns at the ends of paragraphs etc. are preserved, and tabs are included, although it is sometimes necessary to adjust the tab stops in **PageMaker**.

Once we have run **fwtoxy** on our files, 90% of the work is done. The only remaining work is to add font information. It turns out that we can actually do a lot of that work from within **Fortune:Word** also. **PageMaker** supports the use of "style sheets" which are somewhat similar to format lines, although besides just setting line length and spacing, they also contain information about font styles, sizes, etc. So we can have one style sheet for headlines, another for body text and another for italics body text. Style sheets can be applied to any text **paragraphs**. These are text blocks that end with a hard return. That works well for headlines, body text, small headlines, etc. Unfortunately style sheets don't work for font changes within paragraphs, so when we want to switch to courier within a paragraph, we still have to do that from **PageMaker**.

Adding Style Sheets in Fortune:Word

Adding instructions for style sheets in **Fortune:Word** is easy. All you do is enclose the style in "<" and ">" symbols, e.g. "<body>". When **PageMaker** places the document, be sure to select Read Tags in the Place dialog box. You can easily set up **Fortune:Word** glossary entries to place the style sheet information into your document.

In Conclusion

The **Fortune:Word/PageMaker** connection is pretty straightforward when you use our **fwtoxy** program. It is also an easy process to exchange the files from UNIX to DOS. We are looking into another file conversion process that might even allow us to specify fonts within the **Fortune:Word** document. If that could be done, then we'd be all set.❑

Josh Lobel

/u/help

Tape Streamer Issues -- far, cron, and 20/60 meg compatibility

In your December issue, you stated that you can't use ***far*** *and* ***cron*** *together to automatically backup your system on tape at a convenient time. In fact, I have been able to do just that. The trick is that you can't use an* ***rc*** *file to start* ***cron*** *automatically when you bring your system up--instead you have to start it manually. This is because* ***far*** *needs a terminal for output, and if* ***cron*** *is started manually, any messages will go to the terminal that starts it. (You'll also get any other error messages from processes that* ***cron*** *starts on that terminal.) You should find information about this in Software Bulletin #54.*

Also, it's possible to read a 20-meg tape on a 60-meg drive if you use /dev/rst02 instead of /dev/st00.

David Katzakian

Thanks for the tips on tapes. Software Bulletin 54 suggests that you edit the **/m/rc/cron.rc** file so that **cron** is not automatically started when the system is booted up. All files in the **/m/rc** get executed just before the system comes up with the login screen). It should be edited so that the options **up** and **down** do nothing, and **restart** executes **/etc/cron**. This would look like this:

```
case $1 in
        up) ;;
        restart) /etc/cron
                ;;
        down) ;;
esac
```

To manually start **cron**, you type **/m/rc/cron.rc** restart. I think the same thing could be accomplished by just typing **cron**.

The issues of compatibility between the 32:16, Formula, and 5000 lines are actually somewhat complex. We will be printing an article about this shortly. If you want to use a 20-meg tape with **/dev/rst02**, you'll need to use the **far** command from the shell rather than the Tape Streamer Menus. Dave Kloes talks about how to do this in Volume 5 Number 9. As an example, if you want to restore something, you type:

```
far -Restore -keepset_name=daily /u -far_file=/dev/rst02
```

You'll need to adjust the **keepset_name** and the files you want to back up. Watch next month's issue for more info.

Printcap for Epson LQ-2550

Once again I turn to you in a time of difficulty. I recently acquired an Epson LQ-2550 for my office -- assuming that I could simply replace my Epson FX-100 with this model and go on working. Not so.

The text comes across, tabs and centering intact, but in a curious mixture of italics and regular type. And, just to make matters worse, the printer skips about five lines between lines of text.

I am assuming this is another job for ***/etc/printcap****. You helped me, in the distant past of 1984, obtain a printcap file for my FX-100. I sincerely hope you can pull it off again.*

I would appreciate it if you could issue a call for assistance in /u/help, asking anyone with help or advice to call me collect.

Thank you for all the assistance you can render in this matter. Keep up the good work.

Sincerely,

Nick Chapman
415 431-2138

Thanks for the compliments. I'm not sure we can be as helpful on this occasion though. With a whole new range of dot-matrix printers available, it is tempting to try to attach them to the Fortune. However, unless they are directly supported you may have mixed results. In general you will need at least a printer with a serial port (or an parallel/serial interface converter). Preferably it will have XON/XOFF handshaking -- if it doesn't you'll have to run it at a very slow speed. And finally, it would be helpful if it emulated a Diablo 630 or Qume 945 printer. Many of our clients have used the Toshiba 321 and 351 successfully.

Your assumption about **/etc/printcap** is correct--that is almost certainly where the problem with the Epson is coming from. Although you can attempt to modify the printcap file, you will probably not find it an easy task. If you want to try, your best bet is to start with old Epson printcap, and eliminate lines one at a time until you get a desirable change.

What we often do is set up the printer as a PLAIN1 or PLAIN2. PLAIN2 seems to have better luck with spacing issues. Then to change pitch, fonts, etc., we use the **wheels** file for printing Fortune:Word files, and the **fc** argument in /etc/printcap for printing with the **lpr** command. We have written about these subjects in the past -- you can find information on the **wheels** files way back in Volume 2 Number 7, and on **fc** as recently as Volume 5 Number 9. If you don't have the old issues, don't despair, we'll be writing about **wheels** files again soon.

If you take this approach, you won't be able to use the pitch selections on the **Fortune:Word Print Menu**, but you'll be able to accomplish the same thing with the **wheels** file.

If anyone out there has worked with the Epson LQ2550, please give us or Mr. Chapman a call.❑

Josh Lobel

Running and Compiling Programs on the 5000 - It's *FAST*!

The SCI/Fortune 5000 that SCI/Fortune provided us is proving to be a valuable computer. You will read in another article in the next issue of our experiences in using the 5000 to completely produce this issue of **/u/fortune** *news*. That article will spell out the many advantages of marrying the Unix and DOS operating systems.

In this article I want to give you some of my first impressions on how the 5000 performs in what would be considered a standard use of Unix: writing, compiling and running C-programs.

I can begin by saying that my first impression was one of sheer **speed** when comparing the 5000 to our 32:16. I will explain this in a few moments, but first let me give you some background on a particular project I am working on.

A research marketing firm for which I am consulting has been developing the capability of analyzing the content of spoken speech. For example, this company might use this technology to conduct interviews with prospective customers for some new product that was being introduced into the market place. By "*content analyzing*" these interviews, decisions could be made regarding product content, styling, placement in the market, use of key-words in the preparation of ads, etc.

I've been working closely with this company and have developed some C-programs that do the hard work of *content analyzing* interview transcripts. Originally, these programs were developed on our Fortune 32:16 and we have used these programs successfully for several projects for some large clients.

However, we are starting to reach some limitations with the 32:16 and as a consequence I wanted to see how my programs would run on the SCI/Fortune 5000.

I transferred the source programs from our 32:16 to the 5000 and began compiling them. With the exception of one program, they all compiled and worked the very first time. I will discuss how I handled the one program which did not work below.

After the programs compiled I ran my test program on the 32:16. This test program had to load into memory a Category Dictionary which contains over 5000 words and then it had to process 5 interview transcripts. On the 32:16 this took 3 minutes and 50 seconds.

My first impression of the new Fortune 5000 was one of sheer speed when compared to our 32:16.

When I ran the same exact test on the SCI/Fortune 5000 it took 47 seconds. That meant the 5000 was **10 times** *faster* than the 32:16 for this program. I have to admit - I was very pleasantly surprised!

Running the program is not the only thing to benefit from the faster processor speed of the 5000. In developing a C-program, one must write a program using an editor of some sort, compile the program using the C-compiler, test the program and when bugs are found, start the whole process over again.

I use the **vi** editor for most of my writing of C-programs. This editor is noticeably faster on the 5000 when compared to the 32:16. When compiling programs, I also found that the C-compiler (**cc**) is much faster on the 5000. For example, when I compiled the main program on the 32:16 it took 41 seconds but on the 5000 it took 10 seconds - that's **4 times** faster!

Thus, all of the time I spend in developing these programs will be cut down. I'm all for that!

I mentioned above that all but one of my programs compiled and worked properly on the 5000. The one that didn't was a program that is used for "kwicking." *KWIC* stands for Key Word In Context and my program simply prompts the user for a word and then looks through all the interviews for that word and prints out the occurrence of that word surrounded by the sentence it was found in.

As I found out later, the reason it didn't work properly was because of a programming error on my part. I should point out that even though I had made an error, this program still worked properly on the 32:16 - I won't get into why this was the case.

I was able to track down the error I made very quickly due to the debugging facilities that are standard if you have the software development package. The particular program I used to track down this error was called **ctrace**. By using **ctrace**, I found the line that was causing the error and I recognized what I did wrong. I changed the line, recompiled,

and everything worked properly.

As an aside, I had a very similar experience when I was trying to get **ispell** to compile on the 5000. Most of our readers will know that **ispell** is an interactive speller checker that we distribute on one of our Software Diskettes. I needed a speller checker for some work I was doing on the 5000 so I decided to try and compile **ispell** on the 5000.

I was able to get it to compile, but when I ran it, it simply died. No screen output, no error messages, nothing! Since I had used **ctrace** with such success previously, I tried it with **ispell** and almost immediately found where the program was ending. Once I found that spot, I was able to try a couple of things and without much effort I had **ispell** up and running on the 5000.

Conclusion

Overall I am very impressed with the speed of the 5000 for the purposes outlined in this article. It ran my programs 10 times faster than the exact same programs on the 32:16. It also cuts down my development time because the editors and compilers I use also run faster. Finally, the tools for debugging problematic programs are extremely useful which further cuts down the time I must spend making programs work.❑

Mark Palmerino

News From and About SCI/Fortune

The following text and the Survey on Page 17 comes from SCI/Fortune. We urge our readers to take the time and fill our the survey so that your voice can be heard. News about SCI's financial strength and developments with regard to a Motorola 68030 computer are at the end of the article.

Calling All Fortune Users

Recently, SCI/Fortune directed a telemarketing campaign to Fortune users. The campaign was a effort to reach out and communicate to Fortune users our interest in better meeting their needs.

The response to our calls was overwhelmingly postive. Delighted to hear from us, users expressed a desire for more communications from both SCI/Fortune and their Fortune dealer. Users also commented on the service they receive from their dealers.

Making a Good Idea Better

After a full week of calling efforts by our marketing and sales groups, we found that we had barely scratched the surface of our user population. Given our time constraints and desire to meet our users' needs, those users remaining to be called in the telemarketing campaign are instead being contacted via the questionnaire on the next page. This questionnaire gives users the same opportunity as those who were telephoned to express their needs, ideas, etc.

We care about Fortune users and want to know how well their needs are being met. We also want to keep users informed on the latest products, services and methods of fine tuning your systems.

SCI/Fortune asked us to print this survey so that they could receive feedback from you.

Contact Name: _____ **Telephone:** _____

Company Name: _____ Position: _____

Address: _____ # of Employees: _____

_____

_____

Are you serviced by an SCI/Fortune dealer? ❑ Yes ❑ No

If yes, Dealer Name: _____ Dealer's Phone: _____

If no, who services you? Name: _____ Telephone: _____

Computer Configuration Information:

Model of SCI/Fortune Computer: _____

How long have you owned the computer: _____ # of Terminals_____

How are you using your Fortune computer, i.e. Types of Software applications, Business functions, etc:

_____

User Questions

(Attach another sheet if necessary)

On a scale of 1 to 5 where 5 means great, what is your overall level of satisfaction with Fortune products. _____

Would you like to write a testimonial on how your Fortune has helped your business? ❑ Yes ❑ No

Are you aware of our new Intel 386 products? ❑ Yes ❑ No

Would you like to have more contact with your dealer in the following areas:

❑ Yes ❑ No Information regarding new Fortune hardware and software products.
❑ Yes ❑ No Information regarding new Fortune upgrades and enhancements.
❑ Yes ❑ No Service and/or hardware and software maintenance.
❑ Yes ❑ No Training.

What other products or services would you like to see from either your dealer or SCI/Fortune? What future computer needs do you anticipate having?

Comments _____

Response?

❑ No response required.
❑ Interested in Motorola upgrade.
❑ Interested in 386.
❑ Can I speak to an SCI/Fortune dealer.
❑ Can I speak to an SCI/Fortune representative.

Please tear out (or Xerox) and mail ASAP to:

Cindy Morey
Manager of Marketing Programs
SCI/Fortune
75 Shoreway Rd., Suite 2000
San Carlos, CA 94070

The input you provide in this questionnaire will allow us to better meet your needs. Please feel free to include more information if you have other needs, ideas or comments to express. Users who were telephoned earlier are also asked to participate by filling out the questionnaire.

SCI/Fortune Values Our Users' Opinions

We have listed below recent changes we have made, due in part to comments and suggestions from users.

- We've made price reductions on our 32:16 and Formula product lines, including 32:16 expansion cabinets. Call your dealer for prices.
- We are recruiting dealers for areas that are not currently being serviced by an SCI/Fortune dealer.
- In the area of dealer service, we are discussing with dealers the comments expressed by users during our telemarketing campaign. The same will be done with the results of the questionnaire.
- We are continuing to look at all the options available for an upgrade path from the Motorola to the Intel product line.
- We will publish user testimonial stories in future editions of **/u/fortune** *news.*
- Open houses are offered by seven SCI/Fortune dealers in March and April. *See our advertisement on Page 2 of this issue of* **/u/fortune** *news.*
- SCI/Fortune will publish articles and advertisements regularly in **/u/fortune** *news.*

To keep the communication lines open between SCI/Fortune and our users, we will routinely contact users either by telephone or direct mail. **SCI/Fortune extends a sincere thank you to all of you who took the time to answer our questions.**

SCI/Fortune Gets The Word Out

Look for us at "UNIFORUM '89" at San Francisco's Moscone Center on February 28 to March 2. Our booth number will be #1000, so come and introduce yourself if you're at the show and meet the Marketing and Sales team from SCI/Fortune.

SCI's Financial Picture Looks Rosy

This month we have several pieces of news about SCI/Fortune. First, we have highlighted some recent financial information regarding SCI/Fortune's parent company in Figure 1. The figures indicate that the quarter ending December 31, 1988 show an increase in Sales, Net Income and Share Earnings. We also list the statistics for the six month period ending December 31, 1988 as compared to the same six month period for 1987. This information comes from the New York Times of February 2, 1989, and shows that SCI continues to be a stable company that is showing very profitable trends.

SCI/Fortune Distributes SCO Xenix System V

SCI/Fortune announced a distribution agreement with Santa Cruz Operations. This agreement covers the distribution of SCO XENIX System V for the Fortune 5000. SCO XENIX System V is a robust, fully licensed implementation of AT&T's own UNIX System V, with value-added enhancements for both the microprocessor and commercial environments. The Fortune 5000, SCI/Fortune's most recent entry to the Unix Market, is an 80386 based system that supports INTERACTIVE 386/ix and MS-DOS as well as SCO XENIX.

The Operating System - contains the full set of XENIX utilities required to run business applications, administer the system, edit files, and communicate with other users. Standard features include the Unix System V shell, the csh, a menu-driven system administration shell, the vi editor, electronic mail, uucp and over 100 other Unix system commands.

The Development System - supplies all the tools needed to write C and assembly language programs, while providing a powerful DOS cross-development environment to create programs for DOS or XENIX.

The Text Processing System - contains tools for preparing large or complex documents. Included are the nroff/troff document formatters, macro packages, and special formatting tools such as eqn for mathematical equations and tbl for tables. Also included are tools to check spelling and style in written text, and an online dictionary. Online manual pages are included with an intelligent man program that saves time when accessing complete reference documentation.❑

Figure 1.

SCI's Quarterly Earnings Ending Dec. 31, 1988

	'88	'87
Sales	223,944,198	173,152,769
Net Income	4,382,575	3,961,596
Share Earn.	.21	.19

SCI's Six Month Earnings Ending Dec. 31, 1988

	'88	'87
Sales	449,526,000	324,839,000
Net Income	9,182,000	7,838,000
Share Earn.	.44	.38

TRI - TECH COMPUTER SERVICES, INC.


WELCOME TO THE BACK PAGE

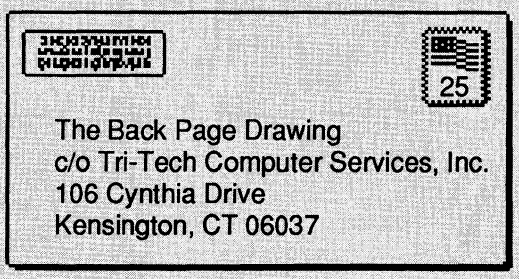
We're having a

GIVEAWAY PROMOTION

and by having our ad on the back page we've made it easy for you to enter.

Just cut out this entire ad ALONG THE DOTTED LINE AT LEFT and write your phone number on the top. Your mailing label on the back will enter you in our **GIVEAWAY PROMOTION**.

Place this ad in an envelope and Mail to:



FIRST PRIZE winner will receive 1 Fortune Refurbished Workstation (FIS1000 or F1000 Style). Includes: Terminal, keyboard, power cord and 10' cable.

SECOND PRIZE winner will receive a (1) year paid subscription (Renewal) to /u/fortune news.

THIRD PRIZE (3 to be chosen) winners will receive their choice of a box of 3M Floppy Disks or a Tape Cartridge.

All entries must be received by 12:00pm Friday March 31, 1989.
Only the Original back page of February's /u/fortune news publication is a valid entry form (no copies or duplicates). We must have the Cambridge Consortium mailing label which was used to send your February Issue to you. The names will be chosen on Friday April 7, 1989 and will be notified on Monday April 10, 1989. The winners names will appear in the April edition of the /u/fortune news.

Contact Tri-Tech Computer Services, Inc. at 1-800-622-8827 (828-9784 in CT) for a complete set of 'GIVEAWAY PROMOTION' Rules or if you need more information about this promotion. Void where prohibited by law.

106 Cynthia Drive
Kensington, CT 06037
(203) 828-9784
Jim Monterosso & Victoria Galo

60 Prospect Street - Suite 2
Waltham, MA 02154
(617) 647-3236
Norm Westlund & Allison Black

/u/fortune news
225 Crescent Street
Waltham, MA 02154

/u/fortune* news

The Newsletter for Users of SCI/Fortune Computers March 1989 / Volume 6 Number 3

Unix, Dos and the Fortune 5000

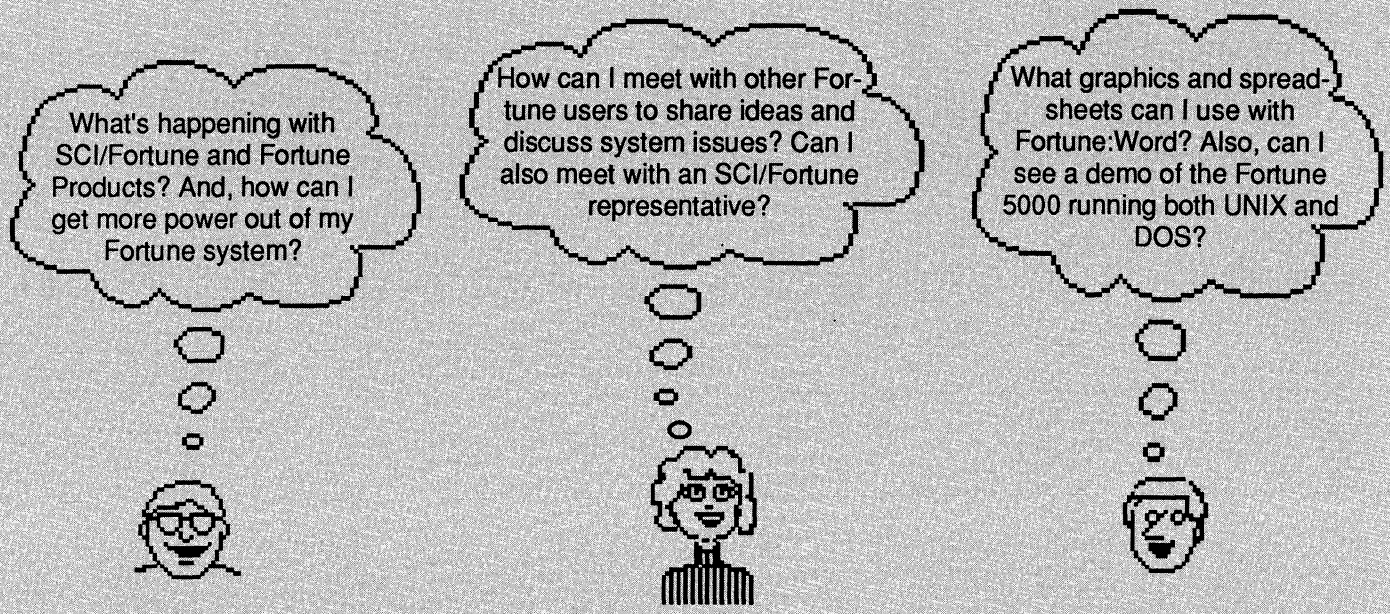
How we used SCI/Fortune's new computer to produce this entire issue.

File Edit Options Page Type Lines Shades

PageMaker® by Aldus Corporation

U.S. Version 3.0

When Fortune Users Ask Questions SCI/Fortune Provides Answers



If these kinds of questions have been swimming around in your head lately, then you should go to an open house sponsored by an SCI/Fortune dealer. Our past open houses have received rave reviews from dealers and users alike. *It's an event "not to be missed."*

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To reserve space at an open house listed below, please contact the SCI/Fortune dealer directly. Anyone from your company as well as guests are welcome to attend.

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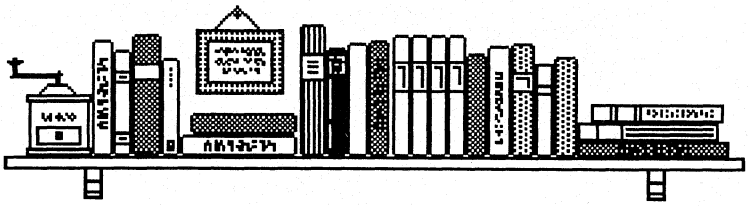
CONTENTS

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

Question: *What is the word on IDOL-II on the Fortune 32:16? Can I get it yet?*

Answer: If you do not have it, and I am sure you do not, you will find it impossible to get IDOL-II for the 32:16. Concept Omega just announced that IDOL-II has been officially discontinued as a product. According to a marketing update bulletin from Thoroughbred Software dated March 13, 1989, it will be neither fixed, maintained nor enhanced. Its replacement, IDOL-IV, will never be available for the 32:16 because it requires at least Level 7.3.4 Thoroughbred BASIC. We all know that the 32:16 is frozen in the 6.5.12 BASIC environment. Although I will never abandon my Fortune:Word and Multiplan, I think it's time to admit that the day of the 32:16 has passed.

The last time I discussed IDOL-IV was in the October, 1988, issue of **/u/fortune** *news* (Volume 5, Number 10). At that time I put discussions of Thoroughbred's Fourth Generation Language (4GL) products on hold until such time as they were running on some of the Fortune systems. I also mentioned that I, personally, was hanging onto IDOL and BASIC until I felt that the testing of 4GL products was pretty much completed. Much has happened since then.

For starters, the December, 1988, issue of Inc. Magazine, in its annual report of the 500 fastest growing privately held U.S. corporations, listed Concept Omega as number twenty with a 7279% growth rate in 1987 over 1983. Furthermore, Concept Omega has been showing a profit rate of 11% to 15%, which indicates a stability not apparent with many other companies on the list. Since this is no small accomplishment, I had to throw it in.

The best news is that by the time you are reading this, IDOL-IV will be available for the Formula 5000. One of the reasons this came about is because Concept Omega abandoned Wyse and adopted the SCI computer for its own TS-386 (OEM) product line. The SCI box used is, in essence, a Formula 5000 look-alike with the name "Thoroughbred" pasted on it. With any luck, this SCI/Concept Omega marriage will be long and fruitful. Isn't it strange that Fortune and Thoroughbred are together again? I swear, if you hang around long enough, anything is possible in this business.

The latest release of IDOL-IV and other 4GL products is Level 4.3, and it looks good. Most or all of the irritating little "bugs" have been fixed, and the products are beginning to live up to the hype that accompanied their announcement. If you have a Formula with IDOL-II or an earlier version of IDOL-IV, you may upgrade rather inexpensively through your Thoroughbred dealer. At this time Thoroughbred products are sold by Concept Omega, NOT SCI/Fortune. (That may be the best news yet!) And because Concept Omega is still trying to promote 4GL to the general public, the cost of a complete package remains reasonable. I expect it will go up as the demand increases.

As for the IDOL and BAS Applications on the Fortune 32:16's, they are being phased out in favor of new Thoroughbred applications generated in 4GL. But you can keep your present accounting system while upgrading to a Formula. The new BASIC and IDOL-IV will handle 3GL programs and files.

Needless to say, I have been chomping at the bit. The 4GL has been spreading rapidly on other computer systems, and it looks like Fortune has finally fallen into step. Over the past few months we have heard from more than one subscriber to **/u/fortune** *news* who have asked us to address the new products. Now we can.

Basically, IDOL-IV consists of three primary components: DICTIONARY-IV, REPORT-IV and SCRIPT-IV. Versions of DICTIONARY-IV and REPORT-IV were also components of IDOL-II. I will attempt to relate each of these components to IDOL as we know it from the 32:16.

The primary file of IDOL was the Global Element Dictionary, or CGLBD. In here were kept field descriptions for all files defined under IDOL. Available for each defined field were attributes such as padding protocol, date format, data entry restrictions, precision and help text name and location. The relationships of these elements were further defined in CCNVZ, the accounting control file, and in UBSQ, the IDOL file header information records. Menu definitions were stored in UASQ, and data entry screen header information in UCSQ. Each data entry screen was in an individual file named "*DEnnn" (where "nnn" was the IDOL file number), and each file maintenance screen had its own indexed file named "*FMnnn".

In IDOL-IV, DICTIONARY-IV consolidates all of this and more into two "design dictionaries", the Database and Global Dictionaries. Within the Database Dictionary, collections of related definitions are stored in individual "Libraries". The first two characters of each definition represent the Library to which that definition is assigned. In actual practice, you may use combinations of various Library definitions, or you may copy definitions from one Library to another. The Global Dictionary holds the file elements, defined much the way they were defined in CGLBD, only expanded. The Database Dictionary contains definitions for file descriptions, screens (data entry, file maintenance, and menu), menu defaults, and help text. But there is more to IDOL-IV. We also have Database Dictionary definitions for Links, Views and Message Lists. Links act as traffic cops: they associate Data Files with various Formats, Screens, Sorts and Views. A View allows manipulation of more than one Data Record at a time, with each record displayed on a single, left-to-right-scrolling, horizontal line. Message Lists contain Input, Non-Input, Yes/No and Prompt or Constant messages which can be displayed and inserted in programs. Since all messages to the screen are in a maintainable file, it becomes very easy to change the way a message reads or even translate an entire application into a foreign language.

REPORT-IV boldly goes where no IDOL Report Generator has gone before. In IDOL, report header information was contained in CCNVZ, while the individual reports themselves were in files named "Rnnnxx", where "nnn" was the IDOL File Number and "xx" was a user-defined report name. With a good technical background, you could generate complex reports utilizing several data files, but the process was sometimes more complicated than actually writing the BASIC code to do the job. Also, the final product was etched in stone. For example, if you wanted a subtotal line, it was followed by a line of dashes, whether you liked it or not. In order to define a new report or access an existing one, you had to be in the file maintenance screen of the primary (or only) file used by that report.

REPORT-IV is an independent application with its own "global menu". When installed, it is accessed from any IDOL-IV menu via the <F3> key. Aside from its ability to sort, select fields, total, process, and cross reference (features in IDOL), REPORT-IV has the ability to access multiple BASIC files as well as files from any application or data base. The formatting of the reports is similar to maintaining a word processing document or programming with a full-screen text editor. You are no longer restricted to column reports with column headings: you can generate your own forms such as invoices, payroll checks and billing statements. If you wish, for example, to sort your customers by sales representatives, you may have all pertinent information about the sales rep (e.g., name, address and phone) appear before the list of pertinent information on that sales rep's customers. The customer information will indent any way you want it to, and may appear in column format under the sales rep information:

```
Salesman:  Salesman Name                    Salesman Phone
           Salesman Address
           Salesman Address
           Salesman Address

   Customer       Name/Address              Contact/Phone

     Code         Customer Name               Contact Name
                    Customer Address          Phone Number
                  Customer Address
                  Customer Address

     Code         Customer Name               Contact Name
                    Customer Address          Phone Number
                  Customer Address
                  Customer Address
```

Reports, too, are stored in two-character Libraries and can be saved and used as menu selections in IDOL-IV.

The last major component in IDOL-IV is the new programming language called SCRIPT-IV. It is programmed with a full-screen text editor and appears on the screen more like shell script than Business BASIC (only easier to read). Your word processing keys are enabled in the editor: you may insert, delete, go to previous or next screen and use the arrow and tab keys. Because it relies on formats, screens, links, views and messages defined elsewhere in IDOL-IV, many of the "housekeeping" chores of programming are performed automatically in SCRIPT-IV. Once you have defined a format, a link and a screen, all you have to do in SCRIPT-IV is tell the computer to print the screen and type in "INPUT SCREEN" and the name of the screen. The program will go through each and every data entry field in proper order, regardless of the number of fields in the screen. All entry is validated, and all defaults and function keys are automatically processed. If you have included "help" text with your fields, it will be brought to the screen with <F6> in a window you designed with the screen.

One big benefit with SCRIPT-IV is the ease of maintenance. Since the language is reading from the Dictionaries, you can change the value of any definition once and all Scripts using that definition are altered. For example, if you originally designed your Inventory Item Code to be 12 characters long and now find you need 15 characters, simply change the Global Element Dictionary definition of the element length from 12 to 15 and all programs immediately adjust to the change. I know what you are thinking. What do you do about screens that only allowed for 12 positions for Item Code? No problem. The entire code does not need to appear in the screen: the operator may scroll horizontally within a data entry field. (By the way, the insert, delete, tab and arrow keys are enabled for data entry on most terminals.)

We have touched on just some of the features in IDOL-IV. I'm sure we will be going into much more detail in future articles. In the meantime, take a look at the product if you have not already seen it. It is packaged with complete Help text available at the press of <F6> from just about anywhere, so getting started is practically painless. And if you find something exciting or useless or friendly or full of bugs, give me a call or drop me a note. I'm ready for this one and apparently so is SCI/Fortune.❑

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System Administration: Part 23

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

In the Part 22, we began our discussion of the "/usr" directory - specifically "/usr/adm", "/usr/bin", and "/usr/include". In this issue, we will talk about the "/usr/lib" directory.

/usr/lib

The "lib" in "/usr/lib" stands for "library". This directory mostly contains files that are used in support of those that are doing development programming in languages like "C". If you have Fortune-to-Fortune Copy (better known as "uucp" to the rest of the Unix world), there will be a "uucp" directory. This directory contains the files and commands that are needed to transmit files from one Fortune system to another.

For those that are not familiar with "uucp", here are some of the things it can be used for:

1. Have one Fortune system automatically call other Fortune systems (or other Unix systems) and execute commands. For example, you could tell your Fortune to call another Fortune system at some designated time(s) and run an accounting program.

2. Have one Fortune system automatically call other Fortune systems (or other Unix systems) and download or upload files. For example, you could tell your Fortune system to call another Fortune system at midnight on Monday thru Friday and transfer files.

3. You have the ability to set up the system to indicate:

   a. Who can remotely login to your system.

   b. When another system can login or when your system is to call out.

   c. What directories a remote login has access to.

   d. The modem dial sequence required to automatically callout on a modem that is attached to the system.

   e. The "sitename" for all remote systems that are authorized to login to your system.

This software could be used, for example, to transfer Fortune:Word documents, spreadsheets, or accounting files and/or programs between systems. We know of one client who transfers spreadsheet documents that are proposals for prospective customers between a Headquarters office and their Branch Offices. They have dramatically reduced the time it takes to present a formal proposal by using this method.

You should understand that "uucp" is NOT interactive - it is NOT used to for you to login to another system. The commands that are issued are executed automatically by the system once the "uucp" files have been set up. "uucp" stands for Unix to Unix Copy which means that files and commands may only be transferred or executed from one Unix system to another. You could not use this command, for example, to transfer files from your Fortune to MS-DOS.

In addition to using "uucp" for transferring files via modem, it can also be used to directly connect two Fortune systems. In this way, you can transfer files at a faster speed between the two systems.

It can take some time the first time you try to set up this software, however, the benefits can be well worth it. In addition, we have written some shell scripts that make it easy

to transfer files (or a whole directory of files) from one system to another.

Another interesting directory in "/usr/lib" is the "wheels" directory. It contains the commands and sequences that are used for the different "printwheels" that are used in Fortune:Word. Here, for example, is an extract of printwheel #1 for the HP Laser printer from the "/usr/lib/wheels/hp.whl" file:

```
# Standard ascii character set
# wp print wheel 1 portrait letter size
>1
+init "E(8UE(s0p10h12v0s0b5T"
^YJA   "\320"       # Danish A
^YJa   "\324"       # Danish a
^YKC   "\264"       # Cedille C
^YKc   "\265"       # Cedille c
^Y#    "\273"       # English pound
^Y!    "\270"       # Spanish !
^Y?    "\271"       # Spanish ?
^Y'    "\275"       # Section symbol
^Y(    "\272"       # International Currency
^Y{    "\336"       # German sharp
^Ya    "\323"       # Danish AE
^Yq    "\327"       # Danish ae
```

The entries shown at the bottom of the file are sequences that can be entered to produce the symbol shown in the last column of information. For example, if we wanted to print an English pound sign, we would enter the following sequence in our Fortune:Word document:

^Y# (CTRL-Y plus the # symbol)

This would print the English pound sign character on the printer when the document was printed.

One thing we can do is to add some of our own character sequences to get our printers to do some interesting things. For example, we have added CTRL-Y entries to get the Laser printer to do "Line Printer" and other sequences for different font cartridges such as "Presentation" size character printing. The "\273" in the line for the English pound sign is an octal representation (remember our conversion chart in the last issue?) of the character sequence. We can also put ESCAPE sequences between the quotes. Let's do one to give you an idea of how this works. Here is the escape sequence for a Laser printer to do "Line Printer." (This is basically a compressed type print style option that is available in the standard resident HP font - if you have a Laser and have not used it, you should):

```
ESC(s16.66H
```

The sequence for returning to normal Courier font is:

```
ESC(S10H
```

Here are two new entries we are going to add to the "hp.whl" file:

```
^Yb    "\E(s16.66H"    #Start Line Printer
^Yc    "\E(s10H"       #Start Normal Courier
```

After these entries have been added (we suggest you save a copy of the original ".whl" file before you make any changes in case there are any problems) the CTRL-Yb and CTRL-Yc sequences can be entered anywhere in your document to change the font style. While we have given you these examples for the HP Laser printer (assuming you have Fortune:Word 3.1 and For:Pro 2.1), the same technique can be used to enhance the printed output for your particular printer.

/usr/man

If you have purchased the "Development Utilities" for your Fortune system, one of the utilities that is installed is the "man" command. This command allows you to look at any of the manual pages for a given command on your terminal screen. The documentation for these pages is stored in the "/usr/man" directory. Basically, when you purchased your Fortune system, you got the "runtime" For:Pro which is contained on your three Cold Boot diskettes. These are not all of the commands and utilities that are available. By purchasing the "Development Utilities", you get three more diskettes worth of For:Pro command and utilities and a For:Pro Manual. Contact your dealer for information about this software.

/usr/spool

This directory contains sub-directories that keep track of data that is "spooled" or "queued" on the system. For example, when data is sent to the printer queue, it is temporarily stored in the "/usr/spool/lpd" directory. If you have the "mail" command on your system, messages that are mailed to other users on the system are temporarily stored in "/usr/spool/mail". In addition, the data that is transferred using "uucp" is also temporarily stored in "/usr/spool/uucp" and "/usr/spool/uucppublic".

/usr/spool/lpd

Each printer that is defined on the system has a sub-directory in the "lpd" directory. For example, printer one would have a directory called "pr1"; printer two would have a sub-directory called "pr2", etc. Within each of these directories there is always a file called "prstate" that should not be removed. It contains parameters for that particular printer. When a print job is sent to the printer, the files that are to be printed are also sent to this directory. In addition, control files for the print job are stored here. A "lock" file is created while the print job is in progress to let the system know that the printer is in use. If the system goes down "ungracefully",

these temporary files are left hanging in this directory. Let's take a look at how to send a print job to the printer from For:Pro; how to check the status of the queue; and how to remove the print job:

Let's say we want to print the "/etc/termcap" file on the default printer on the system from For:Pro:

```
# lpr /etc/termcap
```

The same print request can be sent to another printer by using the "-p" option:

```
# lpr -p 2 /etc/termcap
```

This would print the "/etc/termcap" file on printer number 2. To check the status of the print queue for all printers, we would enter:

```
# lpq -a
Pr#       1
Owner     root
QID       203
Type      file
Size      39664
Filename  laa00203
Jobname   /etc/termcap
Comment
Copies    1

3   No jobs queued
```

Normally this information would print across our terminal screen, however, due to space limitations, we have shown it vertically. As you can see, this command gives us a lot of information about print jobs. In particular, we see that the QID number for our print job is "203". Notice also that the "Filename" is "laa00203" which includes the QID number as part of the name. The command also indicates that there are "No jobs queued" for printer #3.

If we were to go to the "/usr/spool/lpd/pr1" directory and look at the files that are there right now, we would see "laa00203", "daa00203" and of course the "lock" file. If we wanted to cancel this print job, one way would be to:

1. Remove the "laa00203", "daa00203", and the "lock" files from "/usr/spool/lpd/pr1".

2. Issue the "ps -al" command and find the process numbers for the two print commands that are running - "/usr/lib/lpd" and "/usr/lib/lpf".

3. Kill the processes for these two commands.

There is a printer command that we can use, however, to cancel any print job. First we would issue the "lpq -a" command shown above to get the QID number for the job. Once we know this number, we can cancel the job:

```
# lprm -p 1 203
lprm: removing 203
```

The "-p" flag on the "lprm" command is used to tell which printer the job we want to cancel is on. The "1" in this case indicates printer #1. We also include the QID number of the print job and the job is cancelled.

Some of you may wonder why the printer continues to print for a time after a print job has been cancelled. The reason is that printers have a "buffer" that stores part of the information we are printing. Even though the system is no longer sending data to the printer, the information that is stored in the printer buffer will continue to print until the buffer is empty. Once the job has been cancelled, you can "flush" the buffer by turning the printer off and back on again.

/usr/spool/uucp

If you are using "uucp" (Fortune-to-Fortune copy) on your system, this command queues temporary files and lock files in the "/usr/spool/uucp" directory. In addition, log files are located here that keep a log of files that have been transferred and any error messages that may have been received. If files are transferred successfully, there is also a log file that tells you how many characters were sent and how long it took to do the transfer.

/usr/spool/uucppublic

When you use "uucp", the files to be transferred are normally expected to be sent and received in this directory. Files can be sent and received from other directories if "uucp" is set up to allow this.

/usr/spool/mail

If you have the mail utility on your system, mail that is sent from one user to another is stored in this directory. All of the messages sent to user "davek", for example, would be in a file in this directory called "davek". If these files are removed from this directory by the System Administrator, it is the same as if the user had emptied his mailbox.

In the next issue, we will complete our discussion of the "/usr" directory.❑

Filling In The Blanks

Using Forms Processing with Fortune:Word

We have often noted that computers should save us from having to perform routine work. In fact, hardly a day goes by when we don't take a moment to scheme about some way that our Fortune could actually do all of our work for us. That day hasn't arrived quite yet (although we are up to about 95%), so in the meantime, we decided to experiment with the **Forms Processing** features of **Fortune:Word 3.0**.

Forms Processing lets you set up a standard template, and then just enter the information that will change. For instance, you might create your invoices in **Fortune:Word**. Rather than typing in all of the boiler-plate text like "Bill To:", "Invoice Number", etc., **Forms Processing** does it for you. Or perhaps you're a lawyer who's creating a new condominium document for someone, and all you need to do is change the name and address of your client. Maybe you make up all of the report cards for your students using **Fortune:Word** and all you want to do is change the student's name and enter their grades next to each course. If any of these scenarios is similar to what you do, then **Forms Processing** could be of real use to you.

There is some overlap between what glossary entries can do and **Forms Processing**. One key feature of **Forms Processing** that could be an advantage in many situations is that the user does not have access to the boiler-plate text on the form. Only the variable text may be changed once the form is fixed. This is important where formatting is crucial to fit a preprinted form, or where you just don't want the user to change the required text.

In order to use **Forms Processing**, you need to create a template document. This is very similar to any other document that you can create on the Fortune. You'll put in all of your formatting codes (including laser printer font instructions) along with the standard text. The only thing that is unique about a template document, is that you have to specify where the user will be required to enter information, and what kind of information is appropriate. If the field permits letters and numbers, such as an address, you fill the field with up carets (^), which are SHIFT-6 on the Fortune keyboard. If the field can only be filled with numbers, like a zip code, then you would use the single back quote (`), which is on the top gray key on the Fortune keyboard. Here's an example for a name and address:

One key feature of *Forms Processing* is that the user does not have access to the boiler-plate text on the form, only the variable text may be changed.

```
Name:          ^^^^^^^^^^^^^^^^
Addr:          ^^^^^^^^^^^^^^^^
City,St,Zip ^^^^^^^^^^ ^^ `````

Phone          (```) ```-````
```

As you create your template, you can insert any special characters you want, such as the parentheses and dashes in the phone number. Be aware though that when you enter the phone number, it will be necessary to hit the RETURN key after each section of the field, e.g. in the phone number above, you would enter "617 RETURN 894 RETURN 6900". You will also want to bear in mind some of the special features of **Forms Processing**, like the use of the **COPY** key, which automatically copies in the text from the last field. So if you put Bill To: and Ship To: side by side on your form, you can just type in the name and address on the left side, and each time you move to the right, you'll be able to just hit the **COPY** key. Some experimentation will be needed to create the form that best suits your needs.

To actually use **Forms Processing** after you've created your template, you just choose **Forms Processing** from the **Document Processing Tools** menu selection (shortcut **fpr**). The first thing it asks you for is the name of your template document. Once you've entered that, you'll see your form appear on your screen, and the first place for you to enter text will be underlined. Enter your text and press RETURN. The next field for completion will be highlighted. You may move back and

forth between fields by using the **Next Scrn** and **Prev Scrn** keys. As mentioned above, the **COPY** key will copy the contents of the last entry. The **DELETE** key has a special purpose in **Forms Processing**; it is used to eliminate the blank spaces at the end of a field. In our example above, you might enter in the city name with a comma, and then hit the **DELETE** key. That will eliminate spaces between the city and state by filling the blank with ^^^^^'s which will not print.

Once you've completed your form and hit **CANCEL/DEL**, you have several END OF EDIT options. A complete description of the options can be found in your **Fortune:Word** documentation, but we'll summarize here:

EXECUTE	Asks you for a document name and saves a copy of the form in the new file and leaves **Forms Processing**.
FORMAT	Asks you for a document name and saves the document and sends it to the printer before leaving **Forms Processing**.
GO TO PAGE	Displays further options.
Press 1	Saves a copy of the form in a new document, and returns you to forms fill in.
Press 2	Returns you to the blank form. When you're all done entering forms, all of the forms you've entered will be in a single file separated by page breaks. You can save and/or print the entire thing when you're done editing with the EXECUTE or FORMAT commands described above.
Press 3	Prints the form, but does NOT save it. Once printed, it's gone. You are then returned to the **Forms Processing** screen.
Press 4	Saves the form in a new file, prints it, and returns you to the **Forms Processing** screen.
Press 5	Like 3, but leaves **Forms Processing**.

Any of the above options can be used, even if they're not currently displayed on the screen.

Have fun, experiment -- it'll be worth it, and it's very easy.❑

Josh Lobel

News From and About SCI/Fortune

Forbes Ranks SCI #10 in Computer Industry For Profitability

In the January 9, 1989 issue of *Forbes* magazine **SCI**, the parent company of SCI/Fortune, was ranked number 10 in the **Computer and Electronics** industry for return on equity. What makes that even more significant is that SCI was right behind #9-ranked IBM. In fact, the *Forbes* listing puts SCI in rather good company; the top 10 in profitability also includes Sun Microsystems, Cray Research and Apple Computer. *Forbes* also ranked SCI as #7 in sales and #9 in earnings per share. As owners and users of SCI/Fortune computer products, this type of industry standing for SCI/Fortune's parent company should provide a sense of confidence for long haul.

SCI/Fortune Goes To UniForum

SCI/Fortune recently concluded a three-day exhibit at **UniForum '89**, held at Moscone Center in San Francisco. Under a revolving SCI/Fortune sign that sat atop the "new age" styled booth, SCI/Fortune showed off their Motorola and Intel product lines and reseller programs. Both the products and programs generated a considerable amount of interest from end-users, dealers and VARs. Visitors at the booth saw demos of Interactive's 386/ix, SCO's Xenix, Fortune:Word, SouthWind graphics, X Windows, Informix, Ventura publishing, GEM publisher and networking capabilities from Unix to Dos.

Throughout UniForum, SCI/Fortune received many compliments on the appearance of the Fortune 5000 cabinet and about the quality of the Motorola products. Prospective dealers and VARs were very interested in the reseller programs and commented that they were unique and more thorough than those provided by many of SCI/Fortune's competitors. SCI/Fortune also had some inquiries from past Fortune dealers who expressed a desire to become new SCI/Fortune dealers based upon the expanded product range and reseller programs.

The participation at UniForum '89 provided SCI/Fortune with a productive as well as exciting week, starting with the booth construction and followed by the actual show which went from February 27th to March 2nd. SCI/Fortune gave a clear message to the public that they make quality products and build partnerships with resellers via special programs to promote those products. Given the results at UniForum, SCI/Fortune plans to participate in many similar tradeshows in the future.

Commercial Solutions, Inc. Offers Accounting Package on the Fortune 5000

The past year has been very productive and eventful for **Commercial Solutions, Inc.** which is located in Columbus, GA. CSI recently became an SCI/Fortune dealer and announced the availability of their Accounting Classics on the Fortune 5000, a 386-based computer.

Currently listed in Fortune's software directory, CSI's **Accounting Classics** was ported to the 32:16 and Formula systems over a year ago. Since then, CSI has kept themselves quite busy adding new features to their accounting package.

In addition to enhancing their accounting package, CSI has stepped into the exciting world of 386-based systems. Their recent port to the 386 platform further expands the range of Fortune compatible products that span types of hardware SCI/Fortune markets.

Thoroughbred BASIC 7.3.4 released for Fortune 5000

SCI/Fortune announced the Thoroughbred BASIC version 7.3.4 for the Fortune 5000. Version 7.3.4 is the latest version of the Thoroughbred BASIC. This is the first release of Thoroughbred BASIC ported to the Interactive 386/ix operating system. This release is written in the C programming language, and as a result, it offers the user a considerable performance improvement (as high as 50%) over releases for other operating systems using version 6.5.12.

Thoroughbred BASIC is one of the most popular BASIC products in the market, with tens of thousands of installations worldwide. As an interpretive language, it provides an excellent environment for developing applications. Thoroughbred BASIC stores programs in pseudo-code, offering the user

fast execution of programs, as well as real-time source code debugging. A user can trace the execution of a program, check the contents of variables, and even make changes to the logic during execution. Thoroughbred's popularity is demonstrated by the fact that hundreds of applications have been written in Thoroughbred BASIC.

Thoroughbred BASIC is available on a number of different machines under a variety of operating systems. Because data files are easily ported across machines and across operating systems, applications developers have the potential to sell a greater number of applications when the application is written in Thoroughbred BASIC. For developers wishing to protect their development investment, Concept Omega provides Thoroughbred PASSPORT and an encryption command. Using these tools, developers can distribute BASIC applications in an encrypted form and control execution of the encrypted application by tying the application to the unique serial number contained in Thoroughbred PASSPORT.

Thus, SCI/Fortune continues its commitment to industry standard software. The popularity of the Thoroughbred BASIC product and the easy portability of applications written under Thoroughbred BASIC opens up the 386 market to the applications developer. By using Thoroughbred BASIC with the Interactive 386/ix operating system, the applications developer opens up the entire 80386 marketplace for his or her application.

Performance and Limitations

Because the source code for this version of Thoroughbred BASIC is written in the C programming language, performance improvements have been as high as 50% when comparing the test results of version 7.3.4 with version 6.5.12.

With the exception of one error handling function (TSM), Thoroughbred BASIC 7.3.4 is compatible with SCI/Fortune's previous release of Thoroughbred BASIC 6.5.12, Thoroughbred IDOL, and the SCI/Fortune distributed Business Applications, all working under the For:Pro operating systems.

Due to the physical characteristics of Thoroughbred PASSPORT, users must set their terminal baud rates no higher than 19200. A higher baud rate will erase the PASSPORT data, and cause Thoroughbred BASIC to fail upon attempting execution.

Special Upgrade Version - This is the first release of Thoroughbred BASIC under the Interactive 386/ix operating system. However, Thoroughbred BASIC/Fortune users who are upgrading to the new Fortune 5000 can purchase a complete 16-user package for a low upgrade price. Contact your SCI/Fortune dealer or representative for details and requirements.❑

See The BASIC Advisor, Page 4, for more information on the new Thoroughbred products.

/u/help

Want a Good Home For Your Fortune?

A non-profit Christian radio station in Tucson, AZ, needs a reliable Fortune System with at least 20 MB storage and 512 KB RAM with console and keyboard that currently runs Fortune:Word. Any donations would be appreciated and, of course, tax deductible. Contact Rick at 602 299-7660 for more information.

Dear **/u/fortune** *news*,

We would greatly appreciate it if you would include a short blurb in an upcoming issue regarding the following: If any Fortune Users in the Raleigh/Research Triangle Park N.C. area are interested in an informal but informative users group, then they should contact me at Murphy Yelle Associates, 6308 J. Richard Drive, Leesville Industrial Park, Raleigh, NC 27613 - Telephone: (919) 787-7873.

It is our intent to merely compile a listing of users with their hardware and software for distribution and ultimate assistance in working with SCI/Fortune products. Some of us seemed to have worked with this stuff for quite awhile and we would like to be able to share tips and tidbits locally.

This company has three 32:16's and one 8000 running our own surveying and CAD software written in Business Basic...Enjoy the magazine greatly, thanks for helping us out with this stuff.

Sincerely,
James S. Murphy, RLS

The following question and answer was contributed by SCI/Fortune Systems.

Question: Is it possible to go from Unix to VP/ix in a more timely manner?

Answer: To execute a "quickboot" of VP/ix, issue the following command on the Unix command line:

$ vpix -r <CR>

The **vpix -r** command initialized VP/ix quickly from a file containing the image of the virtual PC state. The file called **$HOME/vpix/vpix.img** is used to determine the last state. An alternate file could be used if an entry in the VP/ix configuration file (**$HOME/vpix/vpix.cnf**) references a different file.❑

A Fortune Success

The following article was written by ***Bradley G. Wicklund*** *and was originally contributed to SCI/Fortune for their use. We thought it was an excellent account of how SCI/Fortune equipment can solve the business needs of users. We wish to express our thanks to SCI/Fortune for giving us permission to reprint this article.*

As the administrator for the law firm of **Lommen, Nelson, Cole & Stageberg, P.A.**, I work alongside thirty two attorneys, eight paralegals, twenty seven full and part-time legal secretaries and nine office support staff members. The firm handles most types of legal matters with the primary work and emphasis in (1) civil litigation, (2) corporate, securities and tax, and (3) real estate, estate planning, and probate law. I perform a variety of tasks, one of which is to investigate, analyze, purchase and manage our word processing system.

We wanted high-quality equipment that used the latest technology, offered expansion capabilities for our growth and yet remained within our budget. We knew that finding this type of equipment would put us well on our way to successfully automating our office.

To Upgrade or Not To Upgrade

In 1984, the management of the firm foresaw the need for upgrading the document preparation equipment being used by the secretarial staff. Once our objectives were defined, the lengthy process of investigating different makes of the equipment began.

The **Fortune XP-70** was selected because of its expansion, multiuser and multitasking capabilities and the ease of working with Fortune:Word. Our office automation process started with three workstations, a Texas Instruments printer and a Diablo printer.

Within six months, four additional users were added along with the Hewlett Packard Laserjet printer and the Multiplan spreadsheet software package. As we continued to add additional users, it became necessary to purchase our second system (the Fortune SX 32:16) along with three additional printers.

Modems - The Next Step

Outside communications and networking was our next step. Communications via a modem to **WESTLAW**, a legal research database, was our goal. Communications via modem would reduce the on-line costs of WESTLAW by saving and downloading the attorneys' research materials onto the Fortune's hard disk and then printing this file while off-line. With this information on disk, we would also be able to convert the text from the standard ASCII format to the Fortune:Word format and incorporate this into a document being prepared by the attorney's secretary, saving the additional time required to retype the needed text.

The direct **Fortune to Fortune** link we established gives the secretaries the ability to access files on the other system. We have recently added the **BLAZER** software package which allows the operators to easily transfer files from one system to the other.

Both Fortune systems have direct communications with our Texas Instruments System. This is where our billing, time management, accounting and litigation support records are maintained. This communication allows the secretaries to run reports, enter and retrieve data, and prepare matters for billing.

Next Step - Formula Upgrades

By early 1987, both of our Fortune systems were configured at their maximum. Rather than adding a third system to the network, we would upgrade the Fortune XP-70 to the **Formula**. With the Formula's speed and design, the upgrade would be to our advantage along with upgrading our letter quality printers.

The remaining 10 users were added and the two Diablo printers were replaced with three Toshiba PAGELASER printers. These additions bring us to our present network configuration of twenty eight work stations, seven printers, two direct Fortune To Fortune communication ports on each system, two direct Fortune to Texas Instrument's communication ports on each system and one port dedicated for outside communications via the modem.

By early March, we will upgrade the Fortune SX 32:16 system to our second Formula. Once the Formula is installed, we will add the PC which will include a Hewlett Packard Series IID printer, a Compuscan Optical Character Reader and the **Ventura** desktop publishing software package.

It is our objective to have the ability to download Fortune:Word documents to the PC and work with them using Ventura to produce typeset quality documents. We also will then have the ability to scan documents to the PC and work with them using the Ventura software or download to the Fortune Formula to be used in Fortune:Word.

As you can see, the Fortune equipment is extremely versatile and allows the user continued growth. Fortune strives to be a leader in the competitive market by offering continued enhancements which can be used by their existing customers. I highly recommend Fortune systems and welcome questions and concerns from future customers.

A Word of Thanks

Before I conclude with our firm's success story, I would like to thank those persons whose hard work and dedication made this success possible. In-house thanks go to the staff members who assisted with defining our equipment standards, goals and objectives, and management for their continued support. Special thanks also goes to our SCI/Fortune dealer **Don Anderson** and his staff at **ACI Computer Sales and Service** for their knowledge, experience, and excellent training.❑

We Did It All On A Fortune

Using Pagemaker on the 5000

As most of our readers know, we are in our sixth year of publishing **/u/fortune** *news*. In many respects, we have come a long way in how we produce **/u/fortune** *news*. And recently, we took another big step in that we can now produce the entire issue on SCI/Fortune hardware!

The Old Days

Volume 1 Number 1 of **/u/fortune** *news* was a 3 page typewritten newsletter. It represented our initiation into the world of magazine publication. However, we wanted our "magazine" to have a more professional appearance so we decided to typeset the next edition. Volume 2 Number 2 was also three pages but represented a leap in technology for us because we actually went through the laborious process of typesetting and pasting up that issue.

Perhaps you can imagine what a *tedious* job that was. Our tools were razor blades, spray adhesive, black border tape, a ruler and one column of text. We would literally "cut and paste" that one column of text together so that a two-column newsletter would result, using black tape for borders and another type of tape to separate the columns. If we found a spelling error, we would have to re-typeset the entire article and then re-cut and re-paste it into place on our master - sometimes this cycle could take an hour.

We used this process through Volume 3 Number 5. Then we discovered the magic of "desk-top publishing" in the form of a **Macintosh** computer with the **Aldus Pagemaker** program. The difference in ease was phenomenal! We would do all the writing for the issue on our Fortune 32:16, then transfer the material to our Macintosh via **Kermit**. Once on the Mac, we would do some initial formatting with **MicroSoft** Word and then bring the article into a Pagemaker document. Once the issue was complete, we simply printed it out on a laser printer and brought the proofs to our printer.

The New Days

We continued with the above-mentioned process until Volume 6 Number 2 when we decided to use the **Fortune 5000** to typeset the entire issue. In fact, with the exception of a few graphic elements that we had to transfer from our Mac to the 5000, we used the 5000 exclusively. We still use the Pagemaker program but we use the **Dos** version which we run under **VP/ix** on the 5000. VP/ix is a Dos emulator which allows a 5000 owner to run many standard Dos programs.

We were able to do all of our writing in our favorite editing program right on the 5000. For one of us this is the **vi** editor and for the other it is **Fortune:Word**. In both cases, we are able to do much of the initial formatting in our document. For example, we can use the following attributes: **bold**, underline, and *italics*. We can do this because we have written a program which changes Fortune:Word attribute codes to **Xywrite** codes (Xywrite is a popular Dos wordprocessor). We chose Xywrite because Pagemaker will recognize Xywrite codes but will not recognize Fortune:Word codes.

Using Pagemaker on the 5000

Pagemaker on the 5000 works just like Pagemaker on any Dos machine with a few exceptions which are a result of VP/ix (i.e., not the 5000). The most noticeable difference is when one wants to print. On a straight "single-user" Dos machine, you simply instruct Pagemaker to print and it will send the information to the printer. Under VP/ix, the Pagemaker user must share the resources of the computer with other users. Thus, when you print, you wait until the printing is complete from Pagemaker's point of view and then you must issue a special command which instructs VP/ix to send this information to the Unix print spooler. This was the method that I used last month.

This month I set up a different process. I was able to instruct Pagemaker to send the printer output to a file. So whenever I printed something, a file called **output.prn** was created on my hard disk. When Pagemaker was done printing, I would switch windows to a Unix session and then type lp output.prn. In a few seconds, my laser printer would hum into action and I would see some Pagemaker output.

Ease of Use Increases Productivity

I do my **/u/fortune** *news* work using the console terminal of the 5000. Because of this, I can have up to 8 windows open at the same time. When I work on the magazine I usually have 3 windows going. One has my VP/ix session active with Pagemaker. The other two are Unix sessions that I use for writing, printing and planning.

The fact that I can switch from a Unix window to a Dos window is what makes the production of **/u/fortune** *news* possible on SCI/Fortune hardware. And because I can do everything on the 5000 my productivity is increased.

I have only touched on the tip of the iceberg with respect to how we used the 5000 to produce this issue. In future issues, we will continue to report on this exciting development.

Mark Palmerino

Introducing TWO New Disks!

And a new diskette pricing policy

We are unveiling two new software disks in this article. You will find in-depth explanations of what each of these disks contain under the headings 1) Unix Tools II and 2) C Tools. There are some exciting programs on these disks and many of our subscribers will want to add them to their Fortune arsenal. The following table shows that we currently offer 15 different disks that are jam-packed with useful programs and fun games for your Fortune computer.

Available Disks

- ❑ Fortune Utilities
- ❑ Fortune:Word Tutorial
- ❑ Unix Tools
- ❑ Ckermit
- ❑ Zip Tease Delight
- ❑ Ispell
- ❑ MacKermit
- ❑ Unix Tools II
- ❑ D.C. Grab Bag
- ❑ Unix|Stat
- ❑ Compressor+s Delight
- ❑ Editor+s Choice
- ❑ PC Kermit
- ❑ Chess, Yahtzee and more
- ❑ C Tools

It was almost four years ago that we set the prices for the disks in our Software Library. For four years those prices have remained stable. However, we regret the need to modify our diskette pricing in order to more accurately reflect today's costs for materials. The new prices, which are described in the following table, will be in effect for all orders taken after March 15, 1989.

Pricing Policy: Single diskettes cost $15. The following table, however, shows the discounts available for multiple orders. If you include payment with your order, please deduct $1.00 per diskette for a further savings. Note: The column marked Special shows special sale price for disks if you order by June 15, 1989. That is, you must include payment with your order.

Qty	Price	Special	Qty	Price	Special
1	$15	N/A	6	$69	$60.00
2	$28	$25.00	7	$77	$66.50
3	$39	$34.50	8	$84	$72.00
4	$50	$46.00	9	$90	$76.50
5	$60	$52.50	>9	$10/disk	

Unix Tools II

This disk contains programs that will be useful to everyone from the casual user of Unix to die-hard Unix junkies. The 13 programs included will be described under the following three general headings: 1) Office Automation Aids, 2) Shell and System Administration Helps, and 3) String Searching Routines.

I. Office Automation Aids

We include 4 programs in this section which will help you organize yourself and help you be more productive. The following are brief descriptions of these programs:

rs - a personal reminder system - **rs** is a program that allows you to keep yourself organized. It was written to be quite flexible and can be used to perform several organizational tasks including keeping a personal reminder list, an appointment and to-do list, a notes list and a phone number list.

Actually, **rs** is general in the sense that it can be used to manage any type of list you would like to keep. Reminders and appointments can be displayed every time you log into the system by placing the **rs** command in special login files (**.login** or **.profile**). And, **rs** can be run at anytime for an up-to-date look at your personal calendar. You can even make special appointments stand out on your terminal screen.

calend - print a calendar on your screen - **calend** is a program which works in a very similar fashion to the Unix **cal** program. If you type calend 6 1989 it will show you, on your terminal screen, the months of May, June and July of 1989. This is a quick and handy way of finding out on what day of the week a particular date falls.

ff - a fast text formatter - **ff** is a simple text formatter for flexible formatting of input files. Program options are used to control formatting. This is in contrast to text formatters like **nroff** (1) that require special format requests to be part of their input files. Besides avoiding cryptic format requests in text, **ff** is considerably faster than traditional formatters like **nroff**(1) and even simple formatters like **fmt** (1). There are many, many options to allow control of indentation, line width, line spacing, filling, pagination with headers and footers, line numbering, right justification, and some other things.

xref - a cross-reference builder - This is a handy little program that will produce a cross-reference listing of all the words in a file. The cross-reference output lists the word and the line numbers on which that word was found. This program would be useful for editing and modifying text.

II. Shell and System Administration Helps

In this section we include six different programs. Each of

these are well worth adding to the arsenal of anyone who writes shell scripts or who administers a computer system.

safe rm - retrieve a file after it has been deleted - There are two programs included here. The first is **rm**, which is designed to be a replacement for the normal Unix **rm**. It basically makes a copy of the file that is being removed in a safe directory before the file is deleted. The second program, called **unrm**, will try to "undelete" the file. These programs, if implemented properly, can be the often sought after answer to the user who comes to you and says, "I accidentally deleted a file, can I get it back?"

date - a formatted date program - The Unix **date** program on the Fortune 32:16 and Formula simply output the date. The version on this disk, like many implementations of **date**, allow you to modify the output of **date** with C-like output codes.

printf - echo with printf output codes - This command is meant to be a replacement for the **echo** shell command. It allows the user to format the output using *printf* codes. This statement gives the shellscript writer much greater control over the output of information.

shar - create shell archives - Much information in the Unix community is distributed in the form of a "shell archive." **shar** will take a list of files and bundle them into one big file which can be transported to any other Unix system. Once at the other Unix site, you simply *unshar* it by running the Unix shell on it. In other words, the shar process creates a Unix shellscript that, when executed, breaks itself up into the original files.

rpt - repeat a command many times - **rpt** is used to repeatedly execute a Unix command as many times as you like. This capability is often useful when trying to find out what is happening on your system. For example, you could repeatedly run the **ps** command to see what processes are being spawned or you could repeatedly run the **who** command to see who is logging in and out.

choose - randomly choose lines from a file - **choose** is another useful tool in the right circumstances. This program will choose a line or lines at random from an input file. One possible use of **choose** is in the construction of a fortune cookie program. Put many one-line sayings in a file and run **choose** on that file.

III. String Search Programs

This group of programs have in common the ability to find all the occurrences of a word in a file. In this sense, then, they are "grep" like programs. (**grep** is the standard Unix string search program). Each one, however, is fancier than **grep**.

hgrep - highlight the found word - This program does the same thing as **grep** except it *highlights* the word as it is displayed on your screen. Seemingly a simple addition, this capacity is very helpful when the search string occurs often in a file.

wns - give a "window" of lines around the search string - Again, **wns** is similar to **grep**. However, where **grep** just outputs the line in which the search string appears, **wns** will output some number of lines around the line that contains the search word. This is essentially a **grep** which provides some context around the search word.

qsubst - query and substitute one string for the search string - *This is definitely a winner!* It combines the best capabilities of **grep** and **sed** so that you can replace one string with another string. Not only that, but the program will list out where the search string is found and allow you to choose to replace, or not replace, this particular occurrence of the string. This is definitely a tool every Unix user should have!

This disk is available for the 32:16, Formula 4000 and 8000 and the Fortune 5000 computer. It also contains all the C-source codes for these programs.

C Tools

This disk contains almost a megabyte of C-programs and C-source files that should help the Fortune C-programmer be more productive. In our discussion, we divide the disk up into two areas: 1) C-programs and 2) C-source files.

I. C-Programs

In this section we describe four programs that should help the C-programmer make *fewer* programming mistakes and help him or her *find* the mistakes when they are made.

cxref - C-program cross-reference program - **cxref** reads the named C source files and produces on the standard output a cross reference of all the identifiers and constants in the files. Constants are integer constants (12, 0421, 0x1A), floating point constants (123.45, 0.2e-4), string constants ("this is a string\n"), and character constants ('a', '\033'). Identifiers, character constants, and string constants are sorted lexicographically, i.e. according to the machine collating sequence (7-bit ASCII on the Vax or the Pyramid). Integer and floating point constants are sorted numerically. The trailing 'l' or 'L' on long integer constants will not show up in the output listing.

scpp - Selective C Pre-Processor - **scpp** concatenates the input files (or reads standard-in, if no file is given), interprets all references to given macros, leaving the rest of the file(s) unaltered, then writes the result to standard-out. It is helpful in removing conditionally compiled code or misleading macros from a file.

check - Checks for mistakes lint will miss - **check** attempts to find possible errors in C programs. It does not duplicate or replace **lint** but finds some constructs about

which **lint** is silent. Among the things that are detected are nested comments, unterminated comments, assignments in conditional contexts, if statements with null then and no else, and potentially ambiguous else statements. For each such construct a warning is given, identifying the source file and line number where it occurs.

printfck - Check printf statements - **printfck** reads the C-program source from the named files (or standard input if no arguments are given) and determines the types of the arguments to **printf**(3S) and **scanf**(3S) according to the given format string. It writes to standard output a modified version of the program, where the **printf**() or **scanf**() arguments are turned into calls to dummy routines.The routine **percent_s**() is defined within the modified program to be a function requiring a pointer to a character, so **lint**(1) can now check that variable x does indeed have the appropriate type.

II. C-source Code

This section contains a wealth of C-source for some very commonly used C-subroutines. Besides being educational (did you ever wonder how **strtok** worked?), they could be the difference between being able to compile or not compile a C-program you have. In addition, many C-programmers will re-invent the wheel - but there is no need to here...

strings - C-source for string routines - This is a virtually complete set of C-source code for all the string routines you'd ever care to know about! The following is a list of all the programs included:

_c2type.c	_str2map.c	_str2map.h	_str2pat.c
_str2pat.h	_str2set.c	_str2set.h	ascii.h
bcmp.c	bcopy.c	bfill.c	bmove.c
bzero.c	ctypes.dem	ctypes.h	ffs.c
getopt.3	getopt.c	int2str.c	xstring.3c
memccpy.c	memchr.c	memcmp.c	memcpy.c
memmov.c	memory.h	memrchr.c	memrev.c
memset.c	memtrans.c	str2int.c	strcat.c
strchr.c	strcmp.c	strcpack.c	strcpbrk.c
strcpy.c	strcspn.c	strctrim.c	strend.c
strfield.c	strfind.c	strings.h	strkey.c
strlen.c	strmov.c	strncat.c	strncmp.c
strncpy.c	strnend.c	strnlen.c	strnmov.c
strnrev.c	strnrpt.c	strntran.c	strpack.c
strpbrk.c	strpref.c	strrchr.c	strrepl.c
strrev.c	strrpt.c	strspn.c	strsuff.c
strtok.c	strtrans.c	strtrim.c	strxcat.c
strxcpy.c	strxmov.c	strxncat.c	strxncpy.c
strxnmov.c	substr.c		

emitc - C-source time function - The call converts a 25 character string (in the following form: Fri Apr 22 09:45:15 1988\n), pointed to by a long integer representing the time in seconds since 00:00:00 GMT, January 1, 1970, and returns that value.

malloc - malloc, free, realloc - memory allocator - malloc and **free** provide a simple general-purpose memory allocation package. **malloc** returns a pointer to a block of a specified number of bytes beginning on the boundary of the most stringent alignment required by the architecture. The argument to **free** is a pointer to a block previously allocated by **malloc**; this space is made available for further allocation, but its contents are left undisturbed. **realloc** changes the size of the block pointed to by **ptr** to size bytes and returns a pointer to the (possibly moved) block. The contents will be unchanged up to the lesser of the new and old sizes.

getpw - public domain getpwent(3) routines - These routines return a pointer to an object with the form as defined in the **pwd.h** include file. Thus, the information includes account name, password, uid, gid, comment, home directory and shell. The **getpwent** function when first called, returns a pointer to the first **passwd** structure in the file; thereafter, it returns a pointer to the next **passwd** structure in the file; so successive calls can be used to search the entire file. The **getpwuid** searches from the beginning of the file until a numerical user id matching **uid** is found and returns a pointer to that information. **Getpwnam** searches from the beginning of the file until a login name matching **name** is found and returns a pointer to this information.

complex-lib - complex arithmetic operations - These routines perform arithmetic and other useful operations on complex numbers. An appropriate data structure complex is defined in the header file; all access to complex data should be via these predefined functions.

This disk is available for the 32:16, Formula 4000 and 8000 and the Fortune 5000 computer. It also contains all the C-source codes for these programs.

Note: Last month SCI/Fortune included a survey in **/u/fortune** *news* in the hopes that our subscribers would take the time to fill out this survey and send it back. We heartily encourage every reader to do this so that SCI/Fortune will know how *you* feel about their products. If you don't take the time to fill out their survey, then you can't blame them for not being responsive!

Fill out that survey today!

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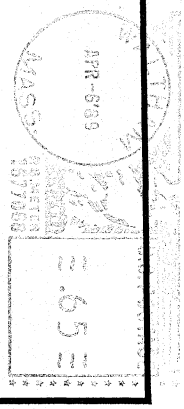

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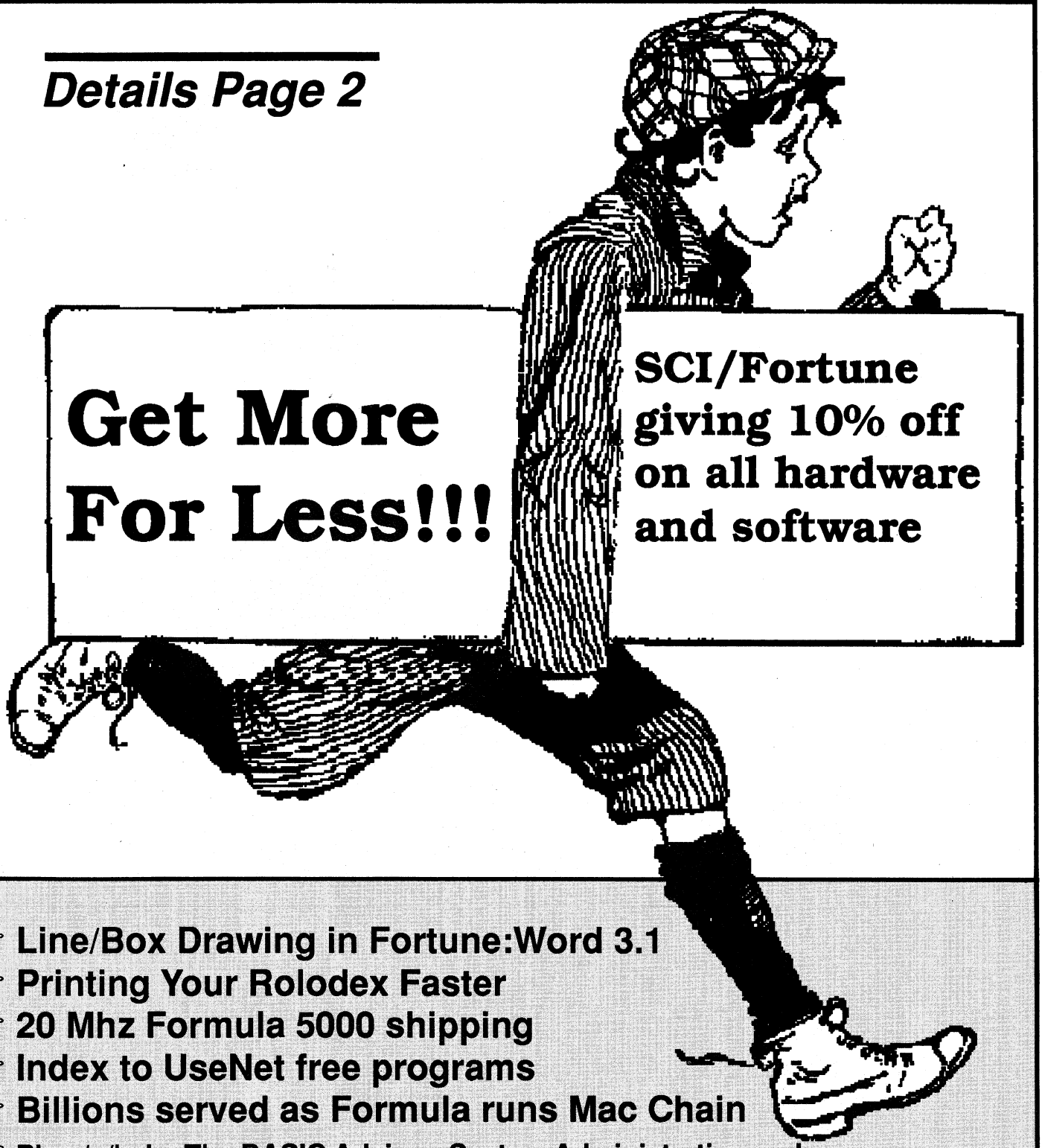
The Newsletter for Users of SCI/Fortune Computers April1989 / Volume 6 Number 4

Details Page 2



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/u/fortune *news*

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CONTENTS

From The Editors...

On 10% Off And Advertising

As you can tell, this is a very special issue of **/u/fortune** *news*. Besides being much larger than our regular size (40% larger to be exact), this issue contains a generous offer from SCI/Fortune in the form of a **10% off coupon**.

As is explained on page 2 in SCI/Fortune's ad, this coupon can be used by any recipient of this issue of **/u/fortune** *news* and is good for any purchase made by June 30, 1989. You can receive 10% off on any hardware or software you purchase from a Fortune dealer. We don't have to tell you that this could *easily* amount to the subscription price of this magazine. In fact, it will probably amount to **hundreds**, if not **thousands** of dollars in savings for YOU! (Again, page 2 gives you some examples of the savings you could receive).

This is clearly a gift from SCI/Fortune to its loyal customers and it is a way of thanking you for being part of their family.

However, we, at **/u/fortune** *news*, also view it as a test! It is a test of the type of subscribers we have. We have often boasted to SCI/Fortune that our subscribers are the *"cream-of-the-crop"* when it comes to Fortune owners. And, we feel that you are the ones who want to get the most out of your machine. Well, now is your chance to improve your machine in many ways - and save bundles doing it! So, we heartily encourage our readers to take advantage of this generous offer from SCI/Fortune.

Where Should You Redeem Your Coupon?

We want you to use your coupon as soon as possible. And we have one more request to make: If at all possible, use your coupon at one of the dealers that have advertised in this issue of **/u/fortune** *news*. Why? Well, we are partially supported by the advertising revenue that this publication generates. In one sense, then, every subscriber owes a bit of thanks to the advertisers that use **/u/fortune** *news* to promote their products and services. Thus, the advertisers subsidize your subscription to this magazine.

In addition, the advertising serves as an important source of information for you, the Fortune owner and user. When you need a certain product or help from a dealer, you can always turn to **/u/fortune** *news* to find that help! So, we ask that you would give favor to those advertisers that use **/u/fortune** *news* when you purchase any hardware or software and especially when you use the coupon! Furthermore, be sure to tell them that **/u/fortune** *news* directed you to them. In order to make your decision easier as to where you should use your coupon, we have listed the advertisers that appear in this issue and the page on which their ad appears.

Alphabetical Listing of Advertisers

The BASIC Advisor

The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSIC Software Corporation which is located in Baltimore, Maryland.

Question: *As you know, the last version of BASIC available for the 32:16 Fortunes is 6.5.12, and now that I am upgrading to a Formula. I understand I will be using 7.3.4 BASIC from Thoroughbred. What can I expect from the new BASIC that I do not get with 6.5.12?*

Answer: The 6.5.12 BASIC was a product released by Science Management Corporation (SMC). The old Fortune Systems Corporation, following its usual practice of sticking its fingers into any available icing, altered, streamlined, and polished the product to the point that it was unrecognized (and unsupported) by SMC. In the meantime, SMC was creating version 7 of BASIC for the AT&T 3B machines. This interpreter was written in "C" language, and the first release proudly passed all of the stringent "Quality Assurance" tests to which it was subjected. But for strange and unknown reasons, it proved to be a nightmare in the field with reported "bugs" arriving daily. Subsequent releases of version 7 were free upgrades designed to correct these "bugs". These were 7.1, 7.2, 7.3, 7.3.1, 7.3.2 and 7.3.3. On some systems, including Fortune, 7.3.4 is the final product; other computers may need a 7.3.5 upgrade. Sometime during this fiasco, the Thoroughbred products were purchased by Concept Omega Corporation. (I am sure they were pleased with their purchase). At this time BASIC seems to be error-free. What's more, the new owner of Fortune Systems (SCI) seems to be overcoming the old habit of fixing unbroken software. I guess we are finally safe and properly supported.

We discussed the 7.2 BASIC in the October, 1988, issue of **/u/fortune** *news* (Volume 5, Number 10). The major new feature for us was the ability to protect program code with the ENCRYPT and PSAVE directives. Also, the level 7 versions of BASIC were the first steps to 4GL for Thoroughbred. (Thoroughbred's 4GL products were covered in our last article: see **/u/fortune** *news*, The BASIC Advisor, Volume 6, Number 3.)

Version 7.3 was officially introduced at the 1987 Thoroughbred Dealer's Conference. The major improvement over version 6 and other releases of version 7 was speed and performance:

Integer ADD, SUBTRACT and MULTIPLY: 25% faster
Integer DIVIDE: 9% faster
OPEN/CLOSE sequences: 24% to 28% faster
OPEN/LOCK/UNLOCK/CLOSE sequences: 8% to 16% faster
GOTO, ON . . GOTO and substring testing: 28% faster
GOSUB/RETURN: 54% faster
FOR/NEXT loops: 54% faster

Another objective of the newer BASICs is to provide the ability to read sequentially both forward and backward in a DIRECT or SORT file. In earlier BASIC releases the KEY value points to the next sequential Key in a file:

```
10 OPEN (1) ''filename''
20 LET K$=KEY(1)
30 PRINT K$
```

In this example, K$ is set to the value of the first Key to the file "filename." (OPENing a file automatically sets the key pointer to the beginning of the file). New system variables will be provided to immediately access the Previous Key (PKY), First Key (FKY) and Last Key (LKY):

```
10 OPEN (1) ''filename''
20 LET K$=LKY(1)
30 PRINT K$
```

This time K$ is set to the value of the last key in "filename". We can now read the file backwards with PREAD or PEXTRACT (READ or EXTRACT the previous record in file). In order to implement this feature, it is necessary to expand Error 2 (End of File) to occur at the beginning as well as at the end of the file. The following code will bomb out with an Error 2 at line 30:

```
10 OPEN (1) ''filename''
20 LET K$=KEY(1)
30 LET P$=PKY(1)
```

The Error 2 is eliminated when the end of file condition is processed elsewhere in the program:

```
30 LET P$=PKY(1,END=40)
40 END
```

(For those of you who have noticed that the above program does nothing except allow the computer to play with itself, let me emphasize that this is an example only.)

Most of the other 7.3.4 features involve corrections for previous releases, but I am sure you will find many new tools to assist your third generation programming efforts.

Question: Is it worth my while upgrading my business applications (BAS on the 32:16) to the current version of Thoroughbred's accounting?

Answer: Not unless you are expecting them to run in the IDOL-IV environment. If you have extensive modifications to the original coding, you are better off keeping what you have and forgetting IDOL-IV. For one thing, each program in the system would have to be searched and modified to interact with IDOL-IV system variables. A good example of one of the problems you will encounter is the X$ variable. In IDOL, the terminal date is stored in X$ at position 31, whereas IDOL-IV puts it at position 30. Also, you will have to include a CALL statement at the beginning of each program which initiates an application so that certain IDOL variables such as Z8$ and Z0$ can be formatted. (The required public program is provided free as a part of IDOL-IV.)

It took Concept Omega many months of work and two releases before the Thoroughbred Accounting applications (formerly BAS) were working properly with IDOL-IV. And in spite of all the effort, the documentation is still just as lousy as ever. In fact, rumor has it that since the acquisition of the ADD+ON Accounting System by Thoroughbred, the original BAS applications are going to be phased out completely. At this time, there is no plan to improve them.

I must add that we have heard from some Thoroughbred Dealers who are questioning the sanity of this proposed move by Concept Omega. Many successful vertical software packages have been structured around the old applications. Do you suppose Concept Omega will just throw them away?

Does anybody want to buy a duck?

There also was a rumor going around several months ago that Thoroughbred had developed a new set of accounting applications with 4GL. We recently had a chance to examine these SCRIPT-IV beauties. What a mess! It looked as if some Business BASIC programmer with little grasp of SCRIPT-IV and less grasp of structured programming techniques had gone berserk. Now we hear that Concept Omega has abandoned them and is planning to start over again. I, for one, am eternally grateful.❑

System Administration: Part 24

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

It seems only yesterday that we started the SYSTEM ADMINISTRATION series and yet we note that this is Part 24 - which means it has been two years now. One of the things that is hard to measure is whether you, the readers, feel that the information provided in these articles is helpful and worthwhile. We would appreciate your comments and suggestions on expanded topics we can include in future articles. You are also always welcome to send follow-up questions on material we have discussed. For those of you that have purchased the Fortune 5000, we are interested in whether future articles should address SCO Xenix and Interactive Unix. Please send your comments, suggestions and questions to:

David E. Kloes
Uni-Komp
5715 N. W. Central Dr.
Suite F112
Houston, Texas 77092

In this issue we will, as promised, complete our tour through the For:Pro directories. The last two sub-directories in "/usr" that we need to discuss are "/usr/tmp" and "/usr/ucb".

/usr/tmp

The "/usr/tmp" directory is another temporary directory (in addition to the "/tmp" directory). This directory is usually empty and is most commonly used by software application programs to store files temporarily while the application software is running. There are too many application programs out there to talk about any specific one that uses this directory. As the System Administrator, you should be concerned about "junk" or old files that can accumulate here. For example, some application programs do not do a very good job of cleaning files out of this directory after users are finished running the application program. Files can also get "stuck" here if you have a power failure and the program did not have a chance to remove the temporary files.

There are a couple of things you can do to check for files in this directory that need to be removed. First of all, make sure that no users are on the system so that you know that application software is not currently being used. Then change directory to the "/usr/tmp" directory and do a long list (`ls -al`). If there are no files there, then you are finished. If you find files, look at the date and time of the files. This is a good way to identify old files that have accumulated over time. Sometimes you can tell from the file names what application program is using this directory. As far as we know, none of the standard Fortune application programs use this directory. If you have other third party software that is being used on your system - check the documentation to make sure you are not removing any required files.

If you are unable to identify what the files are used for, you can copy them to another directory or to a diskette and then have your users go about their daily business. If you don't receive any error message from your application software for a couple of days, then the files can probably be removed. We have seen some third party software that use up a lot of disk space by not clearing out this directory.

/usr/ucb

The "ucb" in "/usr/ucb" stands for the University of California at Berkeley. Over the years, this university has been very much involved in expanding the capabilities of Unix. They have written many new utilities for Unix, many of which have

been incorporated in versions written by various companies. For:Pro, in fact, is based on Version 7 Unix which was written by UCB and is an expanded version of the original Unix operating system written by Bell Laboratories.

For those that are interested, the latest version of Unix from AT&T is referred to as System V. UCB is also continuing to enhance its version 4.x (where "x" is the current level number). In addition, we have SCO Xenix V (soon to be called SCO Unix) and others such as Interactive Unix. Other manufacturers have their own name for Unix such as AIX (IBM) and HPUX (Hewlett Packard). As you already know, Fortune's version is called For:Pro.

As you can see, there are many versions of Unix. One article we read recently in the Wall Street Journal indicates that Unix will be the predominant operating system with over a 40% share of the computer market by 1992. One of the "hits" that Unix has been taking is that there are too many versions. While over 80% of the commands function the same from one version to another, the 20% difference has some people concerned that Unix should be more "standard". Over the last couple of years there has been a strong attempt by the computer manufacturers to standardize Unix. Although everyone agrees that there should be a standard version of Unix, not all agree on whose version should be standard. Today, the manufacturers have split into two groups that are trying to set the standard. It remains to be seen which group will win the standardization battle.

Another concern is that there should be "binary compatibility" from one machine to another. Basically, this means that you should be able to take your software from one version of Unix to another and have it run. As you know, you have invested a lot of money in the software applications you are using. If you should decide to purchase other hardware, it would be nice to know that your existing software will run on that machine to secure your software investment. By standardizing Unix, hopefully over the next couple of years, this can be achieved.

Enough Unix philosophy. The "/usr/ucb" directory contains other For:Pro commands that were written by UCB. If you do not have the "Development Utilities", you will find at least four commands in this directory:

more

The "more" command can be used to look at long files a screen at a time. To look at files, the syntax would be:
`more <filename>.`

After the command is executed, you will see the first screen of the file followed by a "prompt" at the bottom of the screen: **--More--(1%).**

The "1%" tells us how much of the file we have looked at so far. A more verbose way of using "more" would be to use the "-d" option:

```
more -d <filename>
```

Now our prompt would be:

--More--(1%)[Press space to continue, <CANCEL> to abort]

In either case, to view the file a line at a time, depress the <RETURN> bar. To view the file a screen at a time, depress the <SPACE> bar. You can also depress the "h" key (for help) and a screen will be displayed of many options that can be used with this command. For example, you can search for a specific pattern or word by entering a "/" followed by what you are searching for. You can also go to the For:Pro prompt by entering a "!". When you enter Ctrl-d or "exit", you will be returned to where you were when you left "more". You can invoke the "vi" editor while the "more" command is being used. There are also many options for scrolling and skipping forward in the file. The only thing you can't do is go backwards. When you get a chance, look at some of the options. You would be surprised what a useful utility the command is.

We can also use the "more" command with a pipe (|) to look at listings a screen at a time: `ls -al | more.`

Piping output to "more" can be used with many of the administrative commands that we use. Here is another example where we pipe the output of the "ps" command to "more": `ps -al | more.`

The "-v" option to the "cat" command will let us look at files that have control characters in them. If we wanted to view a file of this type a screen at a time, we would enter:
`cat -v <filename> | more.`

page

On some versions of Unix, there is a "page" command that works similar to "more" but has some differences. Unfortunately, on the Fortune system, the "page" command is linked to "more." Therefore you can use either command to produce the same result.

vmstat

The "vmstat" command (virtual memory statistics) can be used to look at a number of different parameters involving memory usage. For those that are interested in this kind of thing, here is an example:

```
# vmstat -s
       37 swap ins
       31 swap outs
     1364 pages swapped in
     1126 pages swapped out
    39693 cpu context switches
    80978 device interrupts
        0 traps
   160678 system calls
```

This command is not used much in the everyday operation of

Software For The Fortune 32:16 And Formula

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your system. It could be used, for example, to try to isolate problems in system performance.

tset - The "tset" command is used to set terminal modes. One particular use of this command is to prompt a user on login for their terminal type. This is especially useful when you have a port that is accessed by several different terminal types (i.e. a modem port). You would use the following command line in the ".profile" or "/etc/profile" file to do this:

```
# eval `tset -m fos:fos -m ;\?fos -r -s -Q`
TERM = (fos)
```

After this command is executed, the cursor would be after the (fos). If the user depresses the <RETURN> key, the default terminal type "fos" (Fortune) is accepted. Otherwise, a user may enter any valid terminal type code listed in the "/etc/termcap" file. In the command line, you could substitute "fos" for whatever terminal type you want to be the default type. Whenever the <RETURN> key is entered, the following line would be displayed: **Terminal type is fos.**

If another terminal type is entered, the same line is displayed with whatever terminal type was entered. The net result is that the "TERM" and "TERMCAP" variables are set based on the terminal type that is entered.

For those of you that do have the "Development Utilities", here are some of the other commands that are found in this directory:

clear - The "clear" command is used to clear your terminal screen. This command is useful when you are writing shell programs and need to clear the screen.

compact - This command is used to compress files. If you have some large files that you wanted to compress to conserve disk space, you would use this command. It is also useful to compress files that are going to be archived onto a diskette or tape. (If you don't have the "Development Utilities" and you would like a compression program, then you can request the **Compressor's Delight** Diskette that the Cambridge Consortium distributes. See page 2 for more details).

uncompact - This command is used to uncompress a file that was compressed using the "compact" command. A file would have to be uncompacted before it could be used.

ccat - This command is used to look at compacted files without having to uncompact them.

ex - This is an enhanced version of the "ed" editor.

expand - This command is used to convert tabs to spaces in a file. If you have file that you want to sort or manipulate, tabs can cause problems. This command would be used to replace the tabs to spaces to prepare files for use with other commands.

unexpand - This command would be used to unexpand a file that was expanded using "expand". Basically, it would put the tabs back into the file.

fold - This command would be used to set the maximum width of lines in a file. If you were printing on a printer that was 80 columns long but your text was longer than 80 characters, "fold" would allow you to set the print width of the file to 80.

head - This command is like the "tail" command except it lets you look at x number of lines from the beginning of a file.

num - This command numbers the lines in a file. If we had a 100 line file, for example, entering `num <filename>` would number the lines from 1 to 100. This command functions the same as the "-n" option of the "cat" command.

printenv - This command would print the environmental variable(s) that have been set. A "printenv" by itself would print all of the variables. This basically function the same as the "set" command. You can also follow the command with the name of the particular variable you are looking for.

reset - This command is used to reset your terminal to a "normal" state if it gets confused. This usually happens when you are dialed in over a modem.

strings - For those that are interested in looking at the ascii text that can be found in binary files, this is the command to use.

ul - This command will convert underscores to underlines for whatever terminal type you are using when the command is invoked.

users - This command will give you a list of names of the users currently on the system.

vi - "vi" is a screen editor. It is used to create or modify files on your system. While it could be (and is by some) used for a word processor, its intended use is to create or modify system files. Once you try it, you will probably never use "ed" again unless you have to. Over 200 control sequences can be used to manipulate text in addition to using your cursor keys.

whoami - This command will return your login account name. Since it functions the same as the "USER" variable, it is not used often. It does, however, give the correct user name if you have used "su" to substitute yourself as another user - something that the "USER" variable does not do.

As promised, this concludes our "walk through" of the major directories that are on your system. In the next issue, we will talk about how to come in the "back door" on your system. If you don't know what that means, you will have to wait for the next issue. You would be amazed at what you can do when you go through the back door.❑

News From and About SCI/Fortune

User Surveys Continue to Roll In

Editor's Note: *The following text was sent to us from Cindy Morey of SCI/Fortune...*

On behalf of SCI/Fortune, I would like to thank all of the users who have sent in the user survey form as printed in the February edition of **/u/fortune** *news*. I have received an overwhelming response so far, and responses are still continuing to roll in every day. I am passing your requests on to a Fortune dealer and/or to one of our sales people who will be getting in touch with you directly to meet your needs.

Your input has given us an excellent opportunity to introduce ourselves and get in touch with you, so that we may discuss your level of satisfaction with our products and support. It also gives us an opportunity to work more closely with our dealers to help them respond to your needs.

For those of you who are not currently being supported by an SCI/Fortune dealer, these survey forms now give us a better understanding of the areas that need to have more dealer coverage.

Due to the overwhelming rate of return, it may be a few weeks before you have heard from a dealer, sales person or me, but each respondent can expect to hear from one of the above.

If you have not sent in your survey form, please do so as soon as possible. Thanks again for your interest and participation. Your input is very important to our business.

Editor's Note: *We also heartily encourage all of our readers to send in the survey that appears in the February edition of* **/u/fortune** *news. Here is a very good way to contact SCI/Fortune and let them know what <u>your</u> needs are!*

SCI/Fortune Offers a One Year Warranty on the Fortune 5000

SCI/Fortune will offer a <u>full</u> One Year Warranty for all Fortune 5000 systems and hardware effective for all systems and parts sold after March 15, 1989. The following text from SCI/Fortune explains this warranty in a little more detail.

We consider our resellers to be our first line of support and service to the end user. To meet this responsibility, our resellers typically provide all types of on-site customer support, including warranty replacement service. Some resellers, though, may choose to refer their customers to another source for service needs. In either case, our warranty policy

protects the end user in the same manner. Our warranty program provides that, during the warranty period, SCI/Fortune will repair or replace qualified warranty failures on Fortune 5000 systems and parts. This warranty is handled as depot to SCI/Fortune in San Carlos, facilitated through authorized SCI/Fortune dealers and through third party maintenance organizations, such as Bunker Ramo.

A customer may choose to contract with the dealer or with a third party maintenance organization for higher level on-site support, for which the customer would pay an additional fee and receive more service. Maintenance contracts are also available to the customer; Bunker Ramo has announced a plan to provide optional extended service of one, two, or three years duration beyond the warranty period.

Fortune 5000 20MHz System Available

The Fortune 5000 is now available in a 20 Megahertz (MHz) version. Operating 25% faster than 16 MHz systems, the Fortune 5000 386/20 incorporates the following standard features: 1) Vertical cabinet supporting a maximum of 5 half-height devices, 2) 1.2 MB 5.25 inch flexible diskette drive, 3) Enhanced 101-key keyboard, and 4) 250 watt power supply.

The system motherboard features the Intel 80386-20 Microprocessor. The design of the motherboard includes the incorporation of many additional features which eliminates the need to purchase additional system controllers. The 32-bit Zero Wait State Memory Board provides 4 MB of dynamic random access memory, expandable to 8 or 16 MB. Hard disk drives are available in 70MB, 150MB, and 322MB (formatted) sizes.

SCI/Fortune Distribution Center Commits to Five Day Order Turnaround

SCI/Fortune's "Distribution Center" concept is really proving successful. Two significant steps in meeting our goal included the implementation of 1) our one-stop order processing and 2) the consolidation of all SCI/Fortune Sales Service Order Processing in San Carlos, CA.

Now, **John Stanfa**, Manager of Support Services, Manufacturing and Distribution (also known as Parts Distribution Center), says that he has "on the shelf" virtually every product listed in the current SCI/Fortune Price List...and further, he says his team of professionals can ship systems and other products within five working days of receipt of a hard copy purchase order! (Large quantity orders may take additional time.)

During those five days, systems will undergo a minimum of 72 hours of diagnostic run-in, final system test, and several quality assurance inspections. This process is intended to ensure that all our products meet or exceed SCI/Fortune's high quality standards.

Another service, known as the Hardware Configuration Service, offers an easy and inexpensive way for you to order systems factory configured and tested, exactly the way you want them - with extra memory, a math coprocessor, serial port controller, etc. - all for one low net price on the service.

John is rightfully proud of his team at the Distribution Center. With a combined total of more than 118 years of Fortune experience alone, this group knows the products, and works to provide the best quality possible to our resellers and customers.

Intelligent 8-Port Controller for 5000

SCI/Fortune announces the release of an intelligent 8-port controller for the Fortune 5000. Up to four Asynchronous Communications Engine (ACE) controllers may be installed in the system for a total of 32 ACE ports. The ACE controller ports can be driven at baud rates up to 38400 baud.

The ACE controller utilizes an Intel 80186 microprocessor along with 64 KB of RAM to create a zero wait state computer subsystem dedicated to managing the serial ports. Jumpers on the ACE controller allow relocation of the controller's base address to any 64 KB segment within the 16MB memory arena.

The ACE controller and its associated software drivers make it possible to share interrupts across multiple controllers in the AT bus. For example, ACE controllers and a tape subsystem can all share a single interrupt line. In addition, the ACE controller's interrupt line can be reconfigured, and includes the rarely utilized "higher" AT bus interrupt lines.

The ACE controller comes complete with a fanout adapter the provides eight RJ45 modular jacks to bring eight serial lines out the back of a single controller slot opening.

A maximum of four ACE controllers may be installed in systems containing less than 16 MB of RAM. Because of the memory architectures of many AT compatible 80386 based machines, only one ACE controller may be installed in a system containing 16 MB of RAM. The ACE controller is unique in that it can be configured to operate in a system with 16 MB of RAM.❑

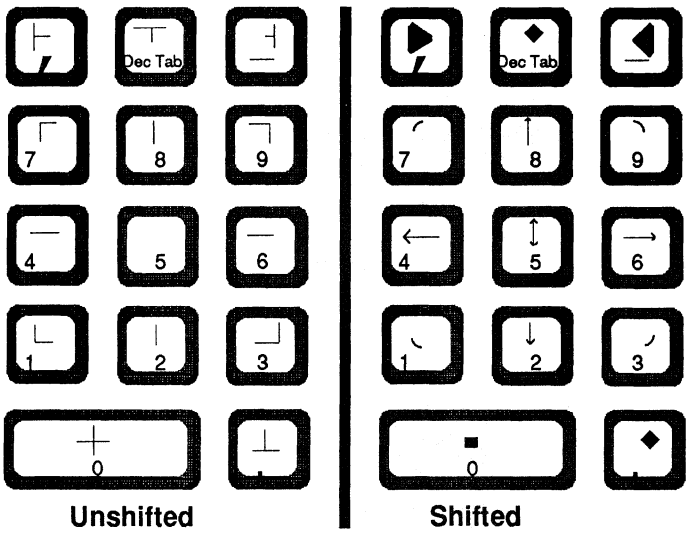
Drawing Conclusions With Fortune:Word

Or "What Box & Line Drawing Can Do for You"

You may have noticed that we often highlight certain things in the newsletter with boxes or rules. This draws the readers attention to things we think are important. Boxes are also useful for organizational charts, flow charts, etc. In general, they provide a graphic element to make your work more interesting to look at.

The newest version of **Fortune:Word (3.1)** has special built in functions to make it easy to draw boxes and lines. To access the drawing mode, you press the COMMAND key, and followed by the letter "d". In Fortune:Word's characteristic style, you'll be asked "Draw what?". Unfortunately, you can't just enter the word "house" or "tree" or "Mona Lisa" at that prompt -- those features won't be available until the update with the mind probe is released. But don't be discouraged, it's really quite easy to draw lines and boxes using the numeric keypad on your keyboard. Fortune:Word is very clever about knowing where to put lines, and how to adjust for spacing and tabs. Each key on the keypad

Figure 1. Keypad Drawing Symbols



represents part of a box or line. These shapes are shown in Figure 1.

When the "Draw what?" message comes up, you just start hitting the keys, and you'll see the box begin to take form. Start with the upper left corner, which is number 7. Move to the right with the 6 key, and finish the line with the 9 key, which is the upper right corner. Notice that when you hit the number 9, the cursor automatically drops down directly below the right corner, padding out any spaces if necessary. You can continue around the box with the number 2, then the bottom right of the square which is number 3. Again the cursor automatically moves in the direction that you are drawing. To get back to the left you'll use the 4 key, followed by the 1 key for the bottom left. To close the box use the 8 key.

As you see the box appear on your screen, notice that the characters that make it up are similar to normal Fortune:Word characters in the way that they behave. For example they can be typed over, and if you insert (in the insert mode) some text into a block inside of a box, it will push the right side of the box over.

As mentioned above, when a box is drawn it may be necessary to pad out lines with spaces or tabs since Fortune:Word doesn't let you type to the right of a RETURN marker. The exception to this is in the line drawing mode, where Fortune:Word anticipates where you want a box to go, and makes the necessary adjustments. This is quite impressive to watch, and extremely helpful.

How the lines are printed

When Fortune:Word goes to print your boxes and lines, it uses instructions in the wheels files to know how to draw the

lines. Each character must be defined, e.g. there must be a character for the upper-left corner of the box, the horizontal lines, etc. Most letter-quality printers like a NEC, Qume or Diablo don't have symbols that represent the corners, so you'll probably have to settle for a plus (+) sign. Horizontal lines could be either dashes or underlines, and vertical lines are probably best done by the pipe symbol. If you have a dot-matrix printer, you may have some more flexibility. The best results are achieved with a Hewlett-Packard LaserJetII which has the line drawing characters built in. Older LaserJets will work with the Y font cartridge.

The other restriction is that the boxes only work with fixed-character fonts, such as Courier or Prestige Elite. Proportionally spaced fonts such as Times or Helvetica will throw the spacing for the lines off.

In order to print the lines, you'll probably have to alter your wheels file. On a 32:16, 4000 or 8000, the wheels files are in the /usr/lib/wheels directory. On the Formula 5000, you'll find them in /usr/lib/wheels also. If they're not there, you may have to load them off of your glossary diskette. Figure 3 contains the modifications you'd make for a LASERJET printer.

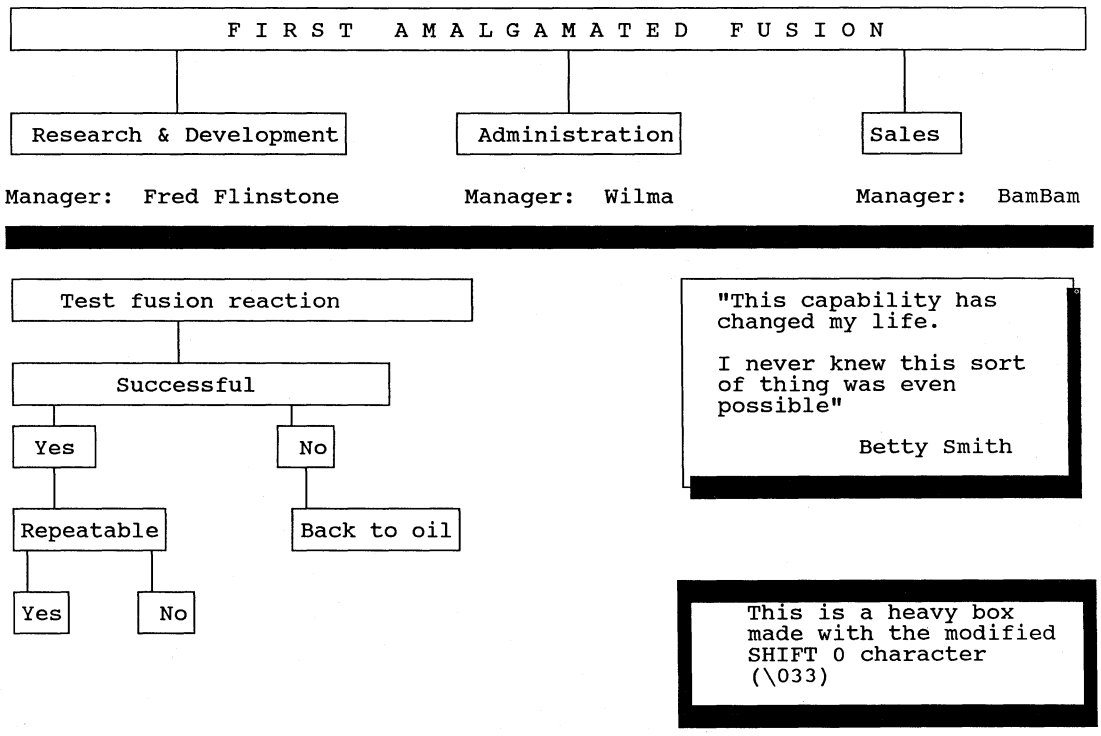
Note that there are three columns of information in the wheels file. The first column is the character that actually appears in your Fortune:Word document. The second column is the string that will actually get sent to your printer. If you look in the HP manual, you can decipher the character that will get printed. In theory, it might be possible to actually program in a string to print using periods on a letter quality printer, or graphics characters on a dot-matrix. The third column is simply a description of the entry on that line.

To use this wheel information, you'd just copy it into the file called /usr/lib/wheels/hp.whl (assuming you have a Laserjet -- other printers have other wheels files in the /usr/lib/wheels subdirectory). The easiest way to do that is to use the screen editor. We suggest that you make a copy of your original file by using a command like `cp hp.whl hp.whl.real`. Then just add the lines between other wheel entries. Note that the wheel numbers are preceded by a > symbol. The first wheel should be 1. Note that the name for the wheel entry in Figure 3 is ld1 (that's ell-dee-one), a distant cousin of R2D2. The ^ symbol indicates a CTRL character that is entered by holding down the CTRL key while pressing the appropriate key that follows the ^.

If you don't have a Laserjet printer, you can modify the middle column with the appropriate symbol to print, e.g. the + sign discussed above. If anyone has modified wheel files for other printers, we would be glad to distribute them to our readers.

You can also modify the wheels file to print out other characters that are not normally available for your laser printer. For instance, we have experimented with changing the small solid box found on the SHIFT 0 key to a tall solid rectangle which we can then use for creating a "drop shadow effect". To do this you would change the character from \334 to \333.

Figure 2 Examples of Line Drawing with Fortune:Word



At this time, the round corners available on your Fortune screen with the SHIFT 1,3,7 and 9 will not print on the Laserjet.

We hope you'll find many uses for the line drawing features described in this article. You may also be interested in the special features available from Jones Business Automation for creating lines and printing them on an HP Laserjet printer. The features of this package were described in an article on page 13 of the October, 1988 /u/fortune news.

Next month we'll discuss how to create special characters, such as a bullet character for your Laserjet printer.❑

Josh Lobel

Figure 3 Line Symbols for hp.whl

```
*****************************************
* @(#) Fortune:Word Line Draw Set
* SCI/Fortune & Computer Aided Technologies, Co.
* Fortune:Word Line Graphics for All HP with Car-
tridge (Y 92286y)
* for use with Fortune:Word.  (HP Laserjet|HP-500
Plus|HP Series II)
>ld1
+init ''\E(10U\E(s0p10h12v0s0b3T''
+pitch(I/10)
#
#  Shading
^Yl       "\260"          # light shade
^Ym       "\261"          # medium shade
^Yd       "\262"          # dark shade
^Y/       "\010"          # Backspace
#
#  Line Draw Graphics
^]-       "\263"          # Vertical Line
^]&       "\304"          # Horizontal Line
^])       "\264"          # right T
^]!       "\303"          # left T
^]%       "\301"          # upside down T
^]#       "\302"          # regular T
^](       "\277"          # Corner UR
^]''      "\300"          # Corner LL
^]*       "\331"          # Corner LR
^]\       "\332"          # Corner UL
^]$       "\305"          # Center Cross +
#
# FW Line Draw Special Characters
^]?       "\E&p1X\032"    # Right Arrow
^]>       "\E&p1X\033"    # Left Arrow
^]0       "\E&p1X\030"    # Up Arrow
^]1       "\E&p1X\031"    # Down Arrow
^]3       "\E&p1X\020"    # FW Tab Marker
^]4       "\E&p1X\021"    # FW <Return> Marker
^]8       "\334"          # Small Filled in Square
^]=       "\E&p1X\004"    # Small FW Center Marker (Diamond)
^]2       "\E&p1X\022"    # Up and Down Arrow Joined
#
#########################################
```

Don't Sweat Your Computer Problems!

Let /u/help Solve Them.

Question: *Bob Hall in Boise Idaho wrote recently wondering why his system slowed down when he used* ***Fortune:Windows****.*

Answer: If you've been following **/u/fortune news**, you know that we use **Fortune:Windows** extensively in our day-to-day operations. We frequently have several Progress databases open, along with a Multiplan or Tactician spreadsheet, and perhaps several editing screens. Although this is incredibly convenient, there are some costs. Which begins the answer to Mr. Hall's question.

The short answer is "not enough memory". Our Fortune 32:16 has 2 megabytes of RAM memory and 70 megabytes of disk storage. Each program we start requires memory -- some programs, like Progress or **Fortune:Word**, require lots of memory. Let's suppose that Progress needs 760K (760,000) bytes to run. For:Pro needs about 220K, so between them, we've used a megabyte. Now we add in another Progress or two, **Fortune:Word**, etc. and we've used up all of the memory on the system. In essence, this is the same thing that would happen if we added six or seven new users onto the system.

When all of the RAM is used up, the computer must "swap" a program out of memory onto the hard disk. Since the hard disk is mechanical, its speed is much slower than RAM, and the swap puts a considerable dent in system performance. If you don't have enough memory, and have several people (or windows) trying to do things simultaneously, response time may be horrible as each application continually swaps in and out of memory. This is usually unacceptable. The solution is to add more memory.

Fortune 32:16's can accommodate up to 2 megabytes of memory. (A modification of the system board may be necessary to accommodate 2 megs.) SX computers can use either 2 or 3.5 megabytes, depending on the version. The Formula 4000 and 8000 can take up to 8 and 16 megabytes respectively.

A useful way to determine if you are swapping is to use the **vmstat** command. Simply type `vmstat <RETURN>` and the UNIX prompt. The display will look like this:

```
--Procs-  Virtual   ----Real----  Swap  hd0   hd1   hd2   Traps/sec   ----%Cpu----
RQ DW SW  AVM  TX  FRE  MEM   SWP  I O OP  % OP  % OP  % INT SYS CSW US NI SY IN ID
 0  0  0  416  24  130 1472  3601  0 0  0  1  0  0  0  0   0   0   0  1  0  2  0 97
```

What you want to look at is the columns titled FRE, MEM, and SWP. This tells you how much memory is free, how much memory is being used, and how much is swapped out. Note that we only have 130K free memory. As soon as we start up some other application, something will be added to the 3.6 megs we already have swapped out.

So, basically the long answer is the same as the short answer -- if your applications start running slowly, especially with **Fortune:Windows**, you probably need more memory.

Question*: I'm using a Fortune 32:16 XP45. I would like to get some feedback from my printer...*

How do I have to solder those pins to be able to find out whether my printer is switched on or not?

Any MS-DOS PC tells me when the printer seems not to be available, but my Fortune...

Would you be so kind as to send me a chart/plan that can help me to solve that problem?

Yours sincerely,

Heinrich Boeker
Schenkendorfgasse 80, Austria

Answer: We know what you mean. For those of you who haven't used PC's, we may be able to explain Herr Boeker's query. On a PC, when the printer is out of paper, or turned off, or whatever, a message appears on the screen that informs the user. Sometimes it is specific as "Printer out of paper", other times it may just say "Printer not ready". As we all know, on the Fortune, you can think you've printed out your 200 page report, only to find out that the printer was never turned on.

There are two reasons for this difference, and both involve the "interface" that is used to attach printers to the Fortune. Most printers are attached to PC's using a "parallel" interface. Fortune's use a serial, or RS-232 interface. Briefly what that means is that on a parallel connection, all 8 bits of each byte are sent on 8 parallel wires simultaneously. With a serial connnection, the bits are sent out one after another, sequentially over just a few wires.

The second issue with either interface is called "handshaking". Computers can spit out information much more quickly than printers can print them. It's essential that the printer be able to tell the computer "Whoa, give me a chance to print what I already have". At that point the computer pauses and waits until the printer is ready to accept more information. That's what handshaking is. With a parallel interface, there are several extra wires that are not used for data, and thus can be used for all kinds of handshaking, including the "out of paper" message, etc. With serial interfaces, there are two different methods of handshaking. Hardware handshaking also uses extra wires to indicate whether the printer is ready or not. PC's use hardware handshaking for their serial ports, so if the printer is not on or not ready, the PC will know. The other type of handshaking is called XON/XOFF. With this method, the printer sends a CTRL-S to the computer to tell it to stop sending. When it's ready again, it sends a CTRL-Q. Those are the only two messages the printer can give the computer. Fortune uses this type of handshaking. This simplifies wiring and conforms to the handshaking needs of most peripherals that were in use when the Fortune 32:16 line was originally designed. Unfortunately, that means that it's not possible to do what you'd like. You'll just have to keep an eye on your printer.

Editors Note: *The following questions and answers were contributed by SCI/Fortune. We thank them for their technical expertise and their willingness to help all Fortune owners.*

Question: *What complications are involved when adding a DOS partition on my hard drive?*

Answer: A bit of forethought about the DOS partition is required when formatting and installing Interactive's 386/ix operating system on the hard drive for the first time. Partitions on the hard drive are created during the format sequence; the disk cannot be repartitioned at a later date without reformatting. Because the format routine is destructive to the existing contents of the hard drive, it is advantageous to make accommodations for the DOS partition during the initial format. If 386/ix has already been installed on the hard drive, there is no other way to add a DOS partition aside from reformatting. Further instructions on how to partition the hard drive are contained in the Interactive publication *Managing 386/ix Products.*

Question: *Is it possible to have more than one user using VP/ix? If so, how many?*

Answer: Yes. There is no logical limit to the number of VP/ix users that can be created on a system. However, practical limits do exist. When a VP/ix user is created, an area on the hard disk is set aside for that user's exclusive use. This area is usually 10MB. A file system can quickly become depleted if many VP/ix users are created. A customer must purchase a hard disk large enough to accommodate all the VP/ix users that the customer anticipates.

It is possible to create a VP/ix user without setting aside an area on the hard disk for the user. This type of user is called a "public" user. The main DOS drive, called the C: drive, will be shared with all other public users. This C: drive has read-only permissions which means that no one is allowed to create or change files on the C: drive. These permissions can be changed. Great care must be taken when creating public users. For further instruction on adding VP/ix users, refer to the Interactive publication *Managing 386/ix Products.*

Question: *I have a printer that can do both serial and parallel printing. When I try to use the printer as a parallel printer under SCO Xenix, it is very slow. However, the same printer set up serially runs considerably faster. Can you offer any suggestions on how to speed up the parallel printing?*

Answer: A serial printer is attached to a different device than a parallel printer. Although the symptoms seem to suggest that the problem is a result of the difference between parallel and serial printing, this is not the case. Speed problems are usually the result of shared interrupts. Recheck the interrupt vectors so as to assure that there are no conflicts.❑

A Managerial Nightmare is solved by a Fortune Formula 8000

by Richard Garrett of Designing Business Systems

***Editor's Note**: We wish to extend our thanks to SCI/Fortune for allowing us to reprint the following article written by Richard Garret of Designing Business Systems. This article is part of a series that SCI/Fortune includes in material that they regularly send to SCI/Fortune dealers. The series is dedicated to sharing the "success" stories of Fortune hardware and software owners. We feel that these articles are filled with exciting accounts of how SCI/Fortune computer equipment solves the problems of its owners.*

Designing Business Systems (DBS) in Tucson, Arizona is both a Fortune dealer and a very active Fortune user. As the owner of nine McDonald food stores which we purchased in 1975, we rely on a Fortune system running our proprietary software application "Restaurant Management System" to manage our entire operation. Together our Fortune system, with its speed and multiuser capabilities, and our software application provides us with the performance that is required to run a very fast moving and interactive business.

In 1983, we purchased our first Fortune system, a 32:16, which served us well for over two years. As our business expanded, we decided to upgrade to a Fortune Formula 8000 in 1986. Given the hectic pace of the fast food industry, we are happy to say that both systems have required very little maintenance. When system service has bee required, we have found the technical staff at SCI/Fortune and at the Parts Distribution Center to be very capable and responsive to our requests. Besides system service, SCI/Fortune's Marketing Programs department has helped us extensively in creating a detailed marketing plan to promote our software products running on Fortune systems.

Our Fortune systems have taken our fast food company from a collection of nine restaurants duplicating each other's work to a unified system utilizing shared resources and a structured data flow. In the beginning, DBS operated with a limited distribution of small PC's which had a restricted capacity. Getting data such as payroll information consolidated from all of our stores was a tedious, difficult task at best. Even a PC with a larger capacity wasn't a sufficient solution to help us solve our business management problems. Except for the ability to utilize a wider variety of reports, and to accumulate larger quantities of data, many operations were still being duplicated, and much data had to be entered repeatedly into each application.

The real and lasting solution was found when we purchased our first Fortune system. The Fortune system allowed us to consolidate all our data processing efforts and to formulate solutions for our company as a whole, instead of as several separate entities. We were thus able to set up a structured network for use by everyone in our company.

Currently our system includes a Formula 8000 equipped with a single floppy drive, a tape streamer for backups, and a 145 megabyte hard drive. Three of the system's 22 ports are defined as incoming/outgoing communication ports and are connected to a modem.

All nine stores are equipped with a Fortune workstation, a printer, and a modem. Also each store is set up with a timesharing schedule to use the three communication ports. In our administration office, we have 14 workstations, and four printers (ranging from a letter quality daisy wheel to a high speed dot matrix printer).

Not only were all our basic administrative tasks (accounting, payroll, etc.) unified, and simplified, but we were able to develop our own applications to further simplify our operations. For example, we have developed a scheduling system by which managers can log onto the system from their stores, and create a computer generated labor schedule. This has not only saved the managers the time required to create a schedule, but has enhanced the organization of tasks and jobs at the stores. Further, we have realized a savings in labor costs through tighter control.

In addition, we have developed a system to automatically poll the timeclock and register system at all stores after they have closed. This has eliminated approximately 95 percent of the

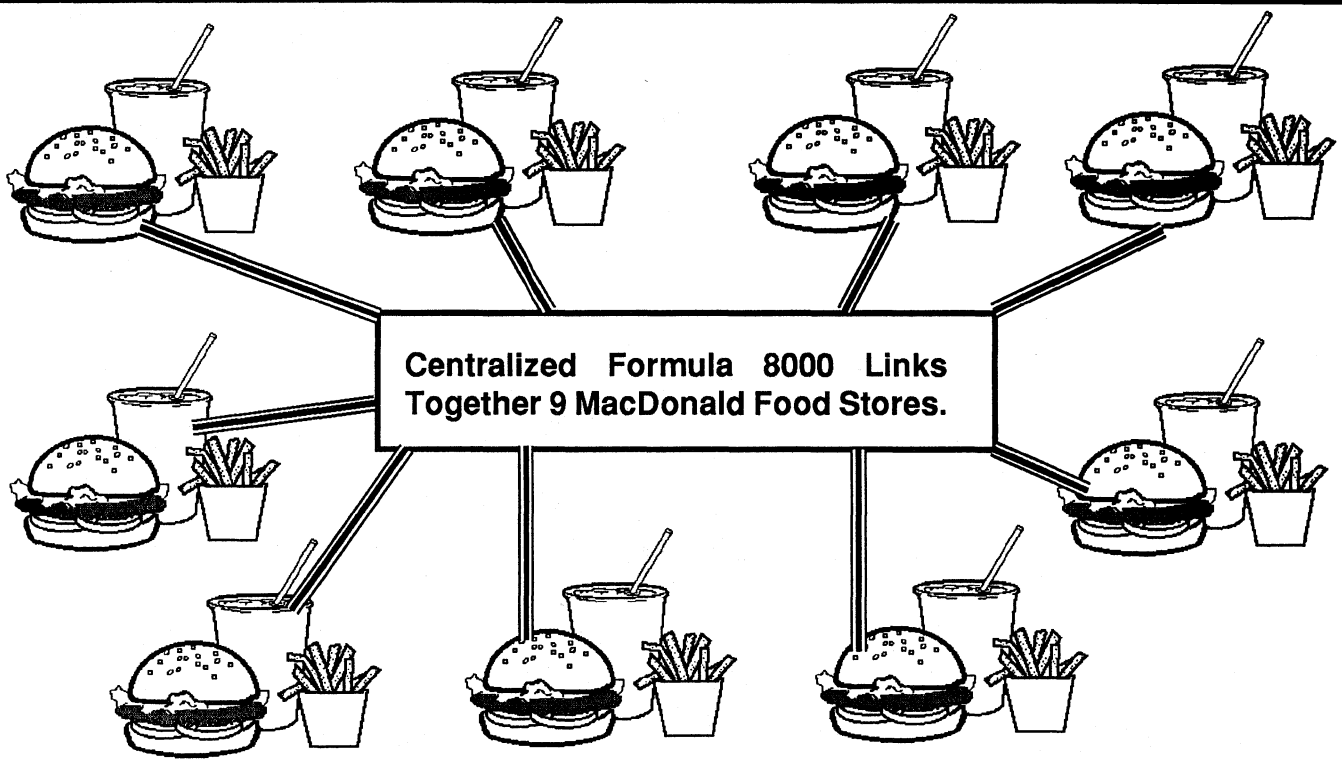
manual data entry required, and has made payroll virtually an automated system. All labor and sales applications can, and do, utilize this electronically gathered data. This enables practically instantaneous review and control of what's happening in our stores. In addition, we perform banking functions electronically, and receive invoices from our primary vendor electronically. This enables verification of our activities as they happen.

The greatest benefit from running our software applications on a Fortune system is that all applications can share the data; everything is consolidated, accessible, and easy to manage.

If you are interested in the fast food market, which is a 30 billion dollar industry with less than 50% of the stores being automated, please contact me. In addition to our efforts for fast food, we also support two school systems and a medical supply house which are all satisfied Fortune users.

Our Fortune systems have not only saved us thousands of dollars, but they provide us with ongoing economic benefits through the tighter control we have been able to implement. All of us at DBS appreciate the support that SCI/Fortune has given us and look forward to our continuing partnership with them.❑

Designing Business Systems uses a Fortune Formula 8000 to link together 9 separate MacDonald stores and is capable of automating many tedious and difficult accounting and payroll functions.



A *Faster* "Pretty Print" Program for Rolo

Carlton Haywood significantly improves the shellscript we presented in the February 1989 issue of /u/fortune news.

This past month we received an intriguing letter from one of our subsribers who explains how he modified a recent shellscript we published (see Volume 6 Number 2) to work faster. That shellscript was designed to print out rolodex entries in a useful fashion. The rolodex program (which can be found on our diskette called **Unix Tools**) is an excellent way of keeping an easy-to-use database of contacts and their phone numbers and addresses. However, it lacks any useful facility to print the contact names and addresses so that mailing labels can be generated. Our shellscript, and now Mr. Haywood's version, was designed to fill this obvious need. If you would like a diskette containing the version of **rolop** that we print here in Figure 1, then simply send $15 to us at the address listed on page 2. We will send you a Fortune formatted floppy that contains this shellscript.

Dear **/u/fortune** *news*,

I was very interested in your shell script to print labels from the **rolo** program. Several of our staff, including me, rely upon **rolo** to keep address lists and have talked about wanting a routine for making a nice printed list. Your use of the **IFS** variable is a clever mechanism for parsing records. After trying your program, I decided to revise it to improve the execution speed. Enclosed is my version, called **rolop**. This program executes at least *10 times* as fast as the original program and implements several options as discussed below. Also discussed are some thoughts on multi column output for the printed list.

The speed problem is solved by padding each address to

Figure 1 - Carlton Haywood's rolop shellscript for printing labels from rolo.

```
:
# read rolodex.dat and print labels - written 25mar89
# by c haywood based on original by mark palmerino
# Usage: rolop [-h -p]
#    rolop reads users .rolodex.dat file, formats work ad-
dresses to stdout
#    -p option adds phone number to address
#    -h option formats home address instead of work address
#    -p and -h will do home address and phone
# This version pads each address to 8 lines


WORK=Y            #SET DEFAULTS FOR OPTIONS
AHOME=N
PHONE=N
until [ $# = 0 ]  #CHANGE SWITCHES IF THERE ARE SWITCHES
do       case $1 in
         -h) AHOME=Y; WORK=N;;
         -p) PHONE=Y;;
         esac
         shift
done

while    read NAME                  #read rolo fields until EOF
do       read CMP; read WADDR; read WPH; read HADDR;
         read HPH; read REMS; read DATE;
         NXTLINE="junk"    #now read user defined fields
         while [ "$NXTLINE" != "" ] #until find a blank line
         do       read NXTLINE
         done

         case $AHOME in    #PUT ADDRESS FIELDS INTO NEW VARIABLE
         N)       LONGLINE=${NAME}\;${CMP}\;$WADDR
                  case $PHONE in
                  Y)       LONGLINE=${LONGLINE}\;$WPH;;
                  esac;;
         Y)       LONGLINE=${NAME}\;$HADDR
                  case $PHONE in
                  Y)       LONGLINE=${LONGLINE}\;$HPH;;
                  esac;;
         esac

         IFS=';
'                  #SET IFS TO ';' AND RETURN TO PARSE LONGLINE
         set $LONGLINE     #SET FIELDS IN LONGLINE TO $1, ...
         #THIS SHOULD BE set - $LONGLINE on the 32:16
         #OTHERWISE GETS VERY UNHAPPY ABOUT EMPTY LONGLINE
         #SX AND FORMULA ARE OK WITH set $LONGLINE
         case $# in        #ECHO ADDRESS W/ ENOUGH BLANKS TO PAD
TO 8 LINE
         1) echo "$1




";;
         2) echo "$1
$2



";;
(Editor's Note: The intervening portions of the case statement have been removed to save space. If you have any questions regarding this shellscript, please call us or send for the floppy that contains it.)
         7) echo "$1
$2
$3
$4
$5
$6
$7
";;
         esac
         IFS='
'                                    #RESET IFS
done <${HOME}/.rolodex.dat
```

nine lines without using the **expr** command and, to a lesser extent by reducing the number of separate **echo** commands executed for each address. Getting rid of the **expr** commands is the first priority, since each **expr** requires a trip to the hard disk to get the **expr** program, load it into RAM, and execute it. **Echo** commands also require a 'trip to the hard disk' for 1.8 and lower operating systems. Above 1.8 O/S, **echo** is built into **sh** and does not cost as much time. My solution is to use the **set** command in **sh** to count the number of fields, then go to a large **case** switch which prints the required number of blank lines. The **case** switch requires many lines of code, and is inelegant, but the execution is *very fast*. The whole thing is accomplished without resorting to any commands outside of **sh**. Note **rolop** automatically reads the users **.rolodex** (see the last line).

The number of **tests** and **echos** is reduced by concatenating all lines of the address into a single variable. This also takes care of two problems that I have with your version: I have addresses without a NAME and others with a multi line CMP. On output only a single echo is used. This design has the drawback that it is inconvenient to change the number of lines per address.

Rolop has options to print phone numbers with work address, home address only, or home address and phone.

Warning: you will have to change the order of fields read in **rolop** because my version of **rolo** lists the fields in a different order than the standard. I changed the order so that **rolo** would list Name, Company/Title, and Work Address, together. This way I can use **Fortune:Windows** to pick up an address and insert it into a letter, or into a special shell script which addresses envelopes with my laser printer.

Benchmarks: Exact comparisons are difficult because your version will not run without modification on my .rolodex.dat because I have empty NAME fields. **Rolop** execution times for 172 addresses are:

32:16	140	seconds
SX	76	"
Formula	25	"

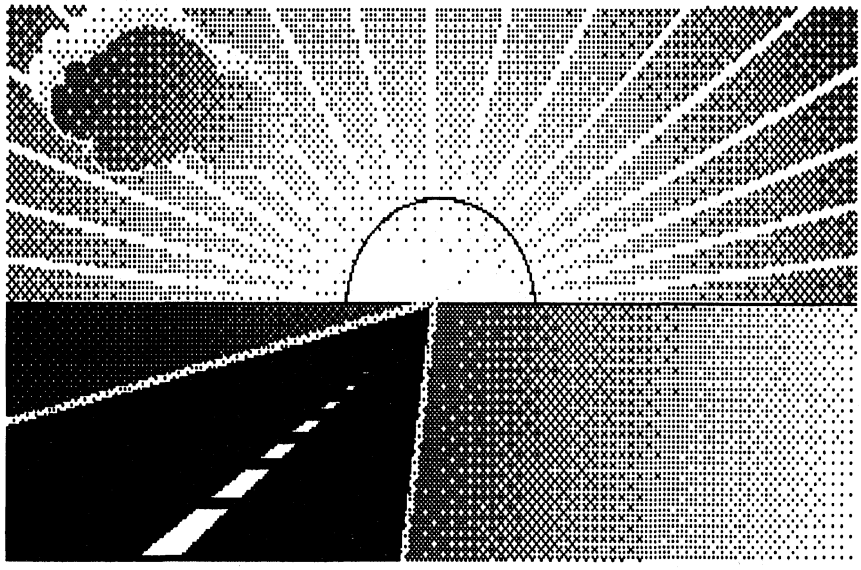
Addresses could be printed two or three columns across, as for certain address label sheets, by piping the output to **pr** as follows: `rolop | pr -t -l8 -3`

Could, that is, if one is using the **pr** from 1.8 O/S or lower. The **pr** command in 2.0 and above O/S will not do multi column output. (I saved my **pr** from the old O/S, renamed is **prxx**). The bug is simple to fix, Fortune has known about it for 18 months (I told them), but they have not fixed it yet.

Best Regards,

Carlton Haywood❑

On The Horizon



In this article, we wish to touch upon some developments in the computer industry that may, at some time in the future, be of use to SCI/Fortune owners. At this point in time most of what we discuss here is *not* available for the Fortune equipment that most of our readers have. *But someday...*

Any owner of SCI/Fortune hardware possesses at least one internal hard disk. This is probably the main mass storage device that you have access to. Generally, the amount of storage capacity you have will range from 20MB on the low end to about 140MB on the high end. Many Fortune installations will have more than one hard disk, thus providing mass storage of, in some cases, more than 300MB.

In the not too distant future, the Fortune owner may have access to mass storage technology that could make 300 MB look tiny. What we wish to do here is briefly discuss the way this technology is shaping up today.

Magnetic Storage Systems

All of the hard disks available to the SCI/Fortune owner are of the magnetic variety. That is, data is stored as a magnetic field and this is, by far, the most common form of mass storage. Advances in this area are now promising hard disk drives with the capacity of more than a gigabyte. Now a gigabyte is a large number, but to put it into perspective, it is equivalent to having **50** 20MB drives hooked up to your Fortune!

Optical Storage Systems

CD-ROMs

This area has been developing for the past several years and probably the term CD-ROM is most familiar to our readers. A CD-ROM is a disk that can typically hold up to 600 MB of information. It has one main drawback, however. It is only *readable* - that means the user can only read what is on the disk and cannot write information to the disk. Generally, CD-ROMs are used for distributing large, relatively static, databases, for example, parts catalogs.

WORM Drives

The next type of optical drive is known by the acronym WORM which stands for **W**rite **O**nce, **R**ead **M**any times. Storage capacities of 600 MB and up are common on this type of drive and its main advantage over the CD-ROM is that it can be written to once. One main use of this type of drive is for backing up sensitive or important information. This can be important in the banking and insurance industry where permanent audit trails are necessary. Another advantage of the WORM drive over magnetic tape as a backup medium is that while the information on a magnetic tape will generally degrade after 5 to 10 years, the information on a WORM drive will last up to 30 years.

Erasable Optical Drives

The final type of optical drives that we will speak about are still quite new and represent a relative breakthrough in storage technology. This is the erasable optical drive. It is quite comparable to magnetic technology in that this type of drive can be written to many times. It allows, generally, much higher storage capacity than the typical magnetic drives and this is, of course, their main attraction. There is a down side to these types of drives. Whereas magnetic disks have seek times of well under 50 milliseconds, these optical disks have seek times in the range of 100 to 200 milliseconds. (Note, however, that at least one manufacturer claims the seek time on its optical disk is 35 milliseconds.)

Conclusion

Optical Storage technology is just now coming into its own in the computer industry and offers some impressive ways of providing large amounts of storage capacity. We wish to emphasize that optical disks are generally not available for Fortune computers to date. However, the Fortune 5000 with its ESDI hard disk interface will probably provide the hooks for these devices. As we learn more about these options for SCI/Fortune hardware, we will pass it along.❑

Do You Want To Supplement Your Store Of Software? Why Not "Use the Net?"

As most of our readers know, we maintain a large, and growing, library of software. Currently, we have 15 disks - and each is packed with useful utilities, helpful programs and fun games. Many have asked us, "Where do you get all those programs?"

The main answer to that question is a source of public domain Unix C-source programs known as **Usenet**. Usenet contains the freely donated source code to literally hundreds of programs that are designed to run in the standard Unix environment.

Periodically we peruse the listing of available programs. When we find a program that looks interesting we will transfer the sources to our Fortune computer and then try to compile it. If we are successful, and we are not always successful, then we package it on one of our disks and in that way make it available for our subscribers.

However, we suspect that many of our readers might be interested in some of the programs that are available on Usenet and have the requisite skills to compile them. So, we decided to print an index of just one of the Usenet sub-directories of programs. You'll see that there are hundreds of possible programs for you to choose from in 11 separate volumes.

If you are interested in any of the programs listed, we can get the sources for you, place them on a Fortune-formatted floppy and mail it to you for our standard $15 diskette cost. Please note that for this price you will only receive the sources for the program. You should be prepared to compile and test them. If you really see something that you like and you don't have a C compiler, we can try and help you by compiling it ourselves but there will be a charge for this service.

	volume1
ansi.c	Yacc and Lex for 11/12/84 draft of ANSI C
bed	Bed version 1.0 (editor for binary files).
bourne	Bourne shell history + tilde + job control + more
ckermit.a	C-Kermit & USENET
cforth]	FORTH INTERPRETER IN C
checkin	checkin: editor interface for RCS logs
compress	Compress release 3.0
cpg+mdep	cpg and mdep
cpp	cpp1.arc
cshar	improved version of shar (shell archiver)
cxref	Cxref -- C cross referencer
diffc	contextual diff on Bell systems
digest	shar of digest software
dynamic	dynamic loading code for 4.2bsd
expire.8	Manual page for 2.10.2 expire(8)
getopt	public domain getopt(3)
lbgm	lbgm
newshar	The Connoisseur's Shar, version 2
newsweed	Newsweed: a program to delete unwanted news articles
nic	New NIC domain request form
patch1.3	patch version 1.3
pcurses	Terminfo/Curses
readnews.1	Manual page for 2.10.2 readnews(1)
rfc_882	RFC 882 - Domain Names - Concepts and Facilities
rn	rn version 4.3 source
rpc	Sun RPC part 1 of 10
sendmail.cf	GaTech Sendmail configuration
smail	Smail - a smarter net mailer
uk-1.1	yet another sendmail configuration (4 parts)
uucpanz.s5	uucpanz for System V
uucpanz.v7	another uucp status program: uucpanz
uuque	a uuwizard's utility for uucp queue snooping
vnews.1	Manual page for 2.10.2 vnews(1)
vnews	Vnews part 1
xfernews	xfernews software
xlisp1.4	XLISP 1.4
xref	a cross reference program
	volume2
access	source for access control lists
basic	A BASIC interpretor
bgrep	Boyer-Moore based fgrep like program
bm	bm version 1.1
bm2	bm (update to 1.1)
bm2	bm bug fix
choose	choose -- a program to select lines at random
compress4.0	Compress 4.0
cpg+mdep3	cpg revisited
cshar3	Update to C shar (shell archiver)
index.1	mod.sources archive index
index1a	mod.sources archive access
makekits	software "kit" generation script
mdump	mdump - multiple dump per tape utility
pathalias	Pathalias - new release
remote	Remote mag tape routines
rtar	Diffs to tar to use a remote system's tape drive
runtime	run-time memory allocation for multi-dimensional arrays
runtime2	dynamic allocation (arrayalloc) update
smail1	update to smail
tools	Software Tools in Pascal
uroff	uroff - nroff underlining
uuhosts	uuhosts (updated)
window	wm - a window manager
wire	Wirewrap program
	volume3
agelog	agelog - trim log files
att_getopt	public domain AT&T getopt source
badm	badm - BSD4.2 MASSBUS disk formatter
bm1.1	Ken Yap's changes to bm
calendar	A calendar program
calls	calls(1)
calls_4.2	Patches to calls(1) for 4.2 BSD
chsh	chsh chfn for SV
chsh2	chsh,chfn - Original contained security bugs.
clr.queue	sendmail clean-up script
command	command: replacement for system(3)
ctags	ctags source
date	formatted date program
decus_grep	DECUS grep.c
dial	a state transition controlled communications program
dial.sample	Example dial script.
dialout	dial-out mods for 4.3BSD
dtree4.2	dtree for 4.2
ff	ff: fast text formatter

g-format	G-format compilers for Ultrix/Unix Vaxes
gatech	GaTech Sendmail files
gatech1	Updates to GaTech Sendmail files
give	give: change owner/group of files
hdiff	hdiff: - source file compare program
head	head(1), and ctags(1) for AT&T type systems
help	help: VMS-style help facility
hey	Hey(1) [from Unix/World, Oct. 85]
hyphen	troff hyphenation utility
idledaemon	Yet another idledaemon
ieee	Makefile for IEEE calculator
index.1	mod.sources Index and archive access
infer	inference engine
la50	hack to convert nroff underlines to LA50 esc. seq's
laserjet-pr	LaserJet sources for BSD 4.2+
laserjet	HP LaserJet driver
lcat	troff->laserjet
lcat2	Troff->HP Laserjet filter - newfonts.c
less	less
lib_term	lib_term - datum entry using termcap
libc_term	libc_term - datum entry using curses
lilb-dbm	Ling library for dbm
man	A compiled 'man' program for System V
match	match - faster than bm
mdump2	Revised mdump (multiple dump per tape utility)
modgen	extract usenet moderator list from postings
modnotes	changes to notes
modula_pp	Modula-2 prettyprinter
msdir	MSDOS directory access routine
newspace	newspace - determine newsgroup disk usage
nwho	nwho - enhanced "who" program
okstate	UUCP Access to Kermit Distribution
pathalias2	New pathalias
pretty	mc & xlisp pretty printer
prune	prune.c - prunes log files
rcsit	rcsit - A program to prepare files for RCS
regexp	regexp(3)
regexp2	bug in regexp(3), and fix
rename	rename: a companion to restor
rfs	RFS: remote file system
rfs	RFS: Bug fixes
rmsecure	rmsecure - source for a safe "rm"
rsend	rsend - BSD communications program
scpp	scpp - a selective C preprocessor
sim	Software similarity tester for C programs
sndml.mods	translation tables in sendmail
sps	SPS (Show Process Status)
suntools	Improved version of Sun's window manager for 2.0
swho	swho: screen based who (curses, continuous update)
tc	termcap capability in scripts
tctoti	termcap to terminfo converter
telno	Telno: a telephone number permutation program
texchk	syntax checker for LaTeX
times.awk	uucp info from LOGFILE (awk script)
trc	TRC - expert system building tool
ttype	ttype: typing tutor
ttyuse	ttyuse
turbo_tools	Software Tools in Turbo Pascal
uuhosts2	newer uuhosts (too many changes for diff listings)
uuhosts3	uuhosts
uuhosts4	uuhosts 1.69
uumail	uumail -- an opath/pathalias based uucp mailer
uumail2	uumail release 2
uumail2.fix	fix to uumail release 2
vtem	a VT100 emulator based on termcap
wm.new	updated window manager - wm
xargs	execute a command with many arguments

volume4

68kdisassem	unc - 68000 disassembler
68kdisassem	Patches to unc to work on SUN UNIX
aaa	aaa - the amazing awk assembler
archx	archx: suggested replacement for shar
bm1.2	bm version 1.2 (blindingly fast "fgrep")
bm1.2speedup	speedup for bm on some machines
browser	Amiga file browser
calgen	Calendar Generation Program
chown	Improved and expanded chown/chgrp
chuni	chuni.c - change a users default universe (Pyramid)
client_man	Client/server context diffs to 4.2BSD man.c
client_servr	Generic client and server commands for 4.2BSD
egrep	egrep - More Pep for Boyer-Moore Grep
fmtr	Fmtr - simple text formatter
game_reg	GR - A Game Regulator
hershey.f77	Hershey Fonts in Fortran 77
hershey	Hershey Fonts
index.1	mod.sources Index and archive access
iso_pascal	Yacc and Lex for ISO Level 0 Pascal
lastindex	mod.sources Index and archive access
loadav	Routines to check the load average
mail.fixes	Patches to BSD4.2 mail (SysV mailx?)
match1.2	Match 1.2 - Fast grep for Vaxen
moveicon	tools for editing Sun icons
msg	Msg docs preformatted
msg	The Msg Mail System Intro (+ moderators notes)
nrtable	compile/decompile nroff driver tables (USG only)
nums	list-of-numbers generator
oldindex	mod.sources Index and archive access
portar	portable ar: suggested replacement for shar
printfck	printfck -- makes lint check (most) printf calls
quickplot	iplot and quickplot
rcsit2	new version of rcsit(1) - prepare files for RCS
regexp3	2nd bug fix for regexp(3), in regsub()
regexp4	regexp(3) improvement
rlogin	4.2bsd rlogin enhancements
rolodex	rolodex database program
rpt	A program called 'rpt'
savesrc	Two tools for organizing sources from USENET
se/part[1-8]	Georgia Tech 'se' screen editor (Part 1 of 8)
settz	time conversion / time zone system
shortc	shortc: C program to map flexnames into short identifier
shortc2	shortc: sed output, and standard input
sim2	Re: Software similarity tester for C programs
simplex	Simplex Curve Fitting Algorithm in C
spellfix	The ultimate spelling checker
sticky	PostScript sticky label program
strings	strings
subnet.arp	4.3BSD IP subnet ARP hack
telnetd	telnetd in the kernel
texindex	texindex -- make an index from a LaTeX .idx file
tm_to_time	tm_to_time(3) -- convert broken-down time into time_t.
tmac.ti	travel-itinerary macros for nroff
tvx	tvx: 1 of 10
tvx	1st batch of TVX Bug fixes

uemacs	MicroEmacs
uemacs	Termcap support for MicroEmacs v. 30 sources
uemacs3.6	MicroEMACS 3.6
uk-1.4	Sendmail UK-1.4
unaxcess	UNaXcess (unix bulletin board)
unaxcess	UNaXcess update #1
uumail3	uumail 3.0
xmodem	4.2BSD XMODEM programs

volume5

backup	front end for BSD dump
bm.odd	odd address optimization
bmgsubs	Boyer-Moore-Gosper fast string search subroutines
dither	Color Dither (ver 1.1)
getmaps	automated UUCP maps
junkmail	delete outdated mail automatically
retouch	force changed date
rise_set	Sun and Moon rise/set program
smallc	Small C compiler version C3.0R1.1
smtp_send	SMTP SEND command for Sendmail
uemacs3	MicroEMACS version 30 updates.
untic	decompile terminfo description file.

volume6

att_which	A "which" for non-BSD systems
bsearchstr	Binary search for strings in a file
cdecl	English<->C translator for C declarations
compress.xen	Xenix patches to compress4.0
context	context - generalized context printer
context.1	Manual page for context program
cpp.patch	Patches to 4.2BSD cpp for #elif, // comments
cvs	CVS, an RCS front-end
datediffs	patches for date to use elsielado's localtime
ditrev	Page reverser for ditroff
elm	Elm mail system
elm	Elm fixes for BSD, et. al.
glob	'Globbing' library routine
halign	halign - line up columns
help	Help programs
lbl	lbl preprocessor for [nt*]roff
less2/less.1	Revised man page for less
less2	New version of less
lj_filter	Filter for HP Laserjet
maildigest	The Mail Digest System
malloc	A "smarter" malloc
misc.patch	Changes to calls, compress, ditrev, getpaths, nbatcher
msdos_mk	A Make for MS-DOS and VAX/VMS
newbatcha	Usenet news batcher control program
newbatcha.nw	nbatcher source
newbatchb	Usenet news batcher control program
newscnt	Count unread news articles
pacman.p.h	missing files from Apollo pacman
printfck2	new printfck and manpage
qterm	qterm: Query Terminal for terminal type
reminders	A Personal Reminder system
rpc2	Sun RPC Source
s3uuque	uuque for System III/V in C
settz.patch	Updates to "settz" data files
sh.ulimit	Add ksh-style 'ulimit' to 4.2BSD /bin/sh
stringlib	X3J11/SVID/4BSD/etc string library
sysvdial	System V generic dial routines
talk.sysv.a	A "talk" for system V.2
talk.sysv.b	A "talk" for System V
texdvi2lj	TeX DVI driver for LaserJet+
uemacs3.7	MicroEmacs, Version 3.7
unrm.rm	"rm" and "unrm" programs
vt100tool	VT100TOOL for Sun's
watch	A multiple "tail -f" program
xlisp1.6	Xlisp version 1.6
yaccref	Cross-reference for Yacc

volume7

2.11news	2.11 News Documentation and Conversion
4.3cpp.patch	#elif patch to 4.3BSD cpp
aaakeys	Ann Arbor XL key uploader
append	Allow additions to 'protected' directories
bpatch	Binary (file) patcher/viewer
cmstape	Read and write IBM VM/SP CMS dump tapes
csh.patch	Two CSH patches
des	Purported DES program in C
determcap	Decomposing termcaps
dirstack.csh	CSH tools for directory stacks
forktest	Find security holes in shell-escapes
getmetrics	PostScript program to generate .afm files
getopt.fix	Getopt(1) from mod.sources
getoptprog	Getopt program for scripts
hostup	An alternative to the BSD ruptime command
idle.users	A simple BSD idle-users daemon
Index	Mod.Sources Index and Archives
less3	New release of LESS
make	Public-domain MAKE
msdos_mk.pch	Patch to msdos_mk for Microsoft C
new_archives	Additional UUCP Access to Mod.Sources
paths.mk	Makefile to build UUCP paths
pdtar	Public-domain TAR program
readvmsbacks	Read VMS backup tapes
regex	Ed(1)/regex(3)-compatible reg. exp. package
remtape	Remote magtape library for 4.3BSD
safe	Limit a program's execution time
sop	A .so filter for n/t/*roff files
sunmailwatch	A mail watcher for SUNwindows
tar_aids	Tools to read damaged tar tapes (tar_aids)
texdvi2tty	TeX DVI driver for TTY's, etc.
tinytcp	A tiny set of TCP routines (tinytcp)
tput	Public-domain tput(1) program
tput2	Public-domain TPUT (corrected implementation)
untamo2	Log out idle users
untamo3	Log out idle users (untamo revised)
uucp+nuz.tulz	Erik Fair's UUCP & Usenet toolbox
uuencode	Uuencode and uudecode
vttest/part1	Test VT100 features, Part01/02
vttest/part2	Test VT100 Features, Part02/02
yacc.notes	restarting yacc
yacchacks	Tools to restart YACC parses
yearlength	Compute length of any year

volume8

ansitape	ANSI tape program
cut+paste	Public-domain implementations of cut(1) and paste(1)
dca2troff	Convert IBM DCA documents to troff input
display	Execute command repeatedly, display output
display.pch	copy of what I just sent out in net.sources.bugs
ease	Ease, a language for writing sendmail.cf files
fixcpio	Repair damaged "cpio -c" archives

foogol	A (vax) compiler for a tiny ALGOL-like language
getpw	Public-domain getpw*(3) routines
graph+	Graph+, A Graph Plotting Program
her2vfont	Hershey fonts to 'vfont' rasterizer
hier	Directory hierarchy scanner
jove	The JOVE text editor
kurses	A program to call curses(3) functions
mcp	Account creation/manipulation program
microgmu	A Micro-Emacs variant that resembles GNU Emacs
multifeed.c++	Simultaneous multi-site news feeder in C++
multivol.pch	Multivol, Patch #1 (see Vol 7, Issues 12 & 13)
pd-localtime]	Public Domain (Table Driven) "localtime"
phoon	Phase of the moon, date routines
prep	A pre-processor for FORTRAN source
psfig-tex	Including PostScript/Macintosh figures in TeX documents
qterm	Query terminal for its type
se	Georgia Tech 'se' Screen Editor
shrink_names	Shrink VeryLong+File.names to shorter names
small2	Small, release 2.3
soelim	A .so/.nx/.PS filter for *roff files
sp	Soundex spelling-checker
tabs	A tab/space conversion program
textools2	A collection of tools for TeX users
trmatch	Syntax-checker for *roff
uk-1.4.pch	Patch for UK-1.4 mail configuration
unaxcess2	UNaXcess Conferencing, version 1.00.02
uucp.x25pad	UUCP X.25 'f' protocol and PAD dialer
uumail4	Uumail release 4.2
uutty	Bidirectional getty/login for SystemV
vn	The VN news reader
vtrm	A Unix/PC virtual terminal package

volume9

assem2	Generic assembler for micro's
bitstring	"Bitstring" package
elm2	ELM Mail System
elm2	New Configure.sh for ELM
fastgrep	Fastest grep around
gwyn-dir-lib	New directory-access library
month	Visual calendar program

mx-macros	Troff macros for "ACM Transactions"
old.bad.code	Previous "obfuscated C" winners
printf	Printf(1), for shell scripts
teco	A TECO text editor
uemacs3.8b	MicroEMACS, version 3.8b
xscreen	Screensaver for X window system
xterm	Terminal emulator for X window system
zmac	Z80 macro cross-assembler

volume10

agef	v10i100: Show disk usage by file age
cbar	v10i074: Another changebar program
cbw	v10i001: Crypt Breaker's Workbench, Part01/11
cfc	v10i033: "Compile" sendmail.cf files into EASE language
comobj.lisp	v10i075: Common Objects, Common Loops, Common Lisp
complex-lib	v10i056: Complex arithmetic library
copytape	v10i099: NEW version of magtape copy program
crc_plot	v10i045: CRC Plotting Package, Part01/06
derez	v10i030: Find and remove stale files from a disk.
des	v10i031: DES encryption routines and a login front-end
dev.fd	v10i098: A /dev/fd device driver for 4.3 and NFS systems
dir-lib.pch	v10i042: Bugfix to Doug Gwyn's portable directory library
ease	v10i051: Ease translator repost, Part01/04
hum	v10i027: Bull Tuthill's "hum" text concordance package
ida	v10i012: The IDA Sendmail Kit, Part01/07
ien116-server	v10i073: IEN116 Nameserver
ifp	v10i034: Interpreted Functional Programming lanuage, Part 01/07
lc	v10i055: An "ls" program
lemming	v10i091: A graphics editor, Part01/04
logo	v10i021: Logo interpreter for Unix, Part01/06
magtapetools	v10i088: Magtape handling package, Part01/02
mx-macros	v09i063: Troff macros for "ACM Transactions"
notes-mod.pch	v10i071: Patches for NOTESFILES for moderated groups
nrchbar	v10i070: A "changebar" interface for *roff
ptoc	v10i065: Pascal to C translator, Part01/12
qterm	v10i072: Query terminal for its type
regexp.pch	v10i097: Bug-fix for regexp() library
screen	v10i095: BSD multi-screen manager, Part01/02
sps	v10i060: SPS for BSD, Ultrix1.2, Sun3.x, NFS, Part01/03
sxt-sh-jobs	v10i018: Diffs for SystemV /bin/sh job control with sxt's
top_s375	v10i063: Top users display, 2.1 with Symmetric changes, Part01/02
tr2latex	v10i032: Translate troff to LaTex

Volume 11

3bnet	v11i025: 3Bnet utilities and printer spooler, Part01/02
avl-subs	v11i020: AVL Tree subroutines
bsd.2.10.note	v11INF4: BSD2.10 available from Usenix
bsmtp	v11i021: Batch SMTP program
bundle	v11i009: Buffered copy to/from physical devices
comobj.pch	v11i044: Patch for Common objects sources
cpmod	v11i027: Copy modes/ownerships/times
getty-enable	v11i008: Getty on/off programs for 4.[23] BSD
graphedit	v11i097: Graphics editor for Suns, Part01/06
hum.pch	v11i065: Hum concordance package update kit
id	v11i078: C cross-reference database system, Part01/03
inline	v11i039: Inline code expander for C, Part01/04
jove.pch	v11i045: Jove upgrade kit, Part01/04
less3	v11i033: The 'less' pager, Part01/03
little-st	v11i086: Little Smalltalk interpreter, Part01/03
monash	v11i029: MUSBUS 5.0 -- Monash University Benchmark, Part01/04
monthtool	v11i090: Sunview visual calendar
mtools	v11i023: MS-DOS disk tools for Unix, Part01/02
mush5.7	v11i051: Mail user's shell, Part01/12
netdata	v11i089: Transfer data (and mail) between SYSV and CMS
number	v11i028: Arabic numerals to multi-lingual natural language
psfig	v11i072: Including PostScript figures in ditroff, Part01/05
qsubst	v11i007: A query-replace program
reader.poll	v11INF3: Poll on copyrights
saver	v11i077: Small SUN screen-saver
sc4.1	v11i017: Spread sheet program, sc 4.1, Part01/03
se.pch.2	v11i067: Second update for 'SE' editor
small3	v11i069: Small, UUCP domain mailer, Part01/03
syslog	v11i022: Development version of syslog(3), for ATT, too
syslog.sysv	v11i050: SystemV version of syslog
tcsh.4.3	v11i084: Tcsh for 4.3 CSH, Part01/02
tcsh	v11i001: New version of T-shell, Part01/06
tek2ps	v11i049: Tektronix4014 to PostScript filter
templates	v11i091: Template-mode for GNU Emacs, Part01/06
test.el	v11i036: Test system for GNU Emacs, Part01/03
vitals	v11i066: Word counts, checksums, etc.
watcher	v11i082: Watcher system monitor program, Part01/02
zoo	v11i010: File archiver programe, Part01/07

The Back Page Winners

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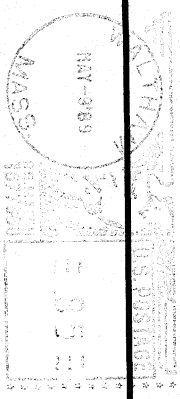

/u/fortune* news

The Newsletter for Users of SCI/Fortune Computers May 1989 / Volume 6 Number 5

The New Fortune 5000

- Creating Bullets in Fortune:Word
- Super-charge Your Modem
- What is SCI/Fortune's Marketing Strategy?
- Plus /u/help, The BASIC Advisor, System Administration and more

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Thanks for your business, and thanks for reading /u/fortune news.

/u/fortune *news*

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The text for this newsletter was prepared using an SCI/Fortune 5000 for both text input and typesetting. The typesetting was accomplished by using the Aldus Pagemaker program under VP/ix, which is a DOS emulation.

CONTENTS

From The Editors...

Philosophy at SCI/Fortune

I had the great pleasure of visiting **Bob Bozeman** at SCI/Fortune on April 27 and 28. During that visit we talked about many things and I was able to explore some issues that should be relevant to dealers and end-users alike.

Where is SCI/Fortune Going?

SCI/Fortune is making no secret of their new strategy. This is evident in the ads that are now appearing in major computer magazines. We have reprinted a copy of this ad in the News From SCI/Fortune column which begins on page 12. What is that strategy? The strategy, as I understand it, has two major components. First, SCI/Fortune will be producing *standard* hardware. Gone are the days of proprietary busses, non-standard versions of Unix and the like. The new Fortune 5000 is SCI/Fortune's entree into a market that is loaded with other 386 machines and if one word could describe the 5000 it would be *standard*! They feel this is a plus as the text from one of their ads reads:

"Want the versatility of standards without locking yourself into a one-way solution? SCI/Fortune systems are loaded with standards like high performance 386 architecture and operating systems like INTERACTIVE's 386/ix, SCO's XENIX and Microsoft's MS-DOS. This means you get the greatest availability of software to handle the real work you need done. Plus your dealer can cost-effectively customize your SCI/Fortune system with the hundreds of compatible add-in products available for graphics, fax, networking and more."

The second component of their strategy is designed to help differentiate SCI/Fortune from the other major vendors of 386 equipment. It is true that the 5000 is priced lower than some other comparable hardware (e.g., Compaq) but price alone is not the differentiating factor. SCI/Fortune is in the process of delivering services to their computer dealers which are generally unheard of in the industry. These services fall under the **JUMP** program. JUMP stands for Joint Unique Marketing Program and includes many services that are directed at the dealer to help him or her (1) better serve their existing clients and (2) improve their sales capability. You can read about just one component of the program which we discuss on page 14 of this issue. In another SCI/Fortune ad, targeted at potential dealers, JUMP is described:

"Want to develop more aggressive sales techniques? JUMP puts an SCI/Fortune sale professional *at your site.* With over seven years spent selling UNIX systems, including the first UNIX-based office automation system, SCI/Fortune offers you invaluable sales expertise. You'll be shown proven solution selling programs, telemarketing techniques, and lead generation/qualification approaches. We can also train and support your technical staff."

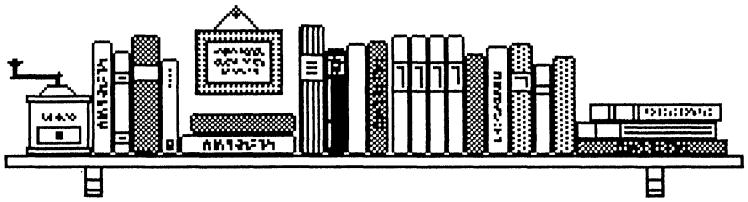
It is clear that two of SCI/Fortune's main goals are rebuilding customer loyalty and confidence and secondly to rebuild their dealer channel so that their dealers are more thoroughly trained and more successful. To this end we feel that they are making important strides and we sincerely wish them much success.

A Third Component?

In my discussions with Bob Bozeman we talked about SCI/Fortune's new strategy and it was clearly built on the two components discussed above. However, it became clear to me that there was a third, almost unspoken, component which is an important part of their new strategy. I feel that this component was always missing from the Fortune management teams of the past. What is that component? It is the realization that SCI/Fortune needs to pay more attention to the end-user. For most of the past 5 years it felt like we had to fight against Fortune - in our eyes, they were short-sighted. However, for the past 8 to 10 months there has been a very different wind blowing and it is a warmer breeze.

It is clear that SCI/Fortune with the help of their new management have many of their priorities straightened out. They are being sensitive to the end-user in important ways, they are supporting dealers in innovative ways and they are producing hardware and software that solve problems. Keep up the good work SCI/Fortune!

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

Question: *I am trying to create my own IDOL report for my inventory master file to show the value of items in stock. I am using a new field definition to show Total Quantity On Hand times Accounting Cost for each item reported. I want to report a single Item Class, so I am using the Logical Retrieval option. When I print the report, the new field prints out as NUM(E$(6 on each line. What the heck is that?*

Also, I have noticed that you must include all six characters in the Item Class, including spaces, when defining logical retrieval or you will get the "NO HITS" message instead of a report. When your class codes are less than six characters some of them may be right justified and others left justified. Some may even have leading and trailing spaces. If you want to see all of the items in that class, you have to run two or three reports and add the totals manually. Otherwise you must go back and change all of the class codes so that they are all the same. I find this a major inconvenience in IDOL.

Answer: You are beginning to get sophisticated out there! It looks like we are going to have to delve a little deeper into the IDOL Report Generator. For those who need a refresher course before we begin on these problems, please refer to BASIC Advisor columns in these back issues of **/u/fortune** *news* which address techniques in IDOL reporting. Go ahead, we'll give you a few minutes.

Volume 3, Number 1, January, 1986
Volume 3, Number 12, December, 1986
Volume 4, Number 6, June, 1987
Volume 4, Number 9, September, 1987

Is everyone back? Good. Now let's tackle the two problems at hand.

First, we went into file maintenance for the Inventory Master, file number 95 or "CINV1", and selected option 5, REPORT. We tried to define a new field to show the Total Quantity On Hand, field number 5, multiplied by the Accounting Cost, field number 8. We answered the questions this way:

DEFINE NEW REPORT/INQUIRY (Y/N) **Yes**
DEFINE NEW FIELDS (Y/N) **Yes**
ENTER NEW FIELD LENGTH: **8**
PRECISION *We hit the Carriage Return*
ENTER NEW FIELD DEFINITION **?**

At this point we ran into trouble. We got the SYNTAX ERROR message with these two tries, in spite of the fact both are legitimate IDOL commands:

NUM(E$(67,6))*NUM(E$(88,9))
#5*#8

In our cleverness we found that we could make the computer accept our definition if we enclosed it in quotations:

"NUM(E$(67,6))*NUM(E$(88,9))"

We titled our new field column "INVENTORY VALUE" and went about defining the rest of the report. So why did it print NUM(E$(6 on each line in the INVENTORY VALUE column?

Computers are incredibly good at doing exactly what they are told to do, and we told it to define a new field of eight characters. By pressing the Carriage Return at the PRECISION question, we told it also that the new field was to be "alphanumeric" in nature, i.e., it was to accept all legitimate keyboard characters. In other words, we did not restrict input to numbers only. When we tried in our New Field Definition to conduct a mathematical calculation on two other fields, we received the SYNTAX ERROR message (one cannot multiply "COWS" by "SHEEP", for example). By enclosing our definition in quotations, the computer accepted it as a "string", or as literal alphanumeric information. Since the length of the field was only eight, the 27-character string was truncated before it printed, and we saw only the first eight characters on each line. Had we responded with 0 (numeric zero) or any

other whole number up to 14 at the PRECISION question, the computer would have recognized the new field as being restricted to numeric values only. It then would have accepted either of our original NEW FIELD DEFINITION responses and reported the items properly.

Now let's talk about the Logical Retrieval problem. To solve this one, we are going to have to combine some of our Business BASIC commands into the IDOL report. Stay with me, it's not as hard as it first appears to be.

What we are trying to do here is define a report which will include items in a single class only, as shown in field number 37, CLASS CODE. We will assume for the sake of argument that only three characters of the six character Class Code field are being used for items in the inventory file. If the Class Code we wish to report is CDE, we will further assume that various Items in Class Code CDE are represented in the Class Code Field as either "<space> <space> <space> C D E", or "C D E <space> <space> <space>", or even "<space> C D E <space> <space>", or "<space> <space> C D E <space>". Our problem is to define a report which will include all of these items while ignoring all other Class Codes.

When we arrive at the DEFINE LOGICAL RETRIEVAL (Y/N) question we respond affirmatively and are asked to ENTER RETRIEVAL RULES. Since the Class Code field is six characters in length, neither of these two retrieval rules will find items to report and the NO HITS message will be encountered:

```
E$(204,6)="CDE"
#37="CDE"
```

If we define the retrieval rule to include all six characters of the field, we must determine where to pad with spaces. These two examples of retrieval rules will report only those items which store the class Code as "C D E <space> <space> <space>":

```
E$(204,6)="CDE  "
#37="CDE  "
```

In order to get totals for all items under Class Code "CDE" we would need to print, as our questioner suggested, four reports, one for each possible combination of "CDE" and spaces, and total the reports by hand. Quite a pain in the anatomy. But fret not! An answer lies in our Business BASIC documentation book. Look up the POS (Position) function. If you have the older Fortune version of the Business BASIC book, you will find POS defined on pages 6-10 and 6-11, and you may be able to understand it - somewhat. If you have the 6.5.12 BASIC, the documentation on pages 2-71 and 2-72 is a little more "propeller head" in nature. Either way, we will try to put POS into terms we can understand so that it can be used in our Logical Retrieval Rules. We want to use one (but not both) of the following Retrieval Rules:

```
POS("CDE"=E$(204,6))<>0
POS("CDE"=#37)<>0
```

Although either rule is acceptable, for the sake of clarity we'll look at the second example, POS("CDE"=#37)<>0. In plain English we can translate this to read, "The position (POS) of the string value, "CDE", located within (=) Field Number 37 (#37) must not equal (<>) zero". The position of "CDE" within Field 37 will equal zero in all cases where the letters "C", "D" and "E" do not specifically appear anywhere in the Class Code in that order. Such records will not be reported. Here are four examples of records which will be reported. In each case the Position Number is indicated after the second "equals" sign:

```
POS("CDE"="CDE  ")=1
POS("CDE"=" CDE  ")=2
POS("CDE"="  CDE ")=3
POS("CDE"="   CDE")=4
```

Since none of these examples return a zero when interrogated with the POS function, all CDE Class Code items will be reported and totalled on one report, regardless of where "CDE" is located in the Class Code Field.

There is a down side to all of this. Note that unless all of our Items are classified with precisely three characters of Class Code we run the risk of including unwanted items on the report:

```
POS("CDE"="ABCDEF")=3
```

The Class Code for this item is ABCDEF, but the position of the desired Class Code, CDE, begins at the third character of the undesired Class Code ABCDEF. Since the Position does not equal zero, the item will be reported.

Question: *I'm having a problem with the printer not closing when someone goes back to the menu in the business applications. What is the name of the main menu driving program?*

Answer: CUTSA0

Question: *You came down rather hard on the Thoroughbred product line in your last article. I thought from your March article that you liked IDOL-IV. Last month you actually recommended against upgrading to IDOL-IV. Also, how did you manage to even see the 4GL Applications? They haven't been officially released yet. How do you know they are so bad?*

Answer: Regular readers of this column know we try to treat good products with enthusiasm and bad ones with sarcasm. We are very enthusiastic about the latest release of IDOL-IV, but we still cannot recommend it to someone who is relying on highly modified 3GL programs to run their business. If they are planning to use IDOL-IV to generate new applications in conjunction with the old software, we say go for it. Or if one is running on pure BAS applications from Fortune, we

think upgrading to Thoroughbred's Level 5.1 applications and IDOL-IV is a good idea.

The 4GL applications we examined were the original ones which, as we understand it, were created by some independent subcontractor. Supposedly they are not the 4GL applications Concept Omega is hoping to release soon. We heard somewhere that these original products failed in beta testing and have been recalled because of "serious design flaws" which needed to be reworked. But products with "serious design flaws" are not reworked, they are discarded. I have to believe that Concept Omega is creating something significantly better than what we commented upon last month, whatever it was. If anyone in the know wishes to provide us with additional information about the original 4GL applications or bring us up to date on what is happening with the new ones, we will be happy to listen and offer equal space.

Addendum: Exactly two hours after the previous article was submitted we received the following letter from **Mr. Bill Clarke**, who is the Product Manager for Concept Omega Corporation. We present it as received and verbatim, noting for our readers that a **VAR** is a "Value Added Reseller", or a customer of Concept Omega, and **BASIC Librarian** is a full screen Business BASIC editor.

Dear Ray:

I read your April article in the **/u/fortune** *news* with some disappointment. I would like to take this opportunity to add some additional comments to your response to the question concerning the upgrading of business applications.

The first question to really ask is what are we upgrading to or what is the current release of the Thoroughbred Accounting Modules. Under IDOL, the current release is 4.0 Level-G. Under IDOL-IV, the current release is 5.1. There is no official upgrade path from the IDOL product to the IDOL-IV product. Technically, a system could be upgraded as all data files retained their format, though many of the internal programs have been rewritten to take advantage of IDOL-IV features (editor, reverse video screens, message dictionaries, auto file expansion, etc.). Documented source code via BASIC Librarian is available at no charge for the 5.1 product.

Currently, there are no enhancement releases scheduled for either of these products. To assist our VAR's who have heavily modified and/or have closely knitted verticals, we have begun to offer a paid up royalty plan.

Concept Omega is growing at a rapid pace providing our VARs with more solutions every day. Thoroughbred's recent acquisition of ADD+ON was part of our strategy of providing additional solutions. The ADD+ON Accounting System will provide a 3GL application solution.

The base for the Thoroughbred Accounting modules is some ten plus years old. Thoroughbred VARs have asked for something new. Something using new technology, easy to maintain and modify, and very feature rich allowing the VAR to concentrate on providing better verticals. SOLUTION-IV ACCOUNTING, built using Thoroughbred's 4GL Application Development Environment IDOL-IV, has received high marks from both dealers and end-users. Many of the alpha and beta participants claim that the use of IDOL-IV's script language (SCRIPT-IV) provides structure programming beyond anything found in BASIC to the point that most modifications will require no programming changes. Demo's have prompted both dealers and end-users to drop their current accounting software line. The initial release of the base modules (AP, AR, GL) is just around the corner.

Providing feature rich accounting software that is more competitive than the major players is all part of Concept Omega's strategy to return to the lead in the 3GL and 4GL business application marketplace.

Enclosed is a draft copy of the SOLUTION-IV Accounts Payable manual (without diagrams or screens). You will also find a copy of a sample script (Bank Code Maintenance). If you have any questions or comments, please call me anytime.

Sincerely, Bill Clarke

Dear Bill:

We certainly appreciate your taking time out of your schedule to respond to our questions. We also thank you for the script sample, which looks nothing at all like the "script" we saw earlier. And we will take the time to read through the Accounts Payable manual so that we will be prepared to comment on it in our next article.

Regarding the SOLUTION-IV Accounting, the proof will be in the pudding. We are looking forward to trying out your 4GL business accounting, but we remember software products from various companies which passed alpha and beta testing only to fail in the open market. Has Concept Omega ever experienced this with a product?

We congratulate you on your recent rapid growth and wish you continued success: your success is our success. Speaking for a bunch of little guys, we hope that as you continue to grow you do not forget the family-like relationship we have all enjoyed in the past. After all, we're in this thing together.

Sincerely,

Ray❑

Software For The Fortune 32:16 And Formula

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

W-2 LINK ($395.00) - designed for companies with over 250 employess who must report W-2 payroll information to the Social Security Administration (IRS) via magnetic tape or diskette. Automatically takes information in the Business Accounting System (BAS) Payroll module and puts it onto diskette in the format required by the IRS. Also available for PAC software. also.

1099 LINK ($295.00) - this product produces Form 1099's required for submission to the IRS and is an extension to the standard BAS Payroll module.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

WESTERN LINK ($195.00) - provides instruction on how to use your Fortune for sending/receiving telex messages using Western Union's Easylink. Can replace your telex! Fortune ITE or Handshake software required.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

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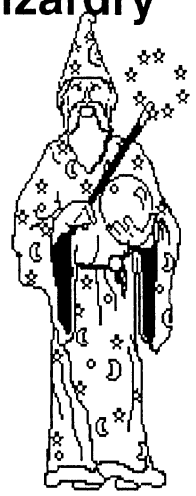


This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

In the last issue, we concluded our walk through most of the major directories that are found in For:Pro. Up to this point, we have discussed commands and procedures that are executed after the system has been started and is in the multi-user state. In this issue, we will be discussing how to "cold boot" your system.

The term "cold boot" means that we are going to start the system by using Volume 1 of the "Cold Boot" diskette set. Prior to For:Pro 2.0, these diskettes were labelled "Single-User FOR:PRO". There should be three diskettes in the set. Once the system has been "booted" using the floppy disk, there are several things we can do depending on the reason for the cold boot.

Here are a few of the reasons why we might want to cold boot the system:

1. To erase the hard disk and reload the operating system. This may be required, for example, **because of a problem we are having with the FOR:PRO operating system**. One way we could reload FOR:PRO is by using the "S5 install" option from the Global Menu. Sometimes, however, the problem with FOR:PRO is severe enough that this method of reloading does not fix the problem (i.e. a disk "crash" where the directory structure itself has been damaged).

If we have put **a new hard disk** on the system, we would also want to use this procedure to initialize the hard disk by formatting it and loading FOR:PRO onto it. For those of you that have maintenance contracts, this is usually done by the maintenance organization.

In a previous article, we discussed the term "non-contiguous." This means that data stored on your hard disk is not all together in one place - it is fragmented. Over time, the disk becomes more and more fragmented which means the system will run significantly slower. One way of solving this problem would be to do a complete system backup; erase your hard disk; and restore the system from the backup. We have seen a significant **improvement in performance** by doing this.

If you are experiencing problems with your system that may be related to the hard disk or the WD Controller, we sometimes use this procedure **as a diagnostic tool** to home in on the problem, especially where the WD Controller is concerned. This is especially useful to those of you that do not have access to the Fortune Diagnostic disk.

2. We might also want to cold boot the system **to set or change system configuration parameters**. These parameters can also be changed using the "uconf" command when the system is running. Some of these parameters, however, if set incorrectly will keep our system from coming up.

3. The cold boot procedure can also be used to boot the system from the floppy disk when any of the files stored on the hard disk that are needed for automatic system startup are missing or damaged. If, for example, the "/unix" file is removed, we could boot the system from floppy disk so we can restore the file.

4. There may be times where the nature of the problem requires us to use this procedure as a "back door" method of accessing the information on our hard disk. Remember in one of our previous articles, we discussed the concept of "mounting" and "unmounting" a floppy or hard disk. In the normal course of operation, we boot up from the hard disk and access information on a floppy disk by "mounting" it.

If we are having problems with the hard disk or the operating system that prevents the system from coming up normally, we can come in through the "back door" by reversing this concept - we boot up from the floppy disk and "mount" the

hard disk so we can access it just like we access information on the floppy disk when we are running off of the hard disk.

The first volume of the cold boot set has the minimum FOR:PRO commands that are needed to bring the system up using this disk. Remember that when we use this method, we are operating totally from the floppy disk - nothing on the hard disk is used. If you keep that frame of reference, you should not have a problem understanding the concept.

In this article, we will be discussing how to boot the system from floppy disk and look at your hard disk through this "back door". As always, we caution you that actions you take during this procedure could adversely effect the performance of your system - in other words, if you feel uncomfortable about what you are doing then leave it to those who are qualified to do so. Use the following steps as a guideline:

1. First of all, insure that your system has been properly shutdown, if possible. There are two methods that can be used to initiate the cold boot procedure. If the system is already powered on, depress the "reset" switch in front of the machine while holding down the **<CANCEL/DEL>** key. If the system is not powered on, hold down the **<CANCEL/DEL>** key and turn the power switch on.

2. Depending on the version of MOM ROM chips you have, you will either see a "boot menu" (version 1.7) or a picture of the Fortune system (version 1.8). Refer to Part 20 of this series of articles which appears in the December, 1988 issue of **/u/fortune** *news* if you need to refresh your memory on what the screens look like for each of the two versions. Take the following actions depending on what version MOM ROMS you have (the version number of your MOM ROMS is also displayed in the normal startup sequence after the number "9" and before the date/time screen is displayed):

Boot Menu (Version 1.7)

a. Depress the **<F4>** key, then depress the space bar until the field reads "Floppy Drive #0".

b. Depress the **<F7>** key and enter "fd02/sa/reconf".

c. If you have not already done so, insert your Cold Boot Volume 1 floppy disk.

d. Depress the **<EXECUTE>** key to proceed to the Configuration Menu.

e. DO NOT SAVE THESE SETTINGS USING THE **<F9>** KEY. THESE ARE TEMPORARY CHANGES ONLY.

Fortune picture (version 1.8)

a. Depress the **<RETURN>** key twice until the cursor is over the first of two zeros that will appear under the floppy disk.

b. Depress the **<EXECUTE>** key and "fd02/sa/reconf" will appear in the picture of the terminal.

c. If you have not already done so, insert your Cold Boot Volume 1 disk.

d. Depress the **<EXECUTE>** key again and the Configuration Menu will appear.

3. In either of the above two procedures, you should now be at the "Configuration Menu". Again, refer to Part 20 for a discussion of this menu. At the bottom of the screen, you will see selections **<F1>** thru **<F5>**. Depress the **<F5>** key (BOOT FROM FLEXIBLE DISK). The normal countup sequence from 1 to 9 will now begin. Note that there is a long pause between number 3 and number 4. Note also that your floppy light should be illuminated since the system is booting from the floppy disk.

4. After the countup sequence is complete through the number 9, the screen in Figure 1 is displayed.

In order to go through the "back door", we need to enter the "maintenance mode". In order to do this, we need to get to the FOR:PRO prompt so at the "Select" prompt, we enter:

```
Select: cd /etc
#
```

We are now at the prompt. It is important that you remember that we are working off of the floppy disk at this point and the only commands and files that are available to us are those that are on this floppy disk. In other words, we are now in the "/etc" directory on the floppy drive - not the hard disk. In fact, if you look at the commands that are on the floppy disk, you will see that the following commands are the only ones available to us right now:

/bin directory - cat, chmod, cp, ed, expr, ls, mkdir, rm, sh, sync

/etc directory - bootcp, chlog, chown, format, fsck, mkconf, mkdevs, mkfs, mklost+found, mount, rdconf, reboot, umount

Let's see if we can tie all of this together now. When you are booted up normally on the hard disk, you can access data on the floppy disk by mounting the diskette. In fact, if there are commands on the floppy disk, you can execute them once the diskette has been mounted. The same is true here. Even though we have a limited number of commands on the floppy disk that we have booted off of, we should be able to run the commands that are available on the hard disk once it has been mounted as an extension of the floppy disk. So, it looks like we need to mount the hard disk at this point.

Figure 1.

```
Cold boot Release x.x
Select a function key:

<F1>  To completely erase and reload your disk

<F3>  To retry starting up the system as specified
      in the Maintenance Screen

....  (Anything else typed in will be executed as
      a maintenance mode command.)

Select: []
```

5. To mount the hard disk, enter the command:

```
# /etc/mount  /dev/hd02  /h
```

Just like we mount a floppy disk to the "/f" directory, we have now mounted the hard disk to the "/h" directory on the floppy disk. In fact, if we change directory to the **/h** directory and do an "ls" command, we will see the root directory of the hard disk. If we change directory to the **/h/etc** directory, we would be working in what would normally be the **/etc** directory if we had booted from the hard disk. THE MAIN POINT HERE IS TO REMEMBER YOUR POINT OF REFERENCE. If you do not precede the pathname with **/h**, you are working in the directory on the floppy drive:

/etc - directory on the floppy disk
/h/etc - directory on the hard drive
/bin - directory on the floppy disk
/h/bin - directory on the hard drive

Now that the hard disk is mounted, you can use any of the commands that are on the hard disk but that are not available on the floppy disk (i.e. the "vi" editor). To use these commands, simply put the full pathname of where the command is normally located on the hard disk. Let's say that we need to edit the password file on the hard disk. We could use the following sequence of commands:

```
# cd /h/etc
# /h/usr/ucb/vi passwd
```

Remember that the "/h" directory is not in the search path (PATH variable) so we need to give the full pathname of the file. In any case, now that the hard disk is mounted, we can fix whatever needs to be repaired.

6. Normally we would unmount the hard disk when the work is completed just like we would unmount the floppy disk using the "umount" command when we were finished with it. Unfortunately, once the hard disk is mounted in this manner, it will give you the old "something/one is using it" message if you try to "umount" it. This "bug" means that once you have mounted **/dev/hd02**, there is no way to unmount it.

In fact, if you have two hard disk drives on your system, the only way you could work on both of them at the same time would be to mount the second hard disk to another empty directory. For example, you could create a "h1" directory on the floppy disk and mount the second hard disk to this directory. Mount the second drive after you have mounted the first drive. The Cold Boot Volume 1 diskette only has the standard **/dev** files and therefore does not include the hd12, hd22, etc. names. The best way to handle this would be to mount the first drive and then use the device names in the **/h/dev** directory on the first drive.

Let's look at the sequence of commands for mounting two drives:

```
# mount /dev/hd02 /h
(mount first drive)
# mkdir /h1
(make h1 on floppy)
# chmod 777 /h1
(change permissions)
# mount /h/dev/hd12 /h1
(mount second drive)
```

When you are finished using other disk drives other than hd02, they will unmount normally using the "umount" command.

7. Once we have finished our work on the hard drives, there are a couple of ways that we can restart the system:

a. One obvious way to restart the system would be to depress the "reset" button or turn power off and back on again. Be sure to take out the Cold Boot Volume 1 disk after you do this and before the system gets very far into the countup sequence.

b. Another way would be to enter the command:

```
# /bin/sh /etc/rc
```

This method would countup the numbers 8 and 9 and would then give us the "Select a function:" menu illustrated above. To restart the system, we would depress the **<F3>** key. Then we would get the prompt:

```
Do you really want to reboot the system (<F1>=yes/<F2>=no)?
```

Depress **<F1>** and the system will reboot and go through the normal 1-9 countup sequence.

c. If you want to bypass the steps in 'b' above and go directly to the "reboot" question, simply enter the "reboot" command which is where the prompt is coming from anyway:

```
# /etc/reboot
```

There are a couple of other points we need to make about this whole procedure. First of all, notice that we have only been working with the first Cold Boot set volume. Once the system has been booted up from this diskette, there is no way to mount another diskette like we do when we boot from the hard disk. If you experience problems on your hard disk and the only reason you are coming through the "back door" is to do a backup of your hard disk, you are in trouble. As it stands, the first volume of the cold boot set is about 97% full. This means that you are not going to be able to copy very much from your hard disk onto it. We have a stripped down version that will allow you to copy more to it. If you had 10 of these on hand, you would slowly be able to copy any files that were not larger than the total space available. The procedure is cumbersome at best. THERE IS NO SUBSTITUTE FOR BACKING UP YOUR SYSTEM ON A DAILY BASIS. Where we have had clients that had not learned this lesson yet, we have had to resort to this procedure to save their data files.

In the next issue, we will talk about how to erase and reload your hard disk (I can hear the telephones ringing already). ❑

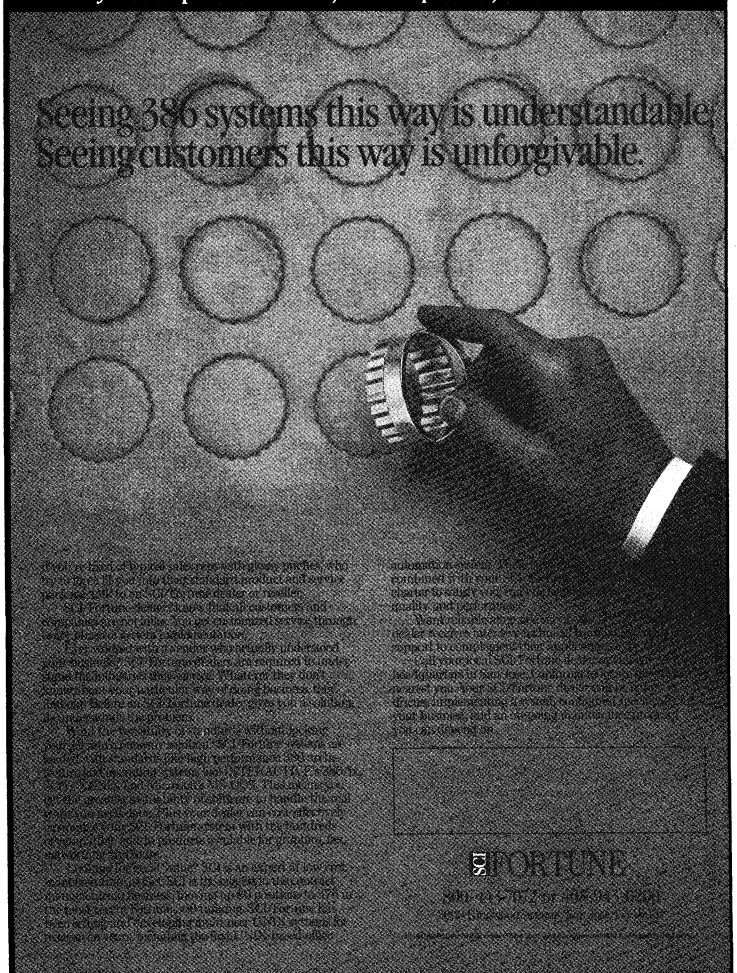
News From And About SCI/Fortune

SCI/Fortune's New JUMP Program

JUMP stands for Joint Unique Marketing Program and is targeted at providing existing SCI/Fortune dealer's with added training and expertise in supporting and selling SCI/Fortune products and attracting new dealers. It is clear that SCI/Fortune is putting much needed resources into their dealer channel and we feel this will ultimately benefit Fortune end-users.

The following reproduction of an ad is targeted towards new customers of SCI/Fortune product. This ad represents the end of long dry spell of Fortune advertising. Keep a look out in the major computer journals for more advertising.

SCI/Fortune is starting a new ad campaign directed at both dealers and end users. The ad reproduced below is the version targeted at end users. Versions of this ad have already been placed in major computer journals.



SCI/Prime Contractor For NASA Computer, Ships MAST GSE Units

The Computer Department of the Government Division has shipped the first unit of the Ground Support Equipment (GSE) for NASA's Multiprocessor Architecture Space Technology (MAST) 1750A Computer. SCI was selected in mid-1988 as prime contractor for the MAST computer, which is intended to be a NASA standard product offered for use at all NASA centers. The MAST 1750A is a cost-effective general purpose computer for high reliability space and launch vehicle applications. The MAST GSE provides a reliable system check of flight hardware, and will be used to develop MAST software for space experiments which will fly on NASA's Space Shuttle.

SCI's first shipment, which was delivered to NASA's Langley Research Center in March, was a GSE subsystem consisting of the Console Debugger/PROM (Programmable Read-Only Memory) Programmer and the EPROM (Electrical PROM) Eraser. These components make up a PCXT-based development system allowing operator interface with the MAST Flight Computer.

This GSE subsystem, the first of four scheduled for delivery, provides NASA personnel with a development station for inputting and checking out software for programming the MAST 1750A computer's array processor card. The complete computer for troubleshooting and debugging flight software.

During calendar 1989, SCI is scheduled to deliver a complete MAST 1750A GSE/Software Development Station, two functional equivalent flight computers, one Integrated Flight Unit, and an additional complete GSE system. Future expectations for this product are very high with future upgrades already being discussed at NASA.

Ten Percent Off is Still On!!!

SCI/Fortune's offer of 10% off on all Fortune purchases is still in effect. This offer is made to end users exclusively through the pages of /u/fortune news and is good on purchase made before July 1, 1989. If you missed the details last month and you didn't spot SCI/Fortune's ad on page 2, then here are the details:

An end-user will bring his original April or May issue /u/fortune

news mailing label to his or her dealer when he wants to make a purchase. The dealer will take 10% off the list price of the total order to the end user. Order must be received by June 30th, one original mailing label per order.

To current SCI/Fortune Dealers: If you haven't received requests for 10% off from you end users it might be because they are not subscribers to /u/fortune news. But you can help them out! Just call Josh Lobel or Mark Palmerino at (617) 894-6900 and they will send you copies of their publication. You can then offer 10% off to all of your customers.

SCI Rises in Fortune 500

For the fifth consecutive year, SCI Systems, Inc. has been included in Fortune Magazine's "Directory of the 500 Largest U.S. Industrial Corporations." The listing was published in the April 24, 1989 issue.

SCI was ranked 376 for 1988, as compared with 456 for 1987. In the 10-year Earnings per Share Growth Rate category, SCI was ranked 7th in the 500 and 3rd in the Computer Industry.

Southwind Graphics Demo Package Available for the 32:16 and Formula

In a continuing effort to introduce end-users to new SCI/Fortune products, Southwind and SCI/Fortune have joined forces to announce the release of a special demo package for the 32:16 and the Formula. More than just simple promotional materials, this demo is an effective tool for evaluating various Southwind products.

Priced at just $120, this package offers you the opportunity to test the impressive capabilities of Southwind's Tactician, Ezgraf, and Grafsman on an SCI/Fortune system before you make a purchase decision. You will be able to create multiple column spreadsheets, exploded pie charts and bi-level bar graphs, and much more.

Also included in the low package price are the manuals for all three of the Southwind products. Well written and easy to use, these manuals allow users to create even the most complex graphics and spreadsheet files.

The only difference between this demo package and the full blown counterparts is that you cannot save any changes made to it once you exit a file.

SCI/Fortune Has Moved

SCI/Fortune has just completed a move into their new facilities. Their new address is:

2000 Ringwood Ave.
San Jose, CA 95131
Phone: (408) 943-6200❑

SCI/Fortune Gets The Word Out

Dealer Open Houses Called a Big Success

Several months ago we reported on how SCI/Fortune was revitalizing its dealers by offering them services that help them service their existing customers better and aid them in successful sales techniques so that they could add new customers to their client base. We also reported on how SCI/Fortune is conducting "Open Houses" at their dealers' offices in a campaign to reacquaint both dealers and end-users to the new hardware and software that is available. We had the pleasure of attending one of the first last November and we felt that it was quite effective.

At that time we applauded SCI/Fortune for undertaking these endeavors and we heartily advised them to continue the process of letting Fortune owners and users know that they have some exciting new products. And they have continued!

What follows are some excerpts from letters that SCI/Fortune received from three dealers who have availed themselves of the "Open House" program and other services. The excerpts will be preceded by summary comments by SCI/Fortune:

If you haven't already taken advantage of our Open House Program, here's a chance to read about what you've been missing. Just recently, three of our dealers have written to tell us how beneficial the Program has been for their businesses.

Barry Dunn of *Barry Dunn and Assoc.* in Modesto, CA, wrote to our Marketing Manager to thank him and our entire staff for making his latest open house a big success. And Barry Dunn wasn't the only one with a kind word for our efforts. Many of his clients who attended the seminar had good things to say about us, too.

Gregory Coats of *Computer Investment Associates* in Tampa, FL, wrote that while he started out a skeptic, he is now fully confident of the positive effects of the services offered by SCI/Fortune. Greg and his staff have been especially impressed with the training services offered by our program, and the positive impact these courses have had on their sales.

Don Anderson at *ACI Computer Service* also wrote and praised SCI/Fortune's Open House that was recently held in Don's offices in Spring Lake Park, Minnesota.

And now for some excerpts...

Dear Jim,

We would like to thank you and Mariann Boesch for your help with our April 18 Open House and Fortune Users' meeting that same evening. The enthusiasm you generate about SCI/Fortune was passed along to our current and future customers that attended. Comments were made as to the "straight forward" answers given to their questions about the company, its products and SCI/Fortune's plans for the future.

Our customer base of law firms is realizing that they now need more than just a good word processor. The demonstrations on the Fortune 5000 generated numerous leads and upgrades to current customers when shown the capability of running virtually any application program available in both DOS and UNIX...

Sincerely, *Don Anderson*

Dear Mr. Jones:

Hats off to SCI/Fortune and you on your excellent dealer program! When we at Computer Investment Associates first met with your District Sales Manager to discuss possible reasons for becoming a dealer for SCI/Fortune, we were quite skeptical as to whether or not a major manufacturer would actually deliver the things we were promised... Of course, that skepticism has definitely been removed...

Below, I have highlighted the efforts SCI/Fortune has provided which have greatly contributed to our company's success:

1) SCI/Fortune arranged for our staff to attend the Frank Watts "Solution Selling Seminar." 2) SCI/Fortune arranged for our staff to attend a class on "How to Sell Medical Office Solutions." 3) SCI/Fortune has even given our sales staff strength needed to close tough sales with assistance making proposals and cost-justification documents for prospects.

Sincerely, *Gregory Coats*

Dear Jim,

On behalf of Barry Dunn & Associates and myself, I would like to thank you and SCI/Fortune for making our seminar, The SCI/Fortune Opportunity, a success.

Contrary to the hard sell approach practiced in the past, I feel that by providing users with information and answers to their concerns, we will generate more interest and enthusiasm for the quality of Fortune products...

I truly believe that we are on the right track. Clients are beginning to feel more comfortable and secure...

Yours truly, *Barry D. Dunn.*❑

Creating Bullets with Fortune:Word

Editor's note: *This article could not have been written without the help of* ***Mr. Scott Chapman****, one of SCI/Fortune's East Coast Technical Engineers. He spent the time necessary to figure out how to create a bullet, and then to explain it to us.)*

If you have an HP Laserjet, then you are probably faced with the same problem we have -- there's always some character you'd like it to print, but after hitting all of the possible characters on the keyboard, it still never emerges from the printer. The amount of frustration that builds from this predicament results in weeks of lost productivity. What we'd like to do in this article is provide you with the tools you need to find those missing characters.

There are actually two kinds of characters that we lust for -- there are the ones that are shown in the HP documentation, and that print with the self test, and then there are the ones that only exist in our minds, like the bullet. Let's address the easy ones first, the ones that the printer knows about.

The Laserjet II has a character set of about 255 characters. You'll notice on your keyboard you only have about 127 if you count all of the SHIFTED and CTRL combinations. So the question is how do we with our meager resources tell the HP to print out those other 128 characters? The answer is the **wheels** file.

In the last issue, we discussed the Line Drawing capabilities of Fortune:Word, and noted that you'd have to change the / **usr/lib/wheels/hp.whl** file in order to be able to successfully print them. In Fortune:Word, special characters are entered either with the Line Drawing facility, or by entering **CTRL-Y** sequences. The wheels file is actually kind of a replacement map. Take a look at Figure 1, which is an excerpt from the wheels file for an HP. It says "If you ever see a **CTRL-YAA** then send the printer a **\241**". You may wonder about what that **\241** is. It's called an octal 241, aka 241 base 8, aka 160 base 10. (To find out how we know that, find a conversion chart, or see the side-bar on base arithmetic.) If you look in your HP manual, you will probably see that a decimal 160 will print a Grave A. You can substitute in characters for any **CTRL-Y** sequence, so that you'll be able to print cent signs, copyright symbols, etc.

Things like bullets are somewhat more difficult. (Before we get too far into the discussion, we'll tell you that we have a disk created by Scott Chapman which has the necessary information to let you create bullets without knowing anything that follows.) In order to print them, we need to essentially program the printer to tell it where to put block dots and where to leave them white to make up the symbol that we desire. There is a section in the HP manual about programming raster graphics which gives some examples, but here's the principle. Suppose we want to print a tiny Christmas tree on a typewriter. We might do the following:

```
     X
    XXXXX
   XXXXXXX
  XXXXXXXXX
XXXXXXXXXXX
     X
```

We might be able to do the same thing using 1's instead of X's. Every time there's a 1, a black dot will print.

```
     1
    11111
   1111111
  111111111
11111111111
     1
```

In computer talk, we'd also have to put 0's where the 1's aren't, because we need something to take up the spaces where we don't want any dots. So we get the following:

```
00000100000
00011111000
00111111100
01111111110
11111111111
00000100000
```

The final step is to convert these binary numbers to octal numbers to download them to the printer. We won't go into all of the particulars on that right here, but we do discuss it some in the sidebar. Once you have the octal numbers, you need to convert them to actual 8-bit characters. This can be done with a relatively simple C program, and we just happen to have one written by Scott Chapman. It is available on the disk mentioned at the end of this article.

Once you have created the necessary data for your character (I guess we've taken a small leap there, but between the sidebar and the HP manual, you should be able to do it), you need to send it out to the printer. We need to use the **-T** (transparent) flag so that the data is not processed in any way. If our data file is called bullet, the command is:

```
lpr -T bullet
```

Once you've loaded the macro, it will stay in the printer until it's turned off. If you want to, you could incorporate the **lpr** command into your **wp2** shell script. You could also download it by putting the command

```
cat bullet > /dev/tty??
```
(where ?? is the port with the Laserprinter)

To use the bullet, you need to enter the last line in **Figure 1** into your wheels file. That sets up a **CTRL-Yi** as the bullet character. On your screen it will appear as an O with a slash through it.

If you'd like a disk with the necessary programs for the bullet and also the rolodex print programs mentioned last time, send $15 to The Cambridge Consortium, as you would for any other disk in our collection.

Figure 1.

^YAA	"\241"	#Grave A
^YAE	"\243"	#Grave E
^YAI	"\346"	#Grave I
^YAO	"\350"	#Grave O
^Yi	"\E&f1Y\E&f2X"	# Bullet Macro

Do you speak binary?

That's a yes or no question by the way.

We can't even think about this topic without Tom Leher's New Math song coming to mind. "You can't take 3 from 2, 2 is less than 3 so you borrow a 1 from the 8's column -- that's right, base 8 is really just like base 10 if you're missing 2 fingers.

Most of us spend our time thinking of numbers in base 10. Our money all comes in base 10 - 10 pennies to a dime, 10 dimes to a dollar, etc. Of course, everyone knows that policemen think in base 12 -- 12 donuts to a dozen, 12 dozen to a gross, etc. I suppose we all know there are 12 inches to a foot, so base 8 (octal) and base 2 (binary) may not be all that difficult to comprehend.

In a sense, all that base arithmetic requires is that you renumber the columns. For example, let's look at a number in base 10, let's say 75. If you had to explain what those two digits meant, you'd say it was 7 ten's plus 5 ones. If the number was 275, you'd just add 2 hundred's to that. Note that the column at the far right is one's, the next column to the left ten's and to the left of that hundred's. Stretching just a bit, we could also say that the right hand column is one's, the next column ten's, and the next column ten squared (aka 10 to the power of 2 or 100).

To work in a different base, we just rethink those columns. Instead of 10 squared, 10 to the first (10), and 1's, we have 8 squared (64), 8 to the first (8), and 1's. Like this:

```
64      8       1
        7       5
```

In base eight, 75 becomes 7 **eight's** plus 5 one's. That's 56 + 5, or 61 base 10. If we actually wanted to convert the number decimal number 75 to base 8, we'd have to analyze it. 75 contains 1 x 64, so there will be a 1 in the 64's column. There's also room for 1 x 8, so there will be a 1 in the 8's column. 64 + 8 = 72, so we still need to add 3 in the 1's column. That means that 75 base 10 is 113 base 8. Look

```
64      8       1
1       1       3
64+     8+      3 = 75
```

Let's suppose we have octal **\234**. That's

```
64      8       1
2       3       4
2x64+   3x8+    4  or
128+    24+     4  = 156 base 10.
```

Base 2, binary uses the same concept, except we only have the digits 0 and 1. So our columns become:

```
128     64      32      16      8       4       2       1
```

Note that the columns are all twice as big as the next one, that's because they're powers of 2. 2 squared, 2 to the third, etc. Let's see what 156 base 10 is in binary

```
128     64      32      16      8       4       2       1
1       0       0       1       1       1       0       0
128+                    16+     8+      4
  = 156
```

So the binary number is 10011100.

Lastly, there's a trick to convert binary to octal. Each column of octal represents three columns of binary. 10011100 becomes: 10 011 100

Convert each of the three chunks to a number just using the three binary columns 4 2 1 so

```
10      becomes 2
011     becomes 3
100     becomes 4
```

Put all those together into a number and you have 234. With a quick wave of the hand, if you look up above, you'll see that it's the same number we started with in octal.

Good luck -- and be thankful for all of your fingers. ❑

/u/help

Find Out About Formula 8000 Comm Ports, and the HP Deskjet

Question: Tom Brown of Christian Tours in Atlanta called recently with some comments and some questions. First of all, he has a **Formula 8000** which had been configured with 2 6-port CommA boards, plus the 4 ports which come on the motherboard. These ports have a bracket that comes up off the motherboard and makes them look like a 4-port CommA.

Tom had been trying to get a modem to work off of one of the four ports on the motherboard for almost a year, and only after a chance observance noticed that the presence of a printer on one of the other of the 4 ports was fouling things up. It seems that the printer was holding one of the lines high on all of the ports. We don't have a technical explanation, although it seems reasonable to keep your printers on the standard CommA's and not on the first four ports.

He also noticed that when he added a third CommA, the presence of that board seemed to change the **getty** definitions for all of his original terminals. Removing the board corrected the situation. We're checking on this one.

Finally, he had a question for us. He recently purchased an **HP Deskjet** printer, which is sort of a cross between a laser and a more traditional printer, at least in terms of cost and output quality. It's an inkjet printer that has output almost equal to a Laserjet, but at a cost well under $1,000. Although the font widths don't match the Laserjet exactly, he is very pleased with it in general. His problem is that he wants to print on a form that requires the vertical spacing to be slightly different that the normal. He has found that he can modify the printcap file to achieve the required spacing, but he doesn't know how to do it sometimes while leaving the normal spacing as the default. Any thoughts?

Answer: There are several ways to approach this problem. If you're printing from **Fortune:Word**, you can try to change the parameters in the **/usr/lib/wheels** file for your printer. Another way that we've discovered is a little trickier. We actually create a new printer entry in the **printcap** file with the required modification. If our original entry was for the Laserjet, we might call it LASERJET2. When the system goes to print, it uses the printer name found the /etc/devtype file. The question is how to get both the LASERJET and LASERJET2 definitions in there for the same printer. The answer is to create another entry in the **devtype** file for a new device. Let's suppose the printer is attached to **tty03**, we might call the new device **ptr03**, although the name can be anything you want. The new line in the **devtype** file is shown in Figure 1. Note that we have LASERJET as printer 1 and LASERJET2 as printer 2.

After you've modified the **devtype** file, you need to set up a new spool directory for the new printer. Again assuming that we are creating printer 2, we give the following commands:

```
mkdir /usr/spool/lpd/pr2
cp /usr/spool/lpd/pr1/* /usr/spool/lpd/pr2
chown daemon /usr/spool/lpd/pr2
chmod 777 /usr/spool/lpd/pr2
chmod 777 /usr/spool/lpd/pr2/*
```

Finally, the tricky part. We create our new device called **ptr03**, but we do it simply by *linking* it to the old **tty03** device.

```
cp -l /dev/tty03 /dev/ptr03
```

What this does is create another name for that port. When the computer goes to print, it doesn't know that it's really sending out the same physical port as **tty03**. (It's not really as smart as we sometimes think.) All you need to do is to tell it to print on printer 2 instead of 1, and you should get the desired result.❑

Supercharge Your Modem Through The Magic of Compression and *Arc*

If I could tell you how to make your modem transfer information up to **5 times faster** than it does now, would you be interested? Or let me put it another way, suppose you could reduce your modem related phone bills by *up to 80%*, would you be interested? Well, if so, read on...

How I use to do it.

There are many times in our business when we need to use our modem to transfer information between computers. I could talk about any number of situations to get across my point, but I've picked one which I feel highlights many valid points.

I do some work for one particular client wherein I need to transfer a data file (which is created on a Fortune computer) to a **DEC VAX** computer so that I can use **SPSSX** (a statistical analysis package) to analyze the data. Once the analysis is done, I transfer the output file back to the Fortune computer. It is not uncommon for me to produce an output file that can vary between 80K to 160K. When I use my 2400 baud modem and **kermit**, it can take between 11 and 25 minutes to transfer files of this size. Now, as far as I'm concerned, that is "down time." In other words, it is time that the computer, modem and phone line are tied up doing something - which usually means that I am not able to get other work done. And, of course, if I'm stuck with a 1200 baud modem, then things are about *twice* as worse!

Supercharged Modem

I knew there was a solution to my problem which would allow me to, in essence, supercharge my modem. And that solution has to do with *compression*!

You see, one of the major factors that control how long it takes to transfer a file from one computer to another via a modem is how large that file is. "Largeness" is measured by how many "bits" the file contains. Generally, each character in a file is composed of 8 bits - otherwise known as a *byte*.

What file compression does is reduces the amount of bits that a file uses. We won't get into how this is accomplished in this article, but for our purposes, it is sufficient to know that we can reduce the amount of space that a file takes up.

So, there it is! We know that it takes longer to transfer a large file than it does to transfer a small file. Thus, if we can make our files smaller through the magic of compression, we can reduce the amount of time it takes to transfer that file. For example, if we can take a 100K file and reduce it so that it takes up only 20K, then it will take less than 3 minutes to transfer that file rather than almost 14 minutes (using **Kermit** at 2400 baud).

What I Do Now

We use a couple of different compression programs on our Fortune. One of the main ones is called, believe it or not, **compress**. This program does an excellent job of reducing the amount of space that a file uses. We offer **compress**, along with many other useful programs, on our disk called **Compressor's Delight**.

My problem with the Fortune to VAX connection is that a comparable version of **compress** did not exist on the VAX. So, even though I could **compress** files on the Fortune side, I couldn't **uncompress** them on the VAX side. However, the VAX did contain another widely used compression program called **arc**. **Arc** is a compressing and archiving program that is best known in the IBM-PC world.

So, I procured the C source code for arc (see last month's article on accessing **Usenet** for more information on this) and compiled it so that it worked on the Fortune computer. Then, after I performed a statistical analysis on the VAX, I would "arc" the output file. This would often reduce the size of the file to about 20% of its original size. Thus, I was able to transfer that file between the computers 5 times faster than the original file!

Now, What Do You Do?

Well, if you would like to turbo-charge your modem, you should send for our new two disk set that we call the **Fortune-To-PC Transfer Set**. This set contains one Fortune disk that contains 1) **Ckermit**, 2) **Compress** and 3) **arc** for the Fortune. The set also contains one IBM-PC compatible disk that contains 1) **PC-Kermit** and 2) **arc** for the PC. This two disk set costs $25. Each individual disk costs $15 and our standard quantity discounts apply. For more information on modem supercharging, please feel free to call or write us at the address and phone number listed on page 3 of this magazine.❑

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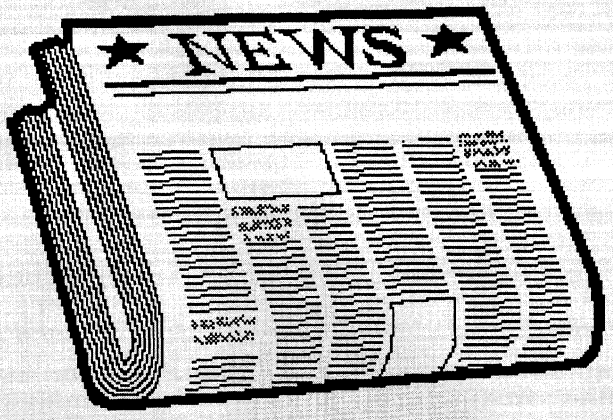

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/u/fortune* news

The Newsletter for Users of SCI/Fortune Computers June 1989 / Volume 6 Number 6

Upgrade Or Not - Having A Tough Time Deciding?

- Dave Kloes discusses the pros and cons of an upgrade to a Fortune 5000
- Ray Wannal discusses Concept Omega's new AP package and Solution-IV
- News from SCI/Fortune--more sales, lower prices and new diagnostics released
- Plus /u/help, The BASIC Advisor, System Administration and more

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Now you have a great reason to contact your SCI/Fortune dealer to see what you've been reading about in **/u/fortune** *news*. Remember, this offer is only good for orders received through July 31. And, you must present your original **/u/fortune** *news* mailing label to receive the discount.

If you have further questions about this offer, or want to find the name and telephone number of the SCI/Fortune dealer in your area, please contact the **Sales Service Department** at SCI/Fortune in San Jose, California, at **(408) 943-6200**.

Thanks for your business, and thanks for reading /u/fortune news.

/u/fortune *news*

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The text for this newsletter was prepared using an SCI/Fortune 5000 for both text input and typesetting. The typesetting was accomplished by using the Aldus Pagemaker program under VP/ix, which is a DOS emulation.

CONTENTS

From The Editors...

We Need Some Information

Would you be interested in a software product that would allow you to read your Fortune floppy on your IBM-PC AT?

For quite some time we have had our AT clone talking to our Fortune 32:16 by means of a wire connecting the two machines. We use kermit on both sides to carry on the conversation and have had good success. However, we've often wished that we could just take a floppy from the Fortune, stick it into the AT and copy our files. This desire has become even more pronounced as we experiment with the Fortune 5000 which has exactly this capability with VPIX.

We are strongly considering the possibility of creating such a product. The way it would work is that you'd select the files on the 32:16 or Formula computer that you wanted to copy to a floppy. Once the files were copied, you'd take the disk over to your AT and the files would be restored. Since the Fortune uses a higher density disk drive than the standard 360K drive found in PC's, this process would only work with AT's, or with PC's that were equipped with 1.2 meg floppy drives. (Fortunately, this is not very expensive).

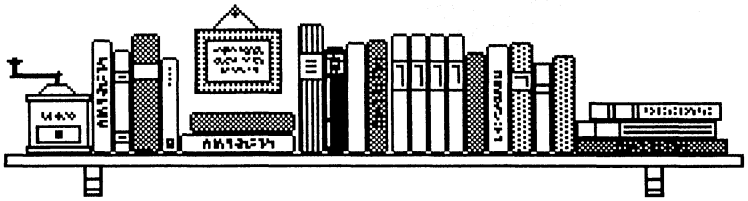
We feel that this product would be especially helpful for people who want to transfer information to PC's that are not in the same physical space as their Fortune's. Perhaps you've got a Fortune at work and a PC at home. Maybe the main office has a Fortune and some smaller offices have AT's. It might also be useful for individuals who regularly transfer information between the Fortune and a PC that is in the same physical space - this product would be easier to use than kermit or other file transfer programs.

We have already verified that it is possible to do what we are discussing, but are curious about how many Fortune owners would be interested in this utility. Pricing would depend on volume--we are anticipating a price somewhere between $125-$175. If you are interested, please take the time to fill out the information card included in this issue. Or, you could write or call us right away. Our phone number is 617 894-6900.

Tell us how we are doing and give us some suggestions for topics that you would like to see covered.

Included on the information card are some questions concerning how we've been doing in terms of providing you with information that allows you to use your computer to its greatest potential. We are very dependent on feedback from our readers so that we can meet the needs of Fortune owners and constantly improve the quality of **/u/fortune** *news*. So, we do ask you to take a few minutes from your busy schedule and fill our the information card that is included with this issue. In this way, you can directly influence the content of **/u/fortune** *news*.

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

Last month Mr. Bill Clarke of Concept Omega's Thoroughbred Division was kind enough to send us a draft copy of the users manual for the new "SOLUTION-IV" Accounts Payable package which is due to be released sometime this year. We promised to read it (which we did) and comment at our next available opportunity (which we will do in a moment).

We view this whole Fourth Generation stuff with mixed emotions. In one sense, we are very excited about the offers of greater productivity, "housekeeping", new bells and whistles and ease of program maintenance. Older BASIC programs are not lost in 4GL: they can be converted and used temporarily until the end user becomes totally seduced by the new environment. And programmers, being the artists they are, do not have to sacrifice individuality the way they do with other 4GL products.

On the other hand, we lived through the premature release of IDOL-II with all its quirks and are still apprehensive when it comes to relying on new products. We have been using IDOL-IV to a limited extent to generate new applications and often find it a worthy opponent. We appreciate the Views, but we sometimes have trouble managing them. This may be because we are trying too hard, or it may be that the product still needs work. The Text Fields are especially helpful, but we have spent much time trying to incorporate them into a Report-IV program. The documentation is not exactly stellar regarding this problem. SCRIPT-IV surely does handle most of the bothersome "housekeeping" chores associated with 3GL programming, but one must remember to include certain error handling routines or a script will compile nicely only to bomb in operation. Therefore we cannot assure our readers that SOLUTION-IV accounting will be the second most enjoyable experience in their lives. It may, however, find a position somewhere in the top ten. Based upon the documentation we just read, it will be an improvement over IDOL/BAS accounting.

We sat down one sunny weekend afternoon and opened a can of beer and the the SOLUTION-IV Accounts Payable manual. On the first page, entitled "How to Make the Greatest Use of this Manual", we read:

"With this manual we have attempted to create reference material that is easy to read, yet contains all of the information you need to set up and run the Thoroughbred SOLUTION-IV Accounts Payable system."

Sure. I'm from Missouri. Show me. The book then suggested seven steps to be followed:

Know how your computer works.
Study the conventions section in the Appendix.
Read, or at least browse, the entire manual.
Install the system.
Use the demonstration data.
Begin using the system
You're off and running! Keep the manual handy.

We figured we knew how our computer works, so we began by studying each appendix. There were five of them as well as a glossary.

Appendix A was called "Converting to SOLUTION-IV Accounting". It was in three parts: converting from a manual system, converting from another computerized system and converting from Thoroughbred Accounting Version 5.0 or 5.1. This last part intrigued us. Could it be that we poor, neglected Fortune 32:16 users would be able to move our files into 4GL? After all, the 5.0 and 5.1 files are essentially identical to the files used in IDOL/BAS. Here is the entire text on the subject:

"It is possible to convert some of your old Thoroughbred Accounting information to SOLUTION-IV. The details are covered in the SOLUTION-IV Utilities manual."

Well, shucks! We didn't get that one! We will try to get more information from Concept Omega.

Appendix B, called "Understanding the Accounting Theory

Behind Accounts Payable", was a five page lesson in Business Accounting 101. It was actually written for human beings!

Appendix C, "Worksheets/Surveys", was supposed to contain a startup checklist, procedural checklist and file worksheets. These items were not included in the draft.

Appendix D is the one we were advised to peruse first. It was called "Conventions" and was broken into four parts: Manual Conventions, General Conventions, File Maintenance Conventions and Naming Conventions. The first three will be very valuable for end users. They explain how to follow the directions outlined in the manual in order to operate the computer. The Naming Conventions section was provided for technicians. This section was written in a style reminiscent of the original IDOL/BAS documentation. Don't get us wrong, the information here will be invaluable for the programmer. It just seems that the non-technical reader should be warned that it is not necessary to read this section in order to understand accounts payable.

We loved Appendix E. It is "What to do with all the paper generated". Isn't that great? The whole appendix is summarized nicely in the closing note:

"Try not to let the filing of all these reports get ahead of you. It may seem like a hassle now, but in the event of a problem with your system, or an accounting or IRS audit, you will find these reports invaluable in proving what exactly happened in your system. Corrections become easier to make and audits take less time - both saving you time and money."

Following these appendices was a Glossary. Here we found the best examples of the new versus the old documentation. In the original IDOL/BAS manual from the BASIC IV package we had this definition:

"ACCT NO GL (LN=6, PR= , KI= ,ET=B, PI= ,DC=G/L256) Contains a General Ledger account number that identifies a specific account within the master chart of accounts. This account number along with the company code is the key to the General Ledger Master File."

Compare this with the SOLUTION-IV definition:

"Account or Account Code: An account is the basic component of a formal accounting system. It records all additions and deductions and shows balances of assets, liabilities, owner's equity, revenues and expenses.

"There are two types of accounts: debit and credit. Asset and expense accounts are usually debit accounts. Liability, equity and revenue accounts are usually credit accounts."

Following our study of all appendix and glossary information we dutifully began to read (or at least browse) the entire manual. Although several pages and all graphics were

missing and typographical errors ran rampant, we believe we obtained a good overview of the product. It was definitely organized for the computer illiterate and very easy reading. Besides the introduction and appendix sections we reviewed the following chapters:

Accounts Payable Menus (11 pages)
Setting Up Accounts Payable (17 pages)
Vendor (file) Maintenance (18 pages)
Transaction Processing (18 pages)
Check Printing Menu (10 pages)
Accounts Payable Reports (21 pages)
Period End Processing (8 pages)
Sample Reports (no pages in our book: 20 reports)

Care was taken at each step to insure the reader was not getting confused. Further, we did not find ourselves becoming bored at any time during our reading. In general, we must grade the work with a B+. Once the typos are corrected and the graphics are included, the book will easily rate an A.

So what's new and different with SOLUTION-IV Accounts Payable? In addition to all of the features in IDOL/BAS, such as check printing, cash requirements reporting, aging reports, etc., the new software will include:

The ability to operate on either a Cash or Accrual accounting basis;

Multiple (unlimited) bank accounts with reconciliation available in payables, receivables and/or payroll;

A text field in the Vendor Master File in which ongoing notes (such as phone call activity) may be recorded and maintained;

Multiple contacts and alternate addresses for each vendor;

The ability to change a vendor number or inactivate (delete) a vendor indicating you no longer wish to do business with that vendor;

A two-year audit trail on activity with vendors;

The ability to maintain and report vendors within various classifications;

The ability to operate on either a Vendor Invoice or Company Voucher system;

Automatic entry of "recurring payables";

Partial invoice payments;

The ability to enter checks without first entering a vendor invoice or voucher;

Automatic processing of 1099 forms if desired;

End user ability to customize aging, general ledger posting, and even forms (including checks);

Multiple pre-sorted options on generated reports;

Fourth Generation file maintenance, which, because of its use of keyboard keys such as insert, delete, page up, page down and arrow keys, makes maintaining files more like editing a word processing document.

Because this is an accounting application generated in 4GL, end users will find less of a need for software support and outside training. We assume that help will be available on screen and that end users will be able to perform many of their own software modifications.

Where does this leave the old software support companies? We could all start dedicating our time to installing small, turnkey systems to first time users. But no matter how easy computers become, most buyers will not take the time to read the instructions. They would rather be hand held. And specific vertical needs will continue to exist. They will need to be designed and written, and IDOL-IV is still primarily a technician's tool. Until such time as Fifth Generation eliminates programming and keyboards, there will still be plenty of work for everyone. So let's not all go planning to retire just yet, okay?❑

Software For The Fortune 32:16 And Formula

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

W-2 LINK ($395.00) - designed for companies with over 250 employess who must report W-2 payroll information to the Social Security Administration (IRS) via magnetic tape or diskette. Automatically takes information in the Business Accounting System (BAS) Payroll module and puts it onto diskette in the format required by the IRS. Also available for PAC software. also.

1099 LINK ($295.00) - this product produces Form 1099's required for submission to the IRS and is an extension to the standard BAS Payroll module.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

WESTERN LINK ($195.00) - provides instruction on how to use your Fortune for sending/receiving telex messages using Western Union's Easylink. Can replace your telex! Fortune ITE or Handshake software required.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

FINANCIAL LINK ($295.00) - passes BAS Income Statement and Balance sheet to Multiplan or UltraCalc. Stores and instantly reprints these statements for current/previous period without sorting.

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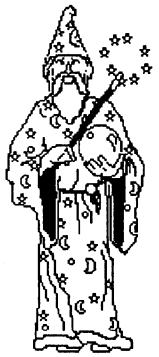
System Administration: Part 26

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.



by Dave Kloes

This is the last article that we will write that will be solely devoted to the For:Pro operating system for the Fortune 32:16 and Fortune Formula. With the introduction of the Fortune 5000, we find the need to broaden our discussions to also include information about the two versions of Unix that are used on that system. In this issue, we have broken out our discussions into Part 26a and 26b. Part 26b is our introduction to 386 technology and the Fortune 5000. Starting with the next issue, we will change the format of the articles to include subjects relevant to all three Unix versions. For example, we have already received letters from those that want more information on specific subjects. We have also received some letters from our readers about some of the things they have done to make the job of administering their system easier. From time to time, we will highlight and expand on the contributions from our readers for you. If you have a particular Unix subject you want us to expand on or if you want to share something you have done with other readers, please send your letters to: **Uni-Komp**, 5715 N. W. Central Dr., Suite F112, Houston, Texas 77092

In the last issue, we talked about "cold booting" the system and how to access your hard disk through the "back door". In this issue, we will discuss how to format and reload your hard disk. In Part 25, we mentioned a few of the reasons why you might find yourself in a situation where you want to re-initialize your hard disk:

1. Hard disk failure where the disk has to be replaced.

2. Suspected file system damage where reloading the operating system using "S5" does not solve the problem.

3. When the WD Controller has been replaced.

4. Reorganize the disk to store data "contiguously" for better performance.

5. Upgrade to a new hard disk.

One thing we should note is that the procedures we are about to discuss are for your primary hard disk - not other hard disks that are on your system. SCI/Fortune has software that should be used for preparing expansion hard disks for use. In some of the situations above, you are in a position to backup your system before re-initializing the disk. If this is the case, you should do a complete system backup. If you have a tape streamer, backup your complete system using the Tape Streamer software and specify the "/" directory as the directory to be backed up. If you are backing up to floppy disk, use the following command to do a complete system backup:

```
# cp -routsVBX /dev/fd02 790 /
```

You should be logged in as "root" or "manager" in either case. These backups can be used to easily restore the system after the hard disk has been re-initialized. You would not normally restore a backup of a corrupted system. These procedures should not be taken lightly. We re-initalize a hard disk only after all other attempts to solve the problem have failed.

Initializing The Hard Disk - In this procedure, we assume that the hard disk to be initialized is already installed on the system and that you know the disk type. You will need to know the disk type code as defined in the "/etc/disktab" file before you can format the hard disk.

1. Follow the procedures in the last issue for going through the "back door" until you see the following screen:

```
Cold boot Release x.x
Select a function key:

<F1>  To completely erase and reload your disk

<F3>  To retry starting up the system as specified
      in the Maintenance Screen

....  (Anything else typed in will be executed as
      a maintenance mode command.)

Select: []
```

2. Depress the <F1> key to select the option to completely erase and reload your disk. The next screen you see depends on whether the configuration block on the hard disk can be read or not. For example, on a disk that has never been formatted on the Fortune system, you will get a message that says the disk type cannot be determined and you

will be automatically taken to the screen where you can select the disk type. On a disk that has been formatted and that has a good configuration block, you will see the following screen:

```
Your Fortune computer is currently configured to work
with a XXX disk.

Please check the SYSTEM CONFIGURATION DECAL located on the
outside of the computer to determine that this is correct.

If you are unable to find this Decal, contact your
Fortune dealer.

Is DISK XXX printed on your SYSTEM CONFIGURATION DECAL?

                Press <F1> for Yes
                Press <F2> for No
```

The "XXX" above would indicate the disk type for your drive. For example, a Rodime 20MB drive would be C20.

The way you respond to this question determines the next action to be taken. If you want to reformat the disk, you should answer "No" or <F2> even though the disk type is correct. If you answer "Yes" or <F1>, a new filesystem will be created on the disk but the disk will not be formatted. Normally, we recommend that you always answer "No" so that the drive will be formatted and tested. If you suspect that either the hard drive or WD Controller is bad, this procedure will more than likely confirm this for you.

If you answer "No", you will be taken to a screen where you can select the correct disk type. Once selected, the drive will be formatted and tested. Note that if this is the first time you are formatting the drive, you will get a "configuration block not found" type error message - this is normal.

When the testing of the drive is complete, you will get a screen where you can select the number of "swap" units that are to be used. We discussed the concept of the swap area on your hard disk in an earlier article. Basically, you should count one swap unit for each terminal that will be on the system. For example, if you have six terminals (including the console), then you would select six swap units. The swap units options are displayed in ranges so select the range that would include six swap units. After you select the appropriate number of swap units, the system will calculate the amount of your hard disk that the swap area will use. It will also give you a message that suggests a range of how much swap space should be allocated. Obviously, the larger your disk drive, the more swap area that should be allocated.

After you have selected and confirmed the swap units, you will see the message: `Making filesystem ...`

At this point, the swap and data partitions on the hard disk are made. When this process is complete, the data from the three cold boot floppies will be copied onto the hard disk. You will be prompted on the screen to insert each of the three diskettes. Note that you will be required to restart the system after the files from the first diskette have been copied and before you are asked to insert the second volume.

After the third volume has been copied onto the hard disk, you will be brought up to the normal date and time screen. At this point, the basic FOR:PRO operating system has been installed and you can restore your system:

1. If you did a complete system backup using the command we gave you earlier in the article, you can restore the entire system from that backup set by logging in as "root" and entering: `cp -routsVR /dev/fd02 /. /`

This will restore all of the data files and programs that were on your system when you did the backup. You will not have to restore any original software if the backup and restore was done using this method.

2. Your normal daily backup should include your END-OF-DAY PROCEDURE (if you are using BAS), and a backup for your Fortune:Word, Multiplan or other system data files. If you did not get a chance to do a complete system backup but you do have a daily data backup then you would re-install each of the software packages such as Fortune:Word. Then you would restore your daily data backup.

There are too many different configurations out there for us to talk about all of the backup and restore possibilities. Normally, your system consultant would be involved with you during this whole procedure. Your periodic backup strategy should be done in a manner that will minimize the amount of work to be done if the system ever has to be restored.

We have covered a lot of information about FOR:PRO in this series of articles. As we start talking about the versions of Unix that are available for the Fortune 5000, you will see that many of the commands and concepts will be the same. One of the reasons for the popularity of Unix is that the same operating system can run on different machines. As we talk about the Fortune 5000, you will see that the upgrade of your current Fortune 32:16 to the Fortune 5000 will not be as difficult as you think. In addition, you will be working with an operating system that you should already be familiar with.

For those of you that are new subscribers and for our other subscribers who might need to reference the material, we leave you with a list of the topics that we have discussed in the System Administration series. You can obtain copies of any back issues by contacting The Cambridge Consortium.

Part 1: System administration duties and responsibilities.

Part 2: "what" command - to determine version of software for ordering updates and upgrades; FOR:PRO directories; "root" and "manager" logins; ".profile" file; "set" command - shows environmental variables.

Part 3: /b directory - BASIC files and programs; /bin directory - system administrator commands; /dev directory - device special files; Partitions (filesystems) and memory; "chmod" command - to change permissions; Raw and character device entries; "mknod" command - to manually create device files; "mkdevs" command - automatically creates device

files; "dd" command - used to check disk blocks

Part 4: /etc directory - administrative files and commands; "cold boot" diskettes; "devtype" file - stores device definitions; Comm A; "ttys" and "ttytype" files - define system devices; "termcap" file - terminal capability definitions

Part 5: "termcap" file (continued); "grep" command - find patterns in files; TERM variable; "export" command - makes variable values available for subshell use; "printcap" file - printer capability definitions; "ed" line editor

Part 6: "vi" screen editor

Part 7: "group" file - shows defined groups; "passwd" file - shows valid login accounts; How to add new users to the system; "passwd" command - used to change a password; "newuser" command - user friendly way of adding users; "newgrp" command - to change to a new group

Part 8: Serial and parallel defined; "devtype" file - stores system device definitions; "devconn" command - user friendly way to define device connections; "disktab" file - definitions of disk drive types; "rdconf" command - to read configuration block; More about the "ttys" and "ttytype" files; "motd" file - stores "message of the day"; "echo" command - to echo something to the screen or to a file; "fstab" file - filesystem table for disk partitions

Part 9: Cautions about modifying system files; "mount" command - "attaches" floppy and hard disk partitions to a directory; "umount" command - "detaches" floppy and hard disk partitions from a directory; "format" command - prepares floppy and hard disk drives for use; "mkfs" command - used to make a filesystem on floppy and hard disk drives

Part 10: Partitioning floppy and hard disks; Adding additional hard disks to the system; Explanation of the "swap" partition

Part 11: Partitioning floppy and hard disks (continued); "dskselect" command - to select disk type from "disktab" file; "mkconf" - to make configuration block; "lost+found" directory; "mklost+found" command - to make "lost+found" directory on a partition

Parts 12, 13, 14, 15: Floppy disk backup using the "cp" command

Part 16: Floppy disk backup using the "tar" command

Part 17: Tape backup; Why the need for backing up to tape?; Tape streamer installation options; "st" command - tape streamer control program; "far" command - tape streamer backup command

Part 18: the "/etc" directory (continued); rc - system startup script; mid - command for machine id number; profile file - global login script; pstat - command to print system status; setdt - set system date/time; shutdown - shell script run for system shutdown

Part 19: the "/m" directory - menu system files/commands

Part 20: the "/sa" directory - system administration files; the system "configuration menu"; the system "maintenance menu" ("uconf" command)

Part 21: the "/tmp" directory - temporary files; the "/u" directory - user data files; the "find" command; "oldstuff.sh" - shell program for managing aging files; "cleanup.sh" - shell program for cleaning up unwanted files

Part 22: the "/unix" file - the heart of the system (kernel); the "/usr" directory - adm, bin, include; find, lpdun, lpmv, lpq, lprm, tee, tty, what commands

Part 23: the "/usr" directory (continued) - lib, man, spool, lpd, uucp, uucppublic, mail

Part 24: the "/usr" directory (continued) - tmp, ucb, more, page, vmstat, tset, clear, compact, uncompact, ccat, ex, expand, unexpand, fold, head, num, printenv, reset, strings, ul, users, vi, whoami

Part 25: "Cold Booting" the system - how to access the hard disk through the "back door"

Part 26: Formatting the hard disk and reloading the operating system

One of the jobs of the System Administrator is to be informed on the latest and greatest in the hardware and software worlds. There always comes a time when it is up to you to recommend to the POWERS-THAT-BE when it is time to upgrade. Whether you think it is the time or not, you owe it to yourself to read the article beginning on the next page.

Why The Fortune 5000?

In this article, Dave Kloes discusses the pros and cons of upgrading to SCI/Fortune's new computer - the Fortune 5000. He delineates some of the issues System Administrators and Fortune 32:16 owners should consider when deciding to upgrade their existing hardware.

One of the less frequent but more important duties of the System Administrator is to keep informed on the current trends in the computer industry. You don't have to be a "guru" to be in a position to advise management when the time comes to consider purchasing new technology or software. A little reading here and there, however, would be helpful. The purpose of this article is to pause for a moment and talk a little about where we have been; where we are; and where we are going.

As many of you already know, Fortune Systems was one of the first companies to market a computer system using the Unix operating system. The company that eventually became SCI/Fortune is now marketing the Fortune Formula and has recently introduced the Fortune 5000. Each of these systems is based on the Unix operating system as well. The Fortune 5000, however, is different than the traditional Unix system we have seen in the past. First of all, as you will see, it is not a "Unix only" system like the 32:16 or the Formula. In addition, there are at least two Unix versions that are commercially available for the system. What makes all of this possible is the 386 chip which is the heart of the computer system. What this means is that we now have more computing power available for less money. Of course, this has been and always will be the trend in the computer industry. While we are evaluating 386 technology, they are already talking about the introduction of 486 technology by the end of this year. If you put off the decision to buy the latest proven technology until you evaluate the newest announced technology, you will never buy new software or hardware. We all know that just like your car, the minute you buy a computer system, it is outdated.

There are some questions we can ask ourselves about our current system that help in determining whether it is time to consider buying new technology:

1. **How does the speed of the current system compare to the new technology?** The type of chip used, memory, and MHZ are some of the major factors. For example, most 386 systems are either 16, 20, 25 or 33 MHZ. The Fortune 32:16 is 6 MHZ - that's quite a difference. In addition to the cost of memory, the expandability of memory is also a factor. You want a system that can grow when you grow. Obviously, any new chip that is introduced will do things faster than previous versions.

2. **Are there indications that your current system will no longer be supported?** There is good news and bad news here. The good news is that if the system you are using is no longer being manufactured, you will find that purchasing replacement parts over the short haul will be cheaper. The bad news is that over the long haul, the parts will be hard to find and may cost more if you do find them.

Once a system becomes "obsolete", operating system upgrades become less frequent. In addition, software manufacturers in many cases, stop upgrading and/or supporting the software on that particular system. Many of the dealers that supported the system in the past, stop support because it is too hard to keep current with both the old and new technologies. The companies that are sales oriented are forced into this position by the market demand for the new products.

When you can buy a machine today for $400.00 that cost you $8000.00 four or five years ago, this is a good indication that you are clinging to old technology. This is the best time for those of you that are satisfied with the performance of your existing software and hardware. Obviously, if this is the case, there is no need to change systems. We are not saying that purchasing the new technology is the appropriate decision for all Fortune 32:16 users.

Our intent here is not to indicate that the 32:16 line is obselete. In fact, according to Jim Smith at SCI/Fortune, the 32:16 computer is still being manufactured and are on their price list. SCI/Fortune stands by these systems for support and spare parts.

3. **Can your system communicate with the outside world?** In this day and age where there is an increasing need to communicate with other computer systems, it is important to understand just how easy (or hard) a task this is for your system. We have done quite a bit of work recently in setting up systems that must transmit bank information from one system to another. The IRS now requires certain payroll information to be transmitted to them via diskette or tape. Doing these kinds of things are much easier and less costly on a 386 based system such as the Fortune 5000.

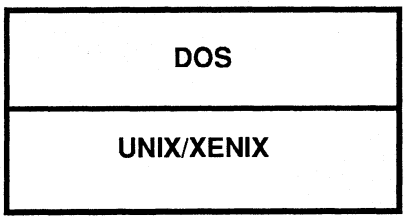
4. **What is the cost of maintenance?** In general, the older something gets, the more it breaks down and the higher the cost to maintain it. At some point in time, it is cheaper in the long run for you to purchase a new system than to maintain the old one. In fact, if you are paying for an annual maintenance agreement, the best time to consider the purchase of a new system is at renewal time. The Fortune 5000, for example, has a one year warranty on it. By purchasing the new system, you can apply the money you saved for the one year contract on the old system to the cost of the new system. You should also compare the cost of maintenance of the old and new system to see if there are any savings there.

5. **Is your software portable?** This is an issue that is getting more attention than ever. The cost of the software, in the long run, by far exceeds the cost of the hardware. In addition to the initial cost of the software, most of you also paid for training, modifications, upgrades and support. We doubt that most of you would want to go through THAT again! It should therefore follow that you would want this same software to be able to run on your new system - assuming that you are satisfied with it.

One of the reasons for the growing popularity of Unix is that the same software will run on many different machines. For example, the three major application programs on the Fortune 32:16 will run on the Fortune 5000 - Fortune:Word, Multiplan, and the Business Accounting System. For those that want to change, multi-user versions of programs such as Word Perfect, Wordstar, AutoCad, Lotus 1-2-3 and Dbase are also available.

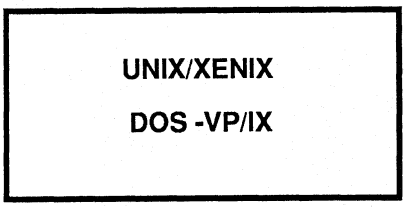
For those that want to run DOS versions of the same software, there are three basic configurations on the Fortune 5000:

Configuration 1 - Split your hard disk(s):



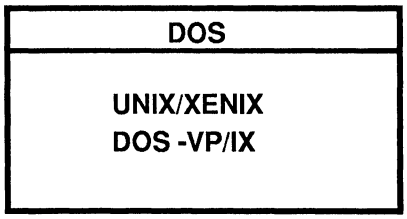
In this configuration, you can run either DOS or Unix, but not at the same time. This would not work if you needed access to both operating systems at the same time. You could, however, do you Desktop Publishing in DOS in the evenings and run Unix during the day. Another problem with this configuration is that you must decide how much of your disk to allocate to DOS and how much to allocate to Unix.

Configuration 2: Emulate DOS under Unix



In this configuration, Unix is the primary operating system. You have already seen some articles in **/u/fortune** *news* that talked about VP/ix, which is the software that emulates DOS under Unix. In this case, the entire disk is allocated to Unix and your DOS files exist and take up space just like your other files do. One disadvantage of VP/ix is that it is memory intensive. Normally 1 to 2 megabytes per VP/ix user is recommended.

Configuration 3: DOS pure, Unix, and VP/ix



In this configuration, you get the best of all worlds. You have a small pure DOS partition to use when speed is a major factor and Unix is not needed. You also have the multi-user Unix environment and VP/ix for those DOS applications that need to be run concurrently with Unix.

All of these configurations give you a wide range of options for purchasing software that is portable between DOS and Unix systems.

6. **Is the hard disk expandable?** Generally, the cost of hard disk drives has gone down over the past year. Like the computer itself, these drives have larger storage capacities and faster speeds. In addition, newer disk technology is available. It is not uncommon these days for users to want 300 to 600MB disk drives. While the Fortune Formula has the ability to put these larger disk drives on the system, the Fortune 32:16 is limited to one or more 70MB disk drives unless you do some costly upgrading. The Fortune 5000 also has the ability to use the larger drives and the newer technology. Again, you want the ability to put a larger disk drive on your system as your business grows. These larger drives can be put on one system without the need for "expansion" cabinets.

7. **What about backup capability?** When the 20MB tape backup was introduced on the Fortune 32:16, it was quite an item. It is not uncommon now to see tape backup units that will store 150MB of information or more. Again, speed has increased which means that the amount of time it takes to backup the system is decreased. This means more productive use of your computer system. The ability to put these tape units on the Fortune 5000 also means that unattended backups can be on one tape during non-business hours.

In addition to the tape unit, larger capacity high density floppy disk drives can used on the Fortune 5000. Each diskette can hold 1.2MB of information compared to about 790,000 characters on information for the 32:16 and the Formula. A 1.44MB capacity micro diskette unit can also be used on the

Fortune 5000.

8. **How many users can the system support?** The maximum number of users that can theoretically be put on a Fortune 32:16 is 18. The maximum amout of memory is 3.5MB at a cost of about $1595.00 per megabyte. The Fortune 5000 has the capability for 32 users. Cost of memory is about $750.00 per megabyte and is expandable to 16MB. Again this adds up to more computer power for less money. The main point is that you have the ability to expand memory and the number of ports if you need to.

9. **What about terminals?** To use all of the application programs on the Fortune 32:16 or Formula, you need to have Fortune terminals. On the other hand, almost any terminal on the market today can be used with the Fortune 5000. If you want color, the main console can be a color monitor. Other workstations can be color if you are willing to pay the higher cost - but the capability is there if you want it.

10. **What about parts availability?** In the past, we had to purchase components from the manufacturer of the Unix based system (SCI/Fortune included). With the introduction of systems like the Fortune 5000, we now find that components for these systems can be purchased from other than the manufacturer. This includes components such as hard disk drives, floppy disk drives, tape units, port expansion boards, etc. While SCI/Fortune continues to climb the "Fortune 500" list, it is nice to know that we can shop around if we want to. The days of proprietary hardware and software are over.

11. **What about the availability of software?** Software vendors concentrate their efforts on writing software for the more popular systems. Because SCO Xenix and Interactive Unix run on many different 386 based systems, software products are continually being updated and new products are being written. In addition, popular products that run on other operating systems are being "ported". All of this means that you have a lot of software to choose from. This should be a consideration in any new computer purchase decision.

We haven't touched on all of the factors that influence the decision to upgrade to a new system. All indications are, however, that now might be the time. We have quite a bit of experience with one of the two major versions of Unix that are available for the Fortune 5000 - SCO Xenix. SCI/Fortune is going to let us use a Fortune 5000 so that we can install the other version - Interactive Unix and relate our experiences to you. During the next few months, we are going to share these experiences with the hardware and software with you. We will also give you the advantages and disadvantages of these two versions and compare them with FOR:PRO. We will talk about what is involved in converting from an existing Fortune 32:16 to the Fortune 5000. In addition, we will mention a few of the many software products that are available on the Fortune 5000.

From the system administration point of view, you will find that what you have learned about the administration of FOR:PRO will, in most cases, carry over into the Fortune 5000.

In summary, the Fortune 32:16 was one of the best implementations of Unix we have seen. The hardware and software was usually a step ahead of others in the industry. Today, the Fortune 32:16 continues to serve the needs of some. Others, however, should be seriously considering upgrading to the Fortune 5000. Fortunately, you made the correct choice when you purchased a Unix system. You will see that converting to the Unix based Fortune 5000 is easier than you think. You can also take advantage of some special deals that SCI/Fortune is offering for upgrading the Fortune 32:16 version of your software to the equivalent 5000 version.

We hope you will enjoy this series of articles over the next few months as we talk about many of the issues we have discussed here.❑

News From and About SCI/Fortune

Printers and Accessories Offered at Fire Sale Prices

SCI/Fortune wanted us to pass along some information that could be useful to many of our readers concerning some excellent bargains on printers and accessories. The following text is from an announcement we received from them:

No...we didn't really have a fire, but when you see the prices on some of these printers and accessories, you'll understand why the "fire sale" term came to mind!

We've got a great variety of products and supplies - some refurbished, others "brand new in-the-box" - and all of it is priced to move! A 30 day SCI/Fortune warranty applies to each item on the list.

Highlights of this offering include the NEC Spinwriter 3500R and 7710 model printers, the Genicom 3404 model printer, and the IDS 80 model printer (the IDS 132 has already sold out!). In addition, you'll find printer cables, feeders, ribbons, printwheels, and more. The following is a list of some of the items available:

NEC Spinwriter 3500R Printer
NEC Spinwriter 7710 Printer
Genicom 3404 Printer
IDS Prism 80 Printer
NEC Printer Cables, 10, 20, and 50 feet
IDS Printer Cables, 20 and 50 feet
Friction feeder for IDS Prism 80 and 132
Cut Sheet Guide for NEC 3500 Series
Envelope Adapter for NEC 2000 and 3500 Series
Cut Sheet Feeder for NEC 7710
Twin Cut Sheet Feeder for NEC 7710
Single Bin Feeder for Genicom 3000
Cut Sheet Feeder for NEC 3500 Series
Process Color and Primary Color Ribbon for IDS Prism
Ribbon for NEC 3500 Series and Genicom 3404
Courier 72 NEC Printwheel and Courier 10 NEC Printwheel

If any of our readers are interested in these products, we suggest that you contact your local SCI/Fortune dealer. If you have any questions, or desire more information, feel free to give us a call at **/u/fortune** *news.*

Lynn King Joins SCI Technology as Senior V.P. of the Computer Division

Lynn King has joined SCI as Senior Vice President of the Computer Division of SCI Technology. Lynn has more than 20 years of experience in development, production, and marketing of computers and computer peripherals. He was most recently Chief Executive Officer of Raster Image Processing Systems in Boulder, Colorado, a developer/manufacturer of high performance controllers for laser printers, typesetters, and other imaging devices.

Prior to his associations with Raster, he served as Vice President, Engineering, of NBI where he was responsible for developing products for office automation, desktop publishing, Unix based servers and local area networks. He was earlier associated with Texas Instruments and Digital Equipment Corporation, managing the development and introduction of a number of very successful products including printer families and video display terminals.

Gene Sapp, SCI President, said, "Lynn's experience and expertise make him a valuable asset to the Computer Division, and we look forward to the Division's future performance and contribution to the Company's growth objectives under his leadership."

Lynn has a BS degree from the University of Tennessee, and has done graduate work at Southern Methodist University. He is married with two children and his interests include sailing, swimming, skiing and hiking.

4.2 Level Diagnostics Available for 32:16

SCI/Fortune announces the availability of an updated Field Service Manual and 4.2 release level diagnostics for the Fortune 32:16 products. The diagnostics, which now include SCSI and COMM-A6, are available as part of the Fortune 32:16 Field Service Manual Update Package, and are also supplied with the complete, newly updated manual.

The 4.2 release level diagnostic programs are supplied on two floppy diskettes. Updates consist of several new diagnostics, including those for the SCSI controller, the COMM-A6 card, and the LAN board. Certain bug fixes have been added to the hard disk diagnostic, and 3.5MB memory is now supported in the memory diagnostic.

The Update Package is intended for those who already have a Fortune 32:16 Field Service Manual. Included are both diagnostic diskettes and a revised version of Chapter 5 of the Field Service Manual.❑

/u/help!

Answers and helpful hints to our readers' questions

(The following questions and answers were inspired by Fortune's Technical Support Staff)

UNIX vs DOS files

Question: *What should I be aware of if I use my UNIX screen editor to edit a DOS file?*

Answer: UNIX and DOS Ascii files are basically the same except for the end of line characters. UNIX uses a new-line character, and DOS uses a carriage return followed by a line-feed. You may notice the ^M's (CTRL-M's) at the end of each line in a DOS file when you use your UNIX editor. If you are just adding a few lines here and there, you'll have to insert the ^M's manually at the ends of the added lines. In **ed** or **vi**, you'll need to hit CTRL-V then CTRL-M to enter them. With **screen**, you use a CTRL-C then CTRL-M.

If you are working with entire files that are in the DOS or UNIX format, there are several utilities provided with DOS-FSS that will help you.

dtou	Converts DOS to UNIX format
utod	Converts UNIT to DOS format
lef	Determines format of specified file, and converts it to the opposite format.

Question: *I use a Formula 5000 running the Interactive 386/ix operating system. While my UNIX spooler seems to function correctly, only someone logged on as superuser can print a file. How can I correct this?*

Answer: I suppose this is a tool that can be used to guard against wasted paper. However, if you really do want to let just anyone print, you'll have to make some changes.

Your problem is that you have altered some of the files in the **lp** spooler directories while logged in as **root**. Other users don't have the authority to alter a root file, so nothing gets printed. All files and directories in the spooler section must be owned by **lp**. To correct your problem, enter the following command:

```
find /usr/spool/lp -depth -print -exec chown lp {}\;
```

This command will search through the directories and change everything to the correct ownership.

In the future, before making any modifications to lp files, first type

```
su -lp
```

This will change your identity over to lp and insure that all files created or modified will have the correct permissions and ownership. To return to your normal identity, just hit a CTRL-d, which will terminate the su -lp mode.

The following are questions and answers contributed by SCI/ Fortune and are printed verbatim.

Question: *What is the best "preventative maintenance" for a computer?*

Answer: For every user of a computer system, the most important component is not a memory card, the CPU or anything other than the primary storage device. For Fortune users, this is the *hard disk*. Why? Simply because this is where all the user's data and application software normally reside.

While being extremely reliable, the hard disk is a mechanical device and it <u>will</u> eventually fail...as all mechanical devices do. Literally several years of work can and have been lost by users who fail to backup their systems on a regular basis.

Backups are very simple to perform, and yet time and again we hear from users and dealers who have failed to get in the habit of backing up their system's hard disk. If the disk has totally failed, all that is gone...lost...off to 'bit heaven' as it were. We have often been told "*but we were never told that we should backup our system*" by most users who have reached this unfortunate impasse. This frustration generally turns into real anger, with talk of seeing a lawyer not too far behind.

Backups should be performed <u>at least</u> once a week; important data should be backed up daily and can be done on an incremental basis. With the increasing size of hard disk

storage, backups are ever more important. For smaller hard disks (up to 20 MB), flexible disks are an acceptable media format.

For larger hard disks, use a tape streaming device. FOR:PRO provides the user easy access to these utilities through the Global Menu in the 68000 environment; 386/ix and Xenix also provide these tools through their Sysadm menus in the 386 environment.

SCI/Fortune recommends to all their dealers that when they sell a computer that the dealer teach the system administrator how to perform backups at the time of installation. Once this is taught, the dealer should get the user to sign a form that indicates they have been taught how to do backups.

Thus, if the hard disk fails and there aren't backups, the user can't blame the dealer. This indicates how important backups are and indicates that the responsibility for proper backups lies with the owner of the Fortune computer and not the dealer.

Backups are very important, don't neglect them!

Question: *I understand the Fortune 5000 computer is available with both ST-506 and ESDI hard disk interfaces. What is the difference between these two interfaces, and what should my considerations be in choosing between the two?*

Answer: The ST-506 hard disk interface was introduced with the PC/XT in 1983, formatted for 512 bytes per sector and 17 sectors per track; the PC/XT clock rate provided a throughput of 85 Kbytes per second. ST-506 throughput on the PC/AT generation of machines was increased to 165 Kbytes per second.

The entry of the 386 PC/AT and hard disks with seek times in the 10's of milliseconds running at clock rates of 20 and 25 Mhz further enhanced the ST-506, but this caused the data transfer rate to be slower than the hard disk and CPU.

ESDI, an acronym for Enhanced Small Device Interface, was developed to meet the needs of the industry's demand for higher recording densities and faster transmission rates. ESDI can support 10 megabits per second, with recording densities of up to 4096 bytes per sector and 256 sectors per track. ESDI is considerably faster by design.

The choice between the two should not be made solely on the basis of the speed of each interface. The ST-506 is well known, widely supported by disk manufacturers, and works on a lot of hardware. It is relatively simple and easy to find controllers for. As such, it is more of an industry standard at the present time. Where the environment is single user or cost is a factor, the ST-506 could well be the choice one makes.

ESDI, on the other hand, is more of an emerging standard. It is quite intricate, more device dependent, and requires more logic embedded controllers, making it more costly than the ST-506. ESDI does offer a broader range of OEM possibilities for enhancement, and directly supports more devices.

Where the environment demands expandibility, networking, and/or multi-user activity, performance dictates that the ESDI could well be the preferred choice. Thus, the choice of which interface to choose is based on several factors and is best done in conjunction with your dealer or other experts who can advise you on all of the pros and cons.

Protect Your Fortune:Word Work with Autosave

Recently one of our readers called to say that **Fortune:Word** had frozen while they were in the process of a large INSERT, and when they finally got free, they had lost everything they had just entered. The same thing could happen if they had had a power failure or some other malfunction. **Fortune:Word** 3.0 had a built in feature which can protect you from losing your work--it's called **Autosave**.

To use **Autosave** you simply set the number of keystrokes you want to set before the save occurs. To set it hit the F8 STOP key and the number of keystrokes you want to elapse before the save. The default is 1024. That means every 14 lines or so, your entire file will be saved. You may be interrupted for a moment as the "writing pages" message appears, but it will only take a few seconds. There is obviously a tradeoff between the number of keystrokes and the number of interruptions. The fewer the keystrokes, the safer you are (because your file gets saved more frequently), but the greater the number of interruptions.

If you'd like to be sure that **Autosave** is always turned on when you create a new document, you can edit your prototype document, 0000, and use the STOP key to set the **Autosave** keystrokes. Exit out as normal. This will set **Autosave** as the default for all newly created documents.

It is also possible to save your document manually at any time by hitting COMMAND RETURN EXECUTE. This might be a wise thing to do before performing any large editing tasks, like moving several pages, etc.

Please note also that the RESTORE command (COMMAND R) returns the page of your document to the way it is stored on the disk. If you have used **Autosave**, it will only be returned to the way it was at the last save, rather than the last time you opened the document. In comparison to the benefits of **Autosave**, this should probably not be any problem.❑

If you have any questions about your computer system that you would like us to answer, please send them to us at the address listed on page 3.

/u/fortune *news*
Classified

This month we introduce a new section to **/u/fortune** *news* to better serve our subscribers and Fortune computer users in general. In order to help everyone use their Fortune hardware and software to its utmost, we are providing a forum for selling and buying used equipment. We will be including this section in each issue of **/u/fortune** *news* as long as there is sufficient interest. So, if you would like to find something for your Fortune or locate a buyer for your equipment, you should not overlook this valuable resource. If you are interested in a listing in this section of **/u/fortune** *news*, please call us at (617) 894-6900.

Fortune 45-SX Computer System

Hardware Description:
1 meg memory, 4 port Comm A board, 1 additional Work Station plus Nec 3500R Spinwriter plus tractor feed, cut sheet guid and feeder cut sheet.

Software Included:
For:Pro 2.0, Multiplan, Fortune:Word

Miscellaneous cables and supplies.

Please call **Don Robinson** at **(217) 428-6467** for more information.

Two Systems - Take Your Pick!

System 1: **Fortune XP-30**, with 512K Ram, 30MB hard disk, also includes 30 MB expansion Hard Disk, thus *60 MB total capacity*. Console plus two Intelligent Work Stations and miscellaneous software and manuals.

System 2: **Fortune 32:16** with 20MB hard disk, console and 3 Intelligent workstations, 1 memory expansion (256K) and miscellaneous software and manuals.

Please call Jim at (503) 684-3417 for more information.

Fortune 32:16 System 20MB with 756K RAM, Nec 7710 Spinwriter with Forms Tractor and Hayes Smart Modem 1200. Software includes For:Pro 1.7, Extended Fortune:Word 1.0, Informix 3.20, Handshake ITE 1.3.2, Bus. Basic, A/R, Gen. Ledger and Multiplan. For more information, please call **Steve** at (818) 243-6776.

Fortune 32:16 XP 30

Hardware:
1 Meg RAM, 30 Meg Hard disk, 8 ports plus printer port, Console terminal plus 2 FIS 1000 terminals, Nec 3500 LQ printer with acoustical enclosure, and Anadex 9500 Dot Matrix printer.

Software:
Fortune:Word Plus, Multiplan, a complete RDBMS accounting set of software plus 4GL RDBMS utilities, and more.

Please call the **DP Manager** of First National Bank of Bellevue at **(402) 291-4300.**

Fortune 32:16 System 20 w/keyboard and CRT, 768K memory, 800K flex disk drive, 20 meg hard drive, 4 port Comm A board and 3 Intelligent work stations. Installed software: For:Pro, Business BASIC, BAS Gen. Ledger, BAS Order Processing, Accounts Rec., and Payable, BAS purchase orders, Fortune:Word , Multiplan. Call **C. Laird McClure** at (215) 431-2000.

Fortune 32:16 10MB

Hardware:
This system has 1 Meg of RAM, 10 MB hard disk, 4 port Comm-A, Hayes 1200 Modem, Console and one additional workstation, IDS 132 dot matrix and Brother letter quality printers, all cables and books.

Software:
Includes Fortune:Word, Multiplan, some business applications, ITE, Basic, Pascal, C,Development Utilities and disks from **/u/fortune** *news*.

Call **Jim** and/or leave message at (212) 724-8114 for more information.

Fortune 32:16 with 20 Meg drive, 1 Meg of memory. Software: Multiplan, Business Basic, Fortune:Word, Multiuser and Thoroughbred BK, AP, AR and GL. Also includes NEC 7710 Spinwriter. System received light use, in excellent condition. Please call for details at **(203) 873-1459.**

If you would like to find some particular computer equipment that our readers might have, you may put a "Wanted" ad in this section. Contact us and we will give you the details.

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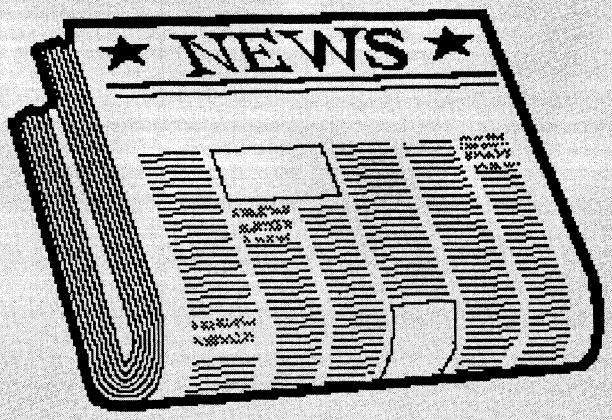

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Same redemption guidelines apply that are listed in the April edition of /u/fortune news.*

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Norm Westlund & Allison Black

Note: Due to an overwhelming response to SCI/Fortune's 10% off coupon, SCI/Fortune has decided to continue the coupon for one extra month (it expires July 31, 1989). Don't miss YOUR opportunity to save lots of money. Use that coupon today!

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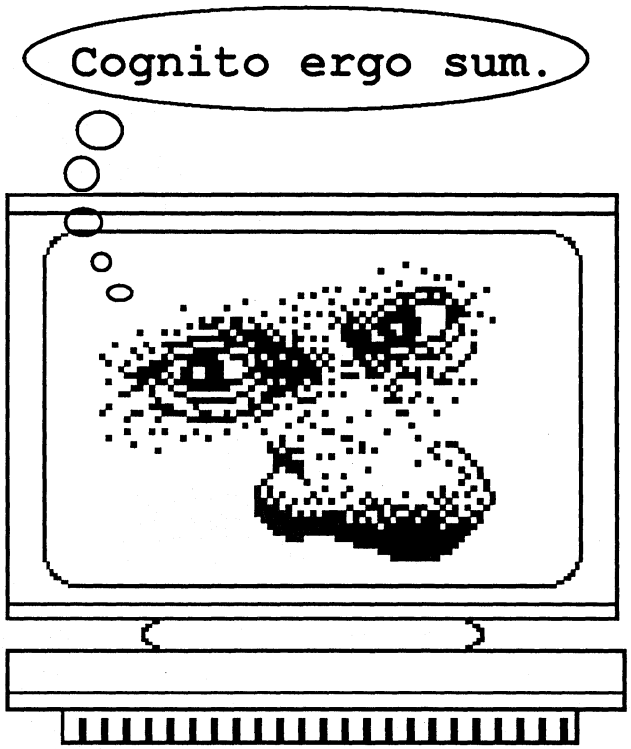
/u/fortune* news

The Newsletter for Users of SCI/Fortune Computers July 1989 / Volume 6 Number 7

Artificial Intelligence and Fortune Computers



- Dave Kloes discusses setting up the Fortune 5000
- Carnivale Cruise and BAS Dealer Support Fees
- News from SCI/Fortune - Software Conversion Policies
- /u/help! - Fortune:Word, Backups and Communications

Announcing

The Newest Member of the Fortune 5000 Family of Computers

The Fortune 5000 Model 5286

Committed to being a leading supplier of multi-user UNIX systems, SCI/Fortune proudly announces our Fortune 5000 Model 5286. The 5286 provides a cost effective solution to the special needs of small businesses, and at the same time extends the power of larger network systems.

SCI/Fortune will continue to expand and support our Fortune 5000 family of products to meet your changing business needs.

For more information on the 5286 and our full line of multi-user systems, contact your SCI/Fortune dealer. For dealer information, contact our main office in San Jose, California, at (800) 443-7072.

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Volume 5, Numbers 1 - 12	$5/each - $55/set
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For more information, call or write:

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225 Crescent Street
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(617) 894-6900

The text for this newsletter was prepared using an SCI/Fortune 5000 for both text input and typesetting. The typesetting was accomplished by using the Aldus Pagemaker program under VP/ix, which is a DOS emulation.

CONTENTS

From The Editors...

Expert Systems, Neural Networks, Artificial Intelligence... Can My Fortune *Really* Think?

I think most Fortune users and owners would be amazed at the artificial intelligent tools that are available for the 32:16, Formula Series, and the 5000 family of computers. I know I was amazed!

It all started when I was trying to learn a little bit about what expert systems are all about for a project that I am working on. Since I work on our Fortune 32:16 all the time, I wondered if there were any products that would help me. The first thought I had was to check the **Unix Usenet** network to see what, if anything, existed for Unix systems. I suppose I shouldn't have been surprised at what I found, but I was. Now for what I found...

Expert Systems

I suppose the hottest thing around right now in terms of AI are "expert systems." Computerized expert systems purport to capture the relevant "knowledge" of an expert in some area (say, troubleshooting computers) and organize this data so that a computer can become the expert. By creating a "knowledge" base and constructing "if-then" rules, the computer can appear to be as intelligent as an expert and can aid the less than expert individual in making some rather complicated decisions. We have found one expert system building tool for the 68000 side and can make it available to our readers. However, to make use of this program, you will need to have a C compiler because it generates C code.

AI Languages and The Fortune 32:16 and Formula

The one language perhaps best associated with AI is **lisp**. Other languages that are used are known as "Object-Oriented Programming Languages." Some fairly well-known examples of object-oriented languages are **Smalltalk**, **Prolog** and **OPS5**. We have been able to find some versions of **lisp** - one is called **xlisp** and the other purports to be **Common Lisp**. Currently, **xlisp** compiles and seems to work.

We have also found a version of **smalltalk**, called Little Smalltalk, which compiles on our Fortune. This program is unusual in that it was written by Timothy Budd who also wrote a book on how to use it. We've bought a copy of the book and it appears very readable. The book is called *A Little Smalltalk* and is published by Addison-Wesley.

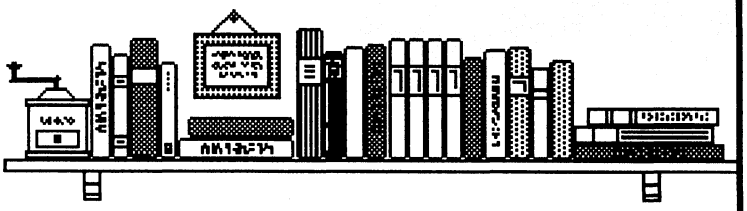
We've also found a version of **OPS5** which is written in Common Lisp. Assuming that the Common Lisp that we procured from Usenet compiles and works, we may have a working example of this object-oriented programming language in the near future. If you are interested in any of these software products, please contact us.

AI and The Fortune 5000

It shouldn't surprise anyone that there are loads of software and hardware products that will probably work on the Fortune 5000 family of computers. This is mainly because you can emulate DOS and that opens up a wide array of potential products. I was perusing a magazine, called *PC AI*, the other day and found that you can purchase products that create Expert Systems, recognize the spoken voice, understand (to some extent) "natural" language, and produce neural networks. Of course, all the AI computer languages are supported including many variants of **lisp**, **prolog**, **c++**, **smalltalk** and more.

We will continue to report on the availability of software that runs on the entire line of Fortune computers. So, keep your eyes on **/u/fortune** *news*.

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

In 1986 Concept Omega Corporation held their annual "Dealer's Conference" in San Diego. The following year it was the annual "Thoroughbred Leader's Conference" in Hilton Head Resort, SC. In 1988 it was still called the "Thoroughbred Leader's Conference", and it was held in Newport Beach, CA. We missed that one. This year we have, are you ready for this, the "Thoroughbred Business Partners Conference" being held in no particular city.

We have an overwhelming urge to leave it at that and keep everyone guessing. But since we have been promoted from dealer to leader to business partner we feel obligated to conduct ourselves in a manner more befitting of our new title.

This year the otherwise dignified and sedate crew from Thoroughbred Software has scheduled a "Carnivale" cruise sailing from Miami to Nassau during October 27-30. The cruise/meeting package includes: (1) Roundtrip airfare to Miami from most major cities; (2) Roundtrip transfers between Miami Airport and pier; (3) Three day cruise including meals, entertainment, and amenities offered by the cruise line; (4) Port taxes; (5) A welcome cocktail reception; (5) An exclusive hospitality desk available for the group; (6) Meeting functions "To be detailed under separate cover".

There are four sporting event packages from which to choose: golf, tennis, shopping, and our personal forte, relaxing. The Golf Tournament in Nassau package includes transfers from pier to Crystal Palace Golf Course at Cable Beach, golf club and cart rental, green fees and tournament fees. The Tennis Tournament in Nassau package includes transfers from pier to Crystal Palace Tennis Courts at Cable Beach, tennis racquet rental, court fees and tournament fees. Concept Omega has not expanded upon the shopping and relaxing packages. We are hoping the relaxing package includes transfers to the ship's swimming pool, suntan lotion rental, bar fees and bicarb.

In the latest announcement Concept Omega advises, "This year it is important to register early so you do not miss the boat! We have a limited supply of double rooms available and we must release all uncommitted rooms in just a few short weeks. We have extended our low early registration rate of $250.00 through July, at which time it will increase to $350.00."

In addition to the conference fee you must reserve one of the outside cabins blocked for the group. Reservations are on a first come - first served basis upon receipt of registration form and deposit. Registration forms may be obtained from Concept Omega (call 201-560-1377). Depending upon the deck selected the cost of a cabin will run between $620.00 and $665.00 per person, double occupancy, or $1214.00 to $1304.00 single occupancy. Any questions should be directed to Judy Fasciani at Revere Travel Options, 800-257-6277.

The Carnivale Three-Day Cruise departs Miami on Friday, October 27, 1989, at 4:00 PM and arrives in Nassau in the Bahamas on Saturday, October 28, at 9:00 AM. It departs from Nassau on Sunday the 29th at 8:00 AM and arrives back in Miami on Monday the 30th at 7:00 AM. In other words, you spend 17 hours going from Miami to Nassau, 23 hours in Nassau and 23 hours returning to Miami. Concept Omega will probably schedule their meetings during the final 23 hours of the cruise, billed by the Carnivale people as a "fun day at sea". For obvious reasons, there will be no software fair this year.

We cannot for the life of us figure how Concept Omega will manage to conduct business in such an atmosphere. The cruise itself provides eight meals a day, a full range of entertainment including two different nightclub shows each evening at sea, three bands and orchestras, a full gambling casino including slots, blackjack, craps and roulette, and duty-free shopping on board. You have access to early morning exercises, skeet shooting, four outdoor and one indoor swimming pools, table tennis, shuffleboard, golf driving, a gym, and more. Also, there is the Welcome Aboard Rum Swizzle Party, Singles' Cocktail Party, Captains Cocktail Party and, thank goodness, complimentary snack bar service. If you like, you can have a full breakfast in bed. Why go to a meeting?

So this may prove to be more of a pleasure trip than a business trip, and we may or may not be attending. If we do, we will report back in December. If we do not, maybe some of our readers who do attend will share their experiences with us.

Question: You have been very quiet about the new support fee being charged to dealers by the Thoroughbred people. You must have some commentary.

Answer: At first we had plenty of commentary, none of which was printable in a magazine of this sort, but we calmed down and gave it a rest. Situations seem to change quickly in this industry, so we decided to wait and see.

Here is the background. In March of 1989 everyone received a notification from Thoroughbred that dealers wanting technical support from Thoroughbred would be required to pay an annual fee of $750.00. For this fee dealers would be provided with faster response time ("our goal is to consistently return all calls in under 60 minutes"), a training discount ("20% discount on the cost of any scheduled training class offered by Concept Omega") and a periodic newsletter ("including repetitive questions, product bugs, release information, etc."). The fee was due by May 1, 1989, after which time technical support would be available only to those dealers who had paid the fee.

As you may expect, the policy was changed before the May 1 deadline. The new policy, which took effect on June 1, involved two "clubs". The "750 Club" offered the same "opportunities" outlined in the March notification. But there was now a "200 Club" which allowed a dealer to purchase for $200.00 per year limited technical support from Thoroughbred. The same privileges (quicker response, training discount and newsletter) were offered to members of the 200 Club. Also an upgrade path was provided for 200 Club dealers who wished to become 750 Club members at a later time. We perforce became a 200 Club dealer.

No, we don't like it. We work with several manufacturers, and Concept Omega is now the only one who charges us money to make their products work properly. (And we didn't even get an "Authorized Thoroughbred Dealer" decal for our office window!) But we have encountered some positive experiences as a result of the new policy. When we do need support, it comes almost immediately. (It is almost as if the technical support people have nothing to do. We used to have to wait up to two hours to get an answer to a question.) And we have received our first technical newsletter. This will certainly save us hours of searching through release notes the next time we run into technical problems.

Obviously many dealers are dropping off, but apparently the ones who are leaving are mostly those who were making few sales and using lots of support time. So far this exodus does not seem to concern the Thoroughbred people. A couple of years ago manufactures were scrambling to amass large numbers of VAR's, but nowadays it seems everyone is going for quality over quantity. Let us hope that once the quality base is established the support fee will vanish.

We have heard from only a handful of dealers so far, and most of the talk has been of the negative variety. If you are a present or former Thoroughbred Dealer and have an opinion about the new support fee policy, be it favorable or unfavorable, we would like to hear from you. Call us at (301) 448-9460 or drop a line to BASIC Software Corporation, 5201 Powhatan Street, Baltimore MD 21207. We would like to let our readers and Concept Omega know how the community is responding to this issue.

System Administration: Part 27

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

As we mentioned in last month's issue, we will be devoting some time in this and subsequent articles to the Fortune 5000. We will also be including a new section called **TIP OF THE MONTH** which you will find at the end of this article.

Before we start talking about our experiences with the Fortune 5000, we would like to thank the folks at SCI/Fortune for loaning us the Fortune 5000 and the software we will be using for this series of articles. Just for your information, the system we are using is the Fortune 5000, Model 20. The other system that is available is the Model 16. The difference between the two is that the Model 20 is a 20MHZ system and the Model 16 is a 16MHZ system (we will talk about this some more later on in the article). Our system came configured with:

4MB of memory
150MB Wangtek cartridge tape drive
150MB ESDI hard disk drive
1.2MB 5 1/4" Floppy Drive
Keyboard

You will notice the absence of a terminal or monitor on the list. The good news is that if you have a Fortune 1000 Workstation, it can be used as the monitor on the 5000. Basically, all you need is a 9-pin to 9-pin cable to attach the workstation to the system. You will also need to set the switch on the back of the workstation to external video.

In addition, we received the Interactive 386/ix (Unix) operating system, Fortune:Word 3.2, and a 386/ix MultiView Demo Kit. MultiView is a software package similar to Windows on the Fortune 32:16. We have our own in-house copies of SCO Xenix (Unix) and MS-DOS which can also be installed on the 5000.

Before we get into the nitty gritty of what we have loaded and how we did it, we need to discuss some things first. In this article, we will primarily concentrate on discussing the hardware configuration; defining some terms; and talk about the software and documentation we will be working with. After these issues have been discussed, you will be in a better position to understand what we are doing. First, let's discuss some terminology:

Wait States - the 5000 is a 0 wait state machine. Without getting into a lot of technical detail, the general concept is that the higher the number of wait states, the slower the system will be. Obviously, 0 wait state is the fastest state.

DRAM - this is the amount of memory that can be put on the system. The 5000 has 1 32-bit memory card with 4 megabytes (MB) of memory that can be expanded to 8 or 16MB.

Monitor - this term generally refers to the "console" monitor that is the primary monitor on the system. Circuitry is provided on the 5000 for monochrome, hercules, Color Graphics Adaptor (CGA), or Extended Graphics Monitor (EGA). You may put either a monochrome (no color) monitor or color monitor on the 5000. In addition to the Fortune 1000 workstation, you may use other PC monitors.

Hard Disk Interface - depending on the size disk you want, either the ST-506 or ESDI interfaces are available. Any of the hard disks purchased from SCI/Fortune that are over 70MB use the ESDI interface. The 70MB option uses the ST-506

interface.

Expansion Slots - these are the slots on the motherboard that are available to put expansion boards into the system. Just like the Fortune 32:16 slots are used to put in video controllers, hard disk controllers, comm boards, expansion cabinet boards, etc., the slots on the Fortune 5000 are used for internal modems, hard disk controller, tape controller boards, serial port boards, memory expansion boards and graphic adapter boards.

There are 5 16-bit expansion slots available for use on the 5000. Since there are a limited number of slots, it may be necessary to plan for how they are to be used, especially if you are going to have alot of users on the system. The Fortune 5000 we received, for example, uses two of the available 5 slots - one for the tape controller and one for the ESDI hard disk controller. This leaves 3 available slots. Let's say we wanted an internal modem and a 24-user system. In this case, we would have to consider other alternatives because one slot would be used for each of the three 8-port boards that would be required and one slot would be used by the internal modem.

We could use an external modem connected to one of the serial ports or purchase a 16-port board and an 8-port board instead of three 8-port boards. Although this may not be a likely scenario, the point is that you should be conscious of any problems that might be created due to the number of available slots.

Math Coprocessor - the 80387 math coprocessor chip is an optional item that can be purchased which will make some of the software applications run faster. Under SCO Xenix for example, a math coprocessor chip will make SCO Professional (Lotus 1-2-3 workalike) perform faster. The socket for this chip is on the Fortune 5000 motherboard.

Console Port - this is the 9-pin connector that is standard on the Fortune 5000 for plugging the main monitor into. This monitor serves the same purpose as the console terminal that is connected to your Fortune 32:16.

Parallel Port - the 5000 comes with one parallel 25-pin connector port that is used to plug in a parallel printer.

Serial Port - there are two standard serial 9-pin ports. These are referred to as com1 and com2 and can be used for terminals, printers or modems. In its basic configuration, the Fortune 5000 can support 3 users - the monitor port plus the two serial ports. The ports on the serial expansion boards are also serial ports.

Expansion Board - expansion boards have additional serial ports on them that can be used for terminals, printers and modems. Basically, they function just like the Comm A boards on the Fortune 32:16. SCI/Fortune offers either 6-port or 8-port expansion boards. When you are determining your system requirements, don't forget to count the three standard ports that are already available. One factor you should consider is the difference between "dumb" and "intelligent" expansion boards. Intelligent boards have chips on them that increase the speed of processing data between the computer and terminals. Obviously, for this reason, they are also more expensive.

half height/full height - the 5000 can support a maximum of 5 half height devices. A half height disk drive, for example, would take half the space of its full height counterpart. Since most configurations of the 5000 come with a half height tape drive, hard disk drive and floppy disk drive, this leaves space available for two half height (or one full height) devices such as a second hard disk drive.

interrupts - normally each device attached to the 5000 will have a unique "interrupt level" associated with it. The general idea here is that when the system detects a particular interrupt, it knows how to react to that device. As an example, the com1 and com2 serial ports are given interrupts 3 and 4 respectively.

The interrupt level also determines the priority that the system will give to that particular interrupt or device. Notice that we used the word "unique" above. This implies that two devices will not normally have the same interrupt level assigned to them. In fact, you will have problems with one or both of the devices if this happens. Information about the interrupt(s) to be used is normally included in the documentation for the device you are installing. It may also be dictated by the particular operating system you are using.

Also, in many cases, you are given a choice of a number of interrupt levels that can be used and it is up to you to determine an interrupt level that is not in conflict with another device on the system. We will talk more about common interrupt settings when we talk about how we attached specific devices.

In addition to determining and setting the interrupt, you normally have to run some software program or procedure to tell the operating system the interrupt level you have chosen for a device. Most devices that are connected to the system have jumpers or switches that must be set to select the appropriate interrupt level.

Addresses - in addition to setting the interrupt for a device, each device normally has a memory address that is reserved for its use. The same considerations we talked about in our discussion of interrupts apply when assigning addresses. Again, we don't want the assignment of interrupts and addresses to scare you. For the most part, either the system documentation or the documentation that comes with the devices will guide you in making these selections.

Megahertz (MHZ) - the MHZ designation for a computer system normally impacts how fast it will run. For example, in order of increasing speed, the Fortune 32:16 is 6MHZ; the Fortune 5000, Model 16 is 16MHZ; the Fortune Formula is

Software For The Fortune 32:16 And Formula

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

W-2 LINK ($395.00) - designed for companies with over 250 employess who must report W-2 payroll information to the Social Security Administration (IRS) via magnetic tape or diskette. Automatically takes information in the Business Accounting System (BAS) Payroll module and puts it onto diskette in the format required by the IRS. Also available for PAC software. also.

1099 LINK ($295.00) - this product produces Form 1099's required for submission to the IRS and is an extension to the standard BAS Payroll module.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

WESTERN LINK ($195.00) - provides instruction on how to use your Fortune for sending/receiving telex messages using Western Union's Easylink. Can replace your telex! Fortune ITE or Handshake software required.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

FINANCIAL LINK ($295.00) - passes BAS Income Statement and Balance sheet to Multiplan or UltraCalc. Stores and instantly reprints these statements for current/previous period without sorting.

FORTUNE SOFTWARE AND HARDWARE SUPPORT SERVICES

UNI-KOMP 5715 N.W. Central Dr., Suite F112, Houston, Tx 77092
Phone: (713)895-9900 Fax: (713)895-9914

16.5MHZ and the Fortune 5000, Model 20 is 20MHZ. If speed is a factor and you are considering the purchase of the Fortune 5000, then the Model 20 would be the correct choice.

Now that we have covered some of the hardware terminology and configurations, let's talk about the software. The primary operating system that is intended to run on the Fortune 5000 is Interactive 386/ix.

This is a version of Unix that is AT&T System V compatible. In addition, you can run SCO Xenix which is a version of Unix that is becoming System V compatible and DOS. Interactive 386/ix and SCO Xenix are multi-user just like FOR:PRO on the Fortune 32:16 and Formula. DOS is a single-user operating system.

As we mentioned earlier, we received the Interactive software with the Fortune 5000 system. The package includes the diskettes and documentation needed to install the Interactive "runtime" version of Unix on the Fortune 5000. The term "runtime" means that you receive all of the software necessary to install and run application programs such as Fortune:Word on the system. In addition, you can purchase the "386/ix Software Development System" and the "386/ix Text Processing Workbench".

The software diskettes that are included with Interactive 386/ix Runtime OS are:

Boot (1 volume) - used to install 386/ix

Core (4 volumes) - contain most commonly used systems and utilities.

File Management/Help Utilities (1 volume) - contains the commands and utilities used to manipulate UNIX files and to provide the on-line help facility.

Kernel Configuration (3 Volumes) - contains programs and configuration files required to configure and build a new kernel for the system (remember that the kernel is the heart of the Unix operating system and is loaded in memory each time the system is "booted").

Basic Networking (2 volumes) - contains the files and utilities required to use "uucp" (same as Fortune to Fortune Copy).

Spell Utilities (1 volume) - contains the file spelling checker facilities.

Terminal Utilities (2 volumes) - contains the terminal descriptions and filters required so that your system can recognize and use a wide variety of terminal types.

TCP Ethernet Support, MICOM Version (2 volumes) - contains the drivers and utility programs which provide TCP/IP Ethernet communications.

The software diskettes included with the SCO Xenix Runtime OS:

Boot and Filesystem (2 Volumes) - used to install SCO Xenix.

Basic Utilities (2 volumes) - contain basic files and commands

Extended Utilities (4 volumes) - contain extended files and commands

Games (1 volume) - speaks for itself

The following manuals and documentation were received with the Fortune 5000:

- Fortune 5000 Hardware Setup Guide
- SCI Systems EGA Utility Software Manual
- Wangtek Tape Backup System User's Guide
- SY-TOS Tape Operating System User's Guide (DOS)

Interactive 386/ix Documentation

- Managing 386/ix Products
- Using 386/ix Products
- Supplements - Release Notes, Manual Pages
- Writing 386/ix Device Drivers
- AT&T System V/386 Programmer's Reference Manual
- AT&T System V/386 Programmer's Guide

SCO Xenix Documentation
- Installation Guide
- System Administrator's Guide
- User's Reference (man pages)

As we take you through the installation process over the next couple of issues, we will be referring back to some of the above listed items and using some of the terms we have defined. In addition, for creating our DOS partition, we will be installing IBM DOS, version 3.3.

As it stands now, our Fortune 5000 has three different operating systems installed - Interactive 386/ix, SCO Xenix, and DOS. We will be looking forward to sharing the steps we took to get this configuration over the next couple of articles. We do hope that this article has laid some of the groundwork for what is to come.

TIP OF THE MONTH

Our tip of the month comes from Dr. Paul R. Ash of the Clackamas Neurological Associates in Oregon City, Oregon. He has brought up a subject that we did not discuss in our "INTRODUCTION TO SHELL PROGRAMMING" series of articles. In particular, he provides us with an example of how

to edit another file "on the fly" in a shell program using the "ed" editor. Here is an extract from one of his programs:

```
echo -n ''Printer #4 or 5 ''
        read ans
        if test $ans -eq 5
then ed $c <<'EOF'
7d
7i
DEV LP,4,3500,,,,,tty05
.
w
q
EOF
        else
ed $c <<'EOF'
7d
7i
DEV LP,4,3500,,,,,tty09
.
w
q
EOF
fi
```

For those of you that don't recognize what he is working with here, it is one of the BASIC/IDOL/BAS "ipl" files. Assuming that system printer #4 is attached to tty05 and system printer #5 is attached to tty09, his script will edit this file to make the appropriate printer the main printer while BASIC/IDOL/BAS are running. Notice that after "ed" for the filename (variable "c" was set before this section of the program), he has embedded the actual "ed" command characters to be run "on the fly".

In this example, based on the user's answer, "ed" will first delete the current line 7 and then insert the new line 7 of the file passed in the "c" variable. It will then write the file and quit the editor.

Once again, we welcome comments and "tips" from all the readers on any relevant Unix related topic. You never know - you might become a celebrity too!! Thanks again to Dr. Ash for his comments and tip.

If you wuld like to submit questions or tips, please send them to:

David E.Kloes
Uni-Komp
5715 N. W. Central Dr.
Suite F112
Houston, TX 77092

/u/help!

Answers to our readers' questions and queries.

Question: Rob Heinrich in Illinois called us to say he's having problems with hyphenation in **Fortune:Word**. The first problem is that after he hyphenates a document, he can't type over the "soft" hyphens. (Soft hyphens are hyphens that **Fortune:Word** inserts that disappear if the text is re-edited.) When he does type over them, his terminal locks up and starts beeping. The only way to fix it is to kill the process from another terminal, which results in a loss of all his work.

His second problem is that **Fortune:Word** will not hyphenate a word that is followed by a period.

Answer: We had to contact Lars Hultin at SCI/Fortune on this one. They have not heard of the first problem, which is the more serious one. We will get a copy of some of Mr. Heinrich's documents to see if we can duplicate the problem. If other readers have had the same problem, please let us know.

The second problem has a simpler answer. It is an intentional feature of **Fortune:Word** not to hyphenate a word at the end of a sentence. This is similar to the idea of not leaving a single line of a paragraph at the bottom or top of a page.

Question: We have a 32:16 based system with a total of 110 meg worth of hard drives; three printers and 9 terminals. We have a couple of questions regarding backups and general system operations.

It currently takes us about two hours, twenty minutes to perform a backup of the system. Because of the time involved, it's not performed daily but every two or three days. Is there a way to shorten this backup time? Would something like the **Automatic Tape Backup Link**, from Uni-Komp shorten the procedure?

When the system is backed up, it's begun at the end of the day, leaving the system on overnight. Should we shut down the system at the end of every day, on weekends only, or ever? (we currently have an IBM-XT that has been running continuously, except for maintenance for about two years). We have received conflicting information on this issue.

One other comment, I really enjoy my monthly newsletter, but you could improve it by formatting and punching it for a three ring binder.

Sincerely,

Donald McIntyre

Answer: Well, the first thing is that you're fortunate to have a tape backup. Many people don't take backup very seriously, although when disaster strikes it can be absolutely essential to have good copies of your information.

If you are conscientious enough to backup your system, you should periodically check to be certain that your backups are working properly. One way to do this is to backup and restore a small file. Another is to list the contents of a tape or disk to be sure that all of the files you expect to be there are there. Listing the contents of a tape requires the entire tape to be read, so usually that will pickup any problems with the media as well. With a floppy disk, you can use the command `dd if=/dev/fd02 of=/dev/null bs=1k` to read the entire disk. Be sure to type the command exactly as it is shown. When it is done, it should report back 790 records in, 790 records out. If the number is less, there is probably a problem with the diskette.

Secondly, it is good practice to clean your disk or tape drives on a regular basis. Tape drives should be cleaned approximately every 10-15 hours of operation with a cue tip and head cleaning solvent. Contact your dealer about the correct method. Disk drives don't need to be cleaned as often, and can be cleaned with special floppy cleaning kits that are sold for all 5 1/4" drives. We suggest the ones that use some sort of liquid on an absorbent disk that is put into the drive.

Now, as to the rest of your question, it depends exactly what your problem is. If it takes over two hours to back up your machine, but it can be done overnight, then that may be the best solution.

Experts differ on the question of turning your computer off

each day. The reasons to leave it on are that the surge produced when a machine is turned off and on stain the components more than the general operation. I think of it sort of like momentum -- it takes more work to get up to 60, I mean 55 MPH, than it does to maintain that speed. In deed, almost every time we've had a problem with our computer, it's been after we've turned it off (we leave ours on non-stop).

The reasons to turn it off are that it takes less electricity, that you cut down probably 2/3's of the total "on" time on the machine, and you reduce the risk of overheating caused by a fan that stops in the middle of the night or on the weekend.

So in the long run, there isn't a single right answer for everyone. Many people feel that if you use your computer all day, every day, you may want to leave it on for the whole week, and just shut it down on weekends. On the other hand, if you just use it for a couple of hours a day, you may want to turn it on and off each day.

If leaving your computer on over night allows you to make a backup every day, then that may outweigh any other concerns over the equipment, because in the long run, your backup will be your most valuable, and irreplaceable, possession.

There are also some other alternatives which might work well for you. It may be that it is not necessary to back up as much as you are every day. One alternative would be to backup everything once a month or once a week, and then to just backup things that have been changed or added each day in between.

This is usually referred to as an *incremental* backup. It is ideally suited for offices where there's a lot of **Fortune:Word** or **Multiplan** work done involving small files. Odds are that most people wouldn't add more than a megabyte or so a day in this situation. On the other hand, if you have a huge database application, you may find that you have to backup almost everything anyway, so an incremental backup won't help.

If you want to know how to do an incremental backup, see the shell scripts in Volume 5 Number 3 starting on page 14. You could also read several articles in the System Administration series including Volume 5 and Numbers 5 through 9.

The **Tape Backup Link** from Dave Kloes may help you out if you decide to choose an incremental backup strategy. You should contact Dave Kloes for more specific information. However, we understand that the Tape Backup Link would help you automate the backup process.

Finally, thank you for the complement on **/u/fortune** *news*. We'll look into the possibility of pre-punching it.

Question: I am transferring files between my Fortune 32:16 and a PC clone. I've got **Kermit** for the Fortune, and I'd like to use **Procomm** for the PC. I've tried using the **Kermit** transfer options with **Procomm**, but it doesn't seem to work. Do you know how it should be set?

Answer: It's important to get your line settings (ALT-P) right to use **Procomm** and **Kermit**. We've had success by just leaving all of the Kermit settings in the default mode. For the communications line, we set **Procomm** to 9,600 baud, Space parity, 7 data bits and 1 stop bit. If you want to, you can also set it at 19,200 for faster file transfers.

We have a special login on our PC as **ibm**, so that when we log in, it automatically sets the terminal to vt100, and puts us into the shell, rather than the Global Menu. We also set the interrupt character to CTRL-C (rather than CANCEL/DEL) and set the erase key to the backspace key. This is all done in a **.profile** file that looks like this:

```
TERM=vt100;export TERM
stty intr ^C
stty erase ^H
```

Note that the ^C is actually inserted by hitting the CTRL-C key combination. To make this work, after you set up an account for ibm, just create a file called **.profile** and put it in the **/u/ibm** directory. You can use the System Administration tools to change the program that is run at login for ibm from **menu** to **sh**, which will bring it right into the shell.

Question: I read Josh Lobel's recent articles on PC-Fortune Connectivity. Josh said pins 2,3,1, and 7 go straight through. Other sources have said pin 2 "Transmitted Data" and pin 3 "Received data" should be reversed for a direct connection. Which is correct?

Also, Specialized Products Company (800 527-5018) sells "Micropatch", an RS-232 interfacing adapter for $30.00. It allows you to easily and permanently switch DB-25 wires.

Thanks,

Gerald Blackwell
Manhattan Beach, CA

Answer: Josh Lobel still says they should go straight through. The reason is that there are two kinds of serial devices, DCE and DTE. The important point is that DCE devices talk directly to DCE without crossing the wires.

Fortune terminals are one type and Fortune computers are the other -- so to wire them together you just use straight-through wiring. Modems and terminals are opposite types so you also use straight-through between them.

However, modems and Fortune computers are the same type, so you need to *cross* the wires between them. Since IBM PC's are basically single user computers, and Fortunes are multi-user, they are also opposite types, so a straight-through wire is correct.

Just to really beat a dead horse, if you wanted to connect two IBM's -- let's say a fullsize and a portable, the wire you'd use would be crossed, since they are both the same type. Does all that make sense?

In regard to the **Micropatch**, it looks like an interesting device. Mr. Blackwell sent a page from *Specialized Products* catalogue showing a picture of it. It's a palm-sized connector that allows you to cross connect any of the terminals between the 25-pin connectors. When you've made the final connections, you can put the plastic hood back on it, and you'll have a permanent cable. The wires can be changed at a later time if you wish.

We make RS-232 cables frequently and have found a couple of other very useful tools. We have what's called a **break-out box**, which plugs into any RS-232 connector. In addition to letting us cross connect any pins, it also has little LED lights which light up when they get a signal. We know we should get a light on pin 2 from one device, and on pin 3 from the other device. If both devices make the same pin light up, say 2, then we know we have to cross the wires.

Also, we've found that it's much easier to use connectors with crimp connections rather than the solder-type. We bought a relatively inexpensive crimper -- about $30, which is essential. A pliers just doesn't work. You have to buy connectors made for crimping -- but in the long run it's much easier than soldering.

Many companies are also switching over to telephone type flat cable that can be made very easily with a crimper sold at places like Radio Shack. You need to get special **RJ11-DB25** jacks, but it's worth it if you ever need to make a longer cable, or re-route it. If you need sources for these things, we'll be glad to suggest some.

The following are excerpts from SCI/Fortune's Outstanding Problem Report. These are some of the known bugs for current SCI/Fortune products and in some cases a workaround solution is provided.

Fortune:Word 3.0/3.1

- While in DRAW mode within INSERT, user is unable to invoke SEARCH. However, user can invoke COMMAND SEARCH which causes unpredictable results and possibly the loss of data.

- When searching for text attributes (i.e., bold, underscore), Fortune:Word will find as a match any screen symbol that is followed by X, D, Z, O, R, or U. This is a more serious problem if using Search and Replace.

- When using Spelling Checker, you cannot add words that contain CTRL-Y characters (laser printer font codes) to the exception dictionary. For example, if a word that has been highlighted as misspelled begins with a CTRL-Y character, the message *Can't add word* is displayed when you press COPY to add the word to the exception dictionary.

- If editing an exception dictionary and adding words with CTRL-Y characters, such words are never recognized as valid.

- While in a document, invoke COMMAND SEARCH twice. At the second search, after the word is found, press COPY EXECUTE to copy the word. After the word is copied, the prompt *Which Command?* remains on the screen. The user is unable to cancel out and must kill the process, possibly losing data.

- When trying to print a file which is created and stored while using the Network, receive the message *wpprfmt: cannot open .w000000.* **Work Around:** Edit **/bin/wp2** and enter **umask 000** prior to the **if test $2** line. This will then create a temp file with 666 permission, and printing of the file is now successful.

- On a 32:16, when executing a multiple file copy or a multiple file move, only 18 files can be moved at one time. If the user attempts to copy or move more than 18 files, the user will get the messages *Can't create* and *Too many files open.* This problem does not exist on the Formula or on the 5000.❑

News From and About SCI/Fortune

Software Conversion Policies and Procedures

Now that SCI/Fortune offers both Motorola and Intel-based microcomputer families, with the proprietary For:Pro and the industry standard System V operating systems, there are more situations than ever which would benefit from the ability to convert software from one platform to another. In some cases, long time Fortune 32:16 or Formula users are replacing existing machines with the newer 386 platform, and need to convert existing data files.

Other users are bringing 386 machines into an established Motorola environment, and need to convert data in both directions. Some users who are still contemplating how to upgrade their systems and software need an incentive to bring their software up to current release levels when they order new hardware.

SCI/Fortune recognizes that, no matter which Fortune systems and software users are currently running, the process of converting from one platform to another should be as straightforward, reliable, and inexpensive as possible, while at the same time protecting users' data files and software investments.

That's why we've developed a program which makes it easy to convince users of possibilities that are opened up when they choose to order new equipment and "migration" software.

Thoroughbred BASIC migration software has been available for the Fortune 5000 platform for quite some time. Now, by addressing a number of different software products, and by offering these products at greatly reduced prices, SCI/Fortune provides users with more reasons to take advantage of software migration capabilities. These factors result in some important incentives to buy new SCI/Fortune hardware and software!

Products

For the Fortune 5000 platform, migration software packages are available now for Fortune:Word and Thoroughbred BASIC. Fortune:Word, Fortune:Windows, Multiplan, Thoroughbred BASIC and TimeMaker are offered for the Formula products. Additional products will be added to the program as they become available.

Prerequisites and Pricing

Customers currently using 32:16 systems must be at the 2.1 release level of For:Pro operating system; Formula users must be running 3.1 For:Pro; Fortune 5000 users must have Interactive 386/ix at a 1.0.6 release level.

With the exception of Thoroughbred BASIC, the list price on the current upgrades are only $90. Thoroughbred BASIC upgrade to the 386/ix version has a list price of $300.

Anyone interested in more information about these upgrade prices and the other details should contact their SCI/Fortune dealer.

Thesaurus Now Available For Fortune 5000

SCI/Fortune announced the availability of the Proximity Linguistic Technology Thesaurus for Fortune:Word 3.2 on the Fortune 5000 system. The Thesaurus is a software package that displays meanings and synonym information about user selected words within a Fortune:Word document.

The Thesaurus contains entries for 40,000 words. The total number of synonyms available is 470,000, which includes phrases as well as single words. The user must have Fortune:Word 3.2 and Interactive 386/ix operating system release 1.0.6 installed on the Fortune 5000.

The Thesaurus is very simple to use. With the cursor on the selected word, the user presses **COMMAND** and **GO TO PAGE**. Half of the Fortune:Word screen becomes the Thesaurus display, providing the meanings and synonyms of the chosen word. The user can enter new words without leaving the Thesaurus, or press CANCEL to leave the Thesaurus and return to the Fortune:Word document.

UNIFY Application DBMS No Longer Available For 32:16 Product Line

Although we have carried Unify's database management application software for the Fortune 32:16 in the past, current orders are not significant enough to warrant continued stocking of the package. At this time, Unify's database software at the 4.0 release level is available on our Formula products only.

SCI Announces 3rd Quarter Results

SCI Systems, Inc., has announced operating results for the third quarter of fiscal year 1989, ended March 31, 1989. Revenue for the third quarter reached a new record high of $245.2 million compared to $217.5 million a year earlier. Revenue for the first nine months of fiscal year 1989 was up 33% to approximately $695 million.

Net income for the third quarter was $4.2 million as compared to $4.4 million a year ago. Earnings per share were $.20 compared with $.21 the previous year. Order backlog at the end of the third quarter was $734 million, representing the eighth consecutive quarter during which the Company achieved record high backlog and the tenth consecutive quarter during which the Company's backlog increased.

A Very Happy Fortune User

The following letter was received by SCI/Fortune from a very happy Fortune user. We reprint the body of the letter with permission of SCI/Fortune and Mr. Carl Marlinga of the Prosecuting Attorny's office in Michigan.

It is with enthusiasm that I describe the Macomb County Prosecutor's Office satisfaction with the Fortune System. The acquisition of the Fortune equipment was the first major step of the current Prosecutor in making the office more productive and cost efficient.

The Prosecuting Attorney's Association of Michigan recommended this system after an elaborate bidding and screening process in which staffs from Prosecutor's offices throughout the State evaluated over 20 systems. Fortune was chosen unanimously in the number 1 and 2 categories.

The current Fortune system has automated our warrant and subpoena process as well as provided case tracking, production of standard performance statistics, forfeiture managements, victim/witness functions and integrating data processing and word processing components. We have had opportunities to share software with other offices statewide and establish an appellate brief bank.

The system has been cost efficient, resulting in considerable savings to the County, user friendly, and we have found that the Fortune Tech Team have responded quickly and efficiently to repair and maintenance needs.

We feel that Fortune has increased our effectiveness and allowed us to provide improved services to the community. We heartily recommend Fortune. Thank you for your continued assistance and concern at the national level. We continue to incorporate Fortune's improvements in our system.

Very truly yours,
Carl J. Marlinga
Prosecuting Attorney

An Electronic Reminder

Or How To Never Forget A Birthday Again

Every spring I start getting anxious. I know when my birthday is, and am always flattered when friends and acquaintances remember too. I say to myself, I'm going to be sure to remember all the special days in everyone's lives from now on. It's sort of like a New Year's resolution. Then the year goes by and I'm constantly kicking myself for missing the days I've tried to remember. So finally I sat down to figure out a good system for alerting me of approaching holidays.

As we've discussed in the past, it's fairly easy to use some UNIX utilities to set up this sort of system. The **grep** command is the simplest method. **Grep** searches a file for an occurence of a certain word or phrase. (Initially **grep** was not included with FOR:PRO, but with the advent of version 2.0, it is has been included. We also distribute similar programs such as .MDBO/bm.MDNM/.) So if I have a file filled with dates and notes, I can use .MDBO/grep.MDNM/ to search for a date, and up will pop my note. The file might look like this:

Jun 1 Dad's Birthday
Jun 10 Sam's Birthday
Jun 6 Rick and Elaine's anniversary
Sep 22 Alice's Birthday
Jan 31 Laura's Birthday
May 15 Real Estate taxes due
Oct 7 Dentist appointment

I think of this file as two columns. The left hand column has the dates, with the month always 3 characters long, and the

second column is a note about the date. The two columns are separated by a TAB which makes the notes all line up and also helps us with our program later. It's very important to be careful about always using the same three-letter abbreviations for the months for the **grep** command to work.

The grep command is an easy command to use. It looks like this:

```
grep "June 10" calendar
```

assuming that the above file is called **calendar**. The results would be:

```
Jun 10        Sam's Birthday
```

You could create the file called **calendar** with an editor like **screen**, or even with **Fortune:Word**. It doesn't have to be anything special.

However, it seems like this approach has a few drawbacks. First of all, we have to type in the date we want to search for, which is a lot of extra keystrokes, and secondly, we would only use it for today or the next day, which doesn't give much warning for mailing cards, buying presents, etc. So we decided we needed another program to automatically create the phrases for the next week of dates. Then we could just use **grep** with that list, and get all of our reminders for the next week or month, or whatever.

We thought about doing this with the shell, and although it seemed possible, it also seemed like it would be very slow. Instead, we wrote a C program which automatically generates days of the week. We call it **mkweek**. If you just type **mkweek**, it puts out something like this:

```
Jul 5
Jul 6
Jul 7
Jul 8
Jul 9
Jul 10
Jul 11
```

It starts with today and goes forward seven days. If you want to enter a different starting date, or a different number of weeks out, you can. I've incorporated it into a simple shell script to feed **grep** in Figure 1.

The first line sets the field separator, **IFS**, to a new line. This is done by putting the RETURN character between the two single quotes. The `for date in `mkweek $1 $2 $3 $4`` command feeds each day into the **grep** command that will follow. The $1-$4 aren't really necessary, unless you want to change the starting date or number of future days. In the **grep** line, the character after the date variable is a TAB. The reason I included a TAB was that without it, if I grepped for Jun 1, I got Jun 11, Jun 12, Jun 13, etc. Since I didn't want the teen digits, I put a TAB after the single digit dates. That's why I did the same thing in my **calendar** file. I use the **$HOME** variable so the program will look in each user's HOME directory for the calendar, regardless of the current directory.

This is a very simple program. We run it when we log in, or during the day whenever we feel like it. Others may have more complicated solutions. We've spoken to **Alan Polson** in Rhode Island who has had some excellent ideas for keeping track of these sorts of things, and we'll be letting you know about those soon.

If you'd like to get a disk with both of these programs on them, just order the **Reminder Disk** from us. It's priced the same as any of our other disks, and we'll try to put some of the other programs we've mentioned recently on to it as well. Oh, and don't forget.

Figure 1 - newappt shellscript

```
:
IFS='
'
for date in `mkweek $1 $2 $3 $4`
do
    echo "$date"
    grep "$date   " $HOME/calendar
done
```

/u/fortune *news*
Classified

This month we continue this new section to **/u/fortune** *news* to better serve our subscribers and Fortune computer users in general. In order to help everyone use their Fortune hardware and software to its utmost, we are providing a forum for selling and buying used equipment. We will be including this section in each issue of **/u/fortune** *news* as long as there is sufficient interest. So, if you would like to find something for your Fortune or locate a buyer for your equipment, you should not overlook this valuable resource. If you are interested in a listing in this section of **/u/fortune** *news*, please call us at (617) 894-6900.

Fortune 45-SX Computer System

Hardware Description:
1 meg memory, 4 port Comm A board, 1 additional Work Station plus Nec 3500R Spinwriter plus tractor feed, cut sheet guid and feeder cut sheet.

Software Included:
For:Pro 2.0, Multiplan, Fortune:Word

Miscellaneous cables and supplies.

Please call **Don Robinson** at **(217) 428-6467** for more information.

Two Systems - Take Your Pick!

System 1: **Fortune XP-30**, with 512K Ram, 30MB hard disk, also includes 30 MB expansion Hard Disk, thus *60 MB total capacity*. Console plus two Intelligent Work Stations and miscellaneous software and manuals.

System 2: **Fortune 32:16** with 20MB hard disk, console and 3 Intelligent workstations, 1 memory expansion (256K) and miscellaneous software and manuals.

Please call Jim at (503) 684-3417 for more information.

Fortune 32:16 System 20MB with 756K RAM, Nec 7710 Spinwriter with Forms Tractor and Hayes Smart Modem 1200. Software includes For:Pro 1.7, Extended Fortune:Word 1.0, Informix 3.20, Handshake ITE 1.3.2, Bus. Basic, A/R, Gen. Ledger and Multiplan. For more information, please call **Steve** at (818) 243-6776.

Fortune 32:16 XP 30

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Software:
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Please call the **DP Manager** of First National Bank of Bellevue at **(402) 291-4300.**

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Fortune 32:16 10MB

Hardware:
This system has 1 Meg of RAM, 10 MB hard disk, 4 port Comm-A, Hayes 1200 Modem, Console and one additional workstation, IDS 132 dot matrix and Brother letter quality printers, all cables and books.

Software:
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Call **Jim** and/or leave message at (212) 724-8114 for more information.

Fortune 32:16 with 20 Meg drive, 1 Meg of memory. Software: Multiplan, Business Basic, Fortune:Word, Multiuser and Thoroughbred BK, AP, AR and GL. Also includes NEC 7710 Spinwriter. System received light use, in excellent condition. Please call for details at **(203) 873-1459.**

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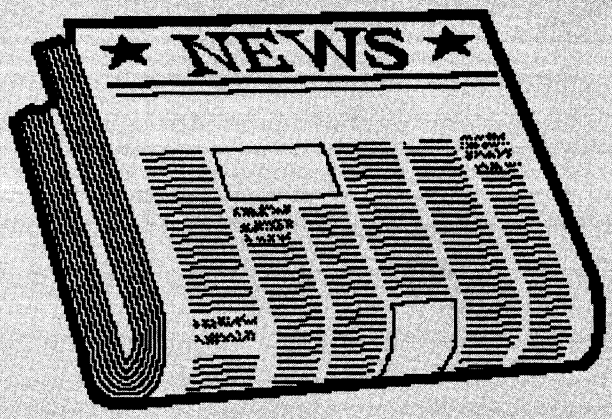

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Note: SCI/Fortune announces a new computer. Don't miss the information on the new Fortune 5000 Model 5286. See page 2 for more details.

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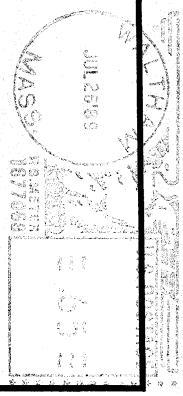

/u/fortune* news

The Newsletter for Users of SCI/Fortune Computers August 1989 / Volume 6 Number 8

EXTRA **EXTRA** **EXTRA**

Announcing An Exciting New Product:

Read *Your* Fortune Floppy on an IBM AT Drive

See Page 4 for more details.

- Dave Kloes discusses setting up the new Fortune 5000
- Ray Wannal discusses Multi-Tasking in the BAS Products
- News from SCI/Fortune--DOS 4.01, 780 MB Hard Disks and more
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/u/fortune *news*

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The text for this newsletter was prepared using an SCI/Fortune 5000 for both text input and typesetting. The typesetting was accomplished by using the Aldus Pagemaker program under VP/ix, which is a DOS emulation.

CONTENTS

From The Editors...

We did it!

Read Fortune floppies in an IBM PC/AT!

Judging by your response to our information card, it was clear that there was substantial interest in a product that would allow you to transfer information with a floppy from an IBM machine to a Fortune and back again, so we created one. We call it **fxfer**, for Fortune Transfer. **fxfer** requires a 1.2 meg (AT style) floppy drive in the PC, which is the standard in most AT's, and can be installed into many PC's or PS/2 computers. It does not work on the Fortune 5000 at this time. Even though we've been transferring files over a wire with kermit for some time, there is a real thrill in taking a floppy that has just been created on our trusty 32:16, plunking it into our AT and restoring the files onto the AT's hard disk.

We see fxfer as being very useful for people who have a Fortune in their office, and a PC or AT at home or in another office. It is also much faster than a wire transfer for large amounts of data. In addition, since it preserves directory structures, it is invaluable for transferring large numbers of files.

The copy program we use is called "**tar**", which is a standard UNIX utility. The trick is that we can fool the AT floppy to understand the Fortune format. Tar is a very powerful program that maintains modification times, as well as directory structures. It even works with multi-volume backup sets. However, since it is slightly different than the cp/archive copy command, it will not work directly from the Fortune:Word menu.

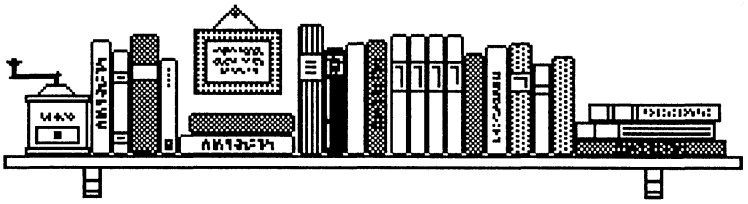
At this time **fxfer** does not convert Fortune:Word files to a DOS word processor, although we are currently exploring that capability.

We will be providing **fxfer** in two flavors: basic and menu. The basic version includes tar for the Fortune and a PC/AT. It incorporates all of the copy functions, and is used from the command line. The menu version has all of the same functions, and also includes a friendly menu interface. Both versions will get the job done with little difficulty; the menu version may be more appropriate for less sophisticated users. Pricing on the two versions is $125.00 for the basic version and $200 for the menu version. Upgrades from basic to menu are available for $75 plus shipping and handling. The basic version is available today while the menu version will be released in 6-8 weeks.

We're very excited about this product. It does something we've been wanting to do for many years, and we think it gives new life to some old work horses. If you'd like a copy, fill out the order card enclosed. Note that we do require payment with your order, and that we have a 30-day money back guarantee.

"We see fxfer as being very useful for people who have a Fortune in their office, and a PC or AT at home or in another office. It is also much faster than a wire transfer for large amounts of data. In addition, since it preserves directory structures, it is invaluable for transferring large numbers of files."

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

Question: Okay, Mr. BASIC Advisor, tell us something about this multi tasking thing in the BAS applications. The IDOL manual addresses it on page 9-5 and in chapter 6, pages 13-16, but it is not what I would call crystal clear. How does it work? - Mike Eisen, Beacon Systems.

Answer: We always cringe when Mike Eisen begins a phone conversation with "Okay, Mr. BASIC Advisor". We know we are about to be escorted into some deep you-know-what. Mike is one of those people who is not completely comfortable unless he is wallowing in the programs and files of IDOL, so to make him feel at home we'll take a look at multi tasking controls.

The purpose of having multi tasking checks in a business accounting environment is to insure that the various terminals on the system are not in conflict with each other. You would not, for example, want to have someone updating invoices on one terminal while another terminal was printing monthly statements because customer accounts could be thrown out of balance. The original authors of IDOL and the BAS applications came up with a system of checks from the menu driving programs which are supposed to keep all users in sync. When a conflict is detected the message "MULTI-TASKING ERROR, RETURN TO CONTINUE" appears at the bottom of the screen, and menu selection access is restricted. It is really quite clever how this works, but it is also a little complicated.

In order to follow our discussion it is suggested that you have your IDOL reference manual handy and that you be in front of your terminal with a printer handy.

Looking at the IDOL Manual references suggested by Mike we see that on page 9-5 there is a discussion of the fields in the Installation Info Record which pertain to multi tasking. The single Installation Info Record is contained in control file CCNVZ. Its key is "**". Although there are 33 fields in this record, end users are allowed access to only 12 of them through normal operation. These maintainable fields include installation name, number of terminals, number and type of printers, etc. (You do this from selection 3, INSTALLATION INFORMATION, from Selector 11, Business Utilities.) If you want to conduct maintenance on all 33 fields, you must enter 797 from any selector and look at file number 31. Before we go on, why doesn't everyone do that. Do an inquiry (number 4) and answer Yes to the Hard Copy question.

With hard copy in hand, let's go back to page 9-5 in the IDOL book. Here it is referring to fields 6 through 18 and fields 20 and 21. These are the multi task levels which are maintained internally by the selector system. (Field 19 is used to carry the Start of Day Indicator. Why this was thrown into the middle of the multi task levels is beyond us.) As we go through our daily processing these multi task flags will be changed and updated. We will see how in a moment.

Also on page 9-5 we see that field 31, MUL TSK DSABLE, allows us to enable multi task checks by entering a "1" or disable them by entering a "0". We suggest that you make sure this flag is set to "1". We can always clear multi tasking errors at the menu with CMT if necessary. (We discussed this way back in November, 1985, in **/u/fortune** *news* volume 2, number 6. You can clear the MULTI-TASKING ERROR message and reset all flags to zero by entering CMT at any selector.)

This is about all of the useful information we can glean from page 9-5, so let's get completely confused and turn to chapter 6 of the "Reference Guide" section of the IDOL manual. Now we are into the Selector Dictionary Detail Records where multi tasking levels are set. We will use the Accounts Receivable selector as our example. (If you do not have Accounts Receivable on your system, use Order Processing. If you haven't got an Order Processing, God Bless You! And its only August?)

From any BAS selector enter 799 and <CR>. At the Selector Dictionary Header Records screen enter 4 to inquire, and 29 at the Index field (or 35 for Order Processing). Answer No to the Hard Copy question, and, at Index, enter *4 (asterisk and the number four) <CR> for either Accounts Receivable or Order Processing. This time answer Yes to Hard Copy and get your printout. Then turn to page 6-13 in the IDOL book.

First look at field 14, MULT TASK IND. The book tells us that

it can be a space for no multi tasking or "X" to use multi tasking (or "S" to set date or "C" to change the company name, neither of which concern us here). On our hard copy we note that this field has been set to "X". We can disable multi tasking checks for this menu selection by changing field 14 to a space. But let's not do that.

Now we go to page 6-14 in the book and field 16 on the hard copy for MULT TASK LEVS. This is where it gets confusing, so bear with us. The MULT TASK LEVS field is 31 bytes (characters) long and broken into "turn on" and "turn off" levels. A single space in the field tells the computer where the "turn on" levels end and the "turn off" levels begin. The "turn on" levels are examined when you enter the selection from the menu screen, and the "turn off" levels apply when you return to the menu. (Technical note: "turn ons" are processed in program CUTSA1 at lines 5200 through 5299 and 5300 through 5399; "turn offs" are processed by CUTSA0 in lines 7300 through 7399. Does that turn you on or off?) On our hard copy of the Selector Dictionary Detail Records we see that the multi task levels in field 16 are "01P16X 01P". The "turn on" levels, before the space, are "01P16X" and the "turn off" level is "01P" after the space. The length of each level is three bytes or characters, so the first "turn on" level is "01P", the second "turn on" level is "16X" and the one "turn off" level is "01P". Since the field length is 31 bytes, we can have up to 10 total "turn on" and "turn off" combinations (30 divided by 3 plus one space). The first two bytes of each level represent a number between 01 and 16. This tells the computer which MULTITASK LEV in the Installation Information Record to update. The third byte of each level is either "P", "R" or "X". This tells the computer how to process the MULTITASK LEVEL. We will look at each in turn beginning with "P".

A "P" type level is processed differently depending upon whether it is a "turn on" or a "turn off". If it appears in a "turn on" level, i.e., entering a selection, the program reads the Installation Information and looks at the value present in the appropriate MULTITASK LEVEL. In our example of "01P" this would be field 6, MULTASK LEV 01. (Note: a level of "03P" would cause the computer to interrogate field 8, MULTASK LEV 03, "13P" would refer to field 18, MULTASK LEV 13, etc.) If the value in field 6 is a number between zero and eight, the number is increased by one, written back into the Installation Information Record, and entry is allowed into the selection without incident. However, if the value is nine or is not numeric in nature (for example "X"), the MULTI-TASK ERROR message comes up and entry is denied. Therefore a maximum of nine operators may be into Invoice Entry and Direct Sales Entry at the same time: both selections add a count of one to multi task level 01 each time someone enters the application. Once the count reaches nine, no more people are allowed in. (Other selections add to this level also, but we won't further complicate the issue.)

When a "P" type of level is used in the "turn off" mode, or going back to the selector, the appropriate MULTASK LEV in the Installation Information Record (01 in our example) is reduced by one. When there is no one doing Invoice Entry and Direct Sales Entry, field 6, MULTASK LEV 01, should be set to zero. You can see how these flags can get so messed up when you have a power failure.

Now let's look at the "R" type of level. This type does not appear in our example, but it is present in the Invoice/Memo Printing selection in both Accounts Receivable and Order Processing where the MULT TASK LEVS are defined as "01R 01R16R". Here the "turn on" level is "01R" and the two "turn off" levels are "01R" and "16R". Once again, the multi task level is processed differently for "turn on" and "turn off". When you enter the selection ("turn on"), the computer reads the Installation Information Record and looks at the appropriate MULTIASK LEV (again, 01 or field 6 for our example). If it is not specifically set to zero, the MULTI-TASK ERROR appears and entry is denied. If it is a zero, the computer makes it a nine, writes it back into the file and lets you into the selection. In the "turn off" mode (going back to the menu), the level is set back to zero regardless of its previous value. So you cannot print invoices when anyone is into Invoice Entry or Direct Sales Entry because the value of MULTASK LEV 01 will not be zero. Likewise, you cannot go into Invoice Entry or Direct Sales Entry when someone else is printing invoices because the level has been set to nine. Pretty neat, huh? We would be almost afraid to meet the propeller head who dreamed up this scheme.

Now let's look at the "X" type of level. On our hard copy of the Selector Dictionary Detail Records we notice that multi task level 16, or field 21 in the Installation Information Record, is to be processed as "X" in the "turn on" mode. This tells the computer to check the appropriate level (16) and set it to "X" if and only if it first contains either a zero or an "X". (In the "turn off" mode, the level is set to zero regardless of its previous value, but this does not happen in Invoice or Direct Sales Entry.) Before the first operator goes into Invoice or Direct Sales Entry, level 16 is set at zero. That first operator sets level 01 to 1 and level 16 to "X". The second operator into the selection is not hampered because level 16 is set to "X": the MULIT-TASK ERROR will not appear if level 16 is either zero or "X". Notice, however, that after all operators have finished entering Invoices and Direct Sales, level 01 is set to zero, but level 16 is still set to "X" (as we said, there is no "turn off" processing for level 16 in either of these applications). But if you recall the multi task levels for Invoice/Memo Printing are "01R 01R16R". Level 16 will be reset to zero because of the "16R" "turn off" for this selection (reset to zero regardless of previous value). This is all very interesting, but why bother with level 16 at all?

If you take the time to look through the entire BAS system you will find that another place level 16 is acknowledged is when printing the Accounts Receivable Aged Trial Balance. For this selection the multi task levels are "16R05R 05R16R". We will ignore the 05 level here and look at what is happening with level 16. Going into the selection ("turn on") the computer looks at level 16 to make sure it is set to zero. If it is, it is written back as nine and the selection is authorized.

This will keep all other operators out of Invoice Entry and Direct Sales Entry while the Aged Trial Balance is printing. But if you try to print the Aged Trial Balance after Invoice Entry, which sets level 16 to "X", and before Invoice Printing, which is where it is reset to zero, you will receive the MULTI-TASK ERROR message. In other words, you must print all of your invoices and memos before you can print an aged trial balance.

This can create a bothersome problem. When you first go into your business accounting at the start of day, presumably all multi task levels are set to zero. Let's say you have not had that first cup of coffee yet. You know you need to print an Aged Trial Balance first thing, but you absentmindedly go into Invoice Entry. The computer asks you to enter your Company Code and you catch your mistake. So you press <F4> to go back to the menu and then try to print the Aged Trial Balance. "BEEP, BEEP! MULTI-TASKING ERROR, RETURN TO CONTINUE! BEEP! BEEP!" Just what you need before coffee, right?

The computer does not know that you have not entered any invoices. All it knows, by looking at level 16 which is set to "X", is that you SELECTED to enter invoices from the menu. Now, by golly, you'd better print those phantom invoices before you do something stupid like try to print an aged trial balance.

So you have three choices. Forget the dumb computer and get your coffee, select "Print Invoices/Memos" and get the "No Invoices To Print" message, or tell the computer where to get off with the "CMT" command. We always choose the latter.

Aside from this little quirk, the multi tasking system seems to work pretty well. All in all, we recommend you do not disable it. The benefits far outweigh the few problems.

As a post script, we will mention a couple of documentation errors which may be confusing. Pages 6-15 and 6-16 refer to functions which allow up to eight different terminals to operate at the same time for the "P" indicator. But the definition for the "P" indicator at the top of page 6-15 tells us that the task will be executed if the level is equal to 0-8. This means nine terminals will be allowed in: the first sets it from 0 to 1, the second from 1 to 2, and the ninth from 8 to 9. Since the level is equal to 8 after the eighth terminal has entered, terminal nine will not be denied access. We have not checked this out, but there is obviously something wrong with the documentation.

Also on page 6-16, the second paragraph should read:

"Function 3 can be executed from nine [not eight] different terminals at the same time. Function 3 cannot be executed if function 4 [not 2] is being executed."

Come on, fellows! This stuff is complicated enough without botching up the instructions!

Software For The Fortune 32:16 And Formula

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

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1099 LINK ($295.00) - this product produces Form 1099's required for submission to the IRS and is an extension to the standard BAS Payroll module.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

WESTERN LINK ($195.00) - provides instruction on how to use your Fortune for sending/receiving telex messages using Western Union's Easylink. Can replace your telex! Fortune ITE or Handshake software required.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

FINANCIAL LINK ($295.00) - passes BAS Income Statement and Balance sheet to Multiplan or UltraCalc. Stores and instantly reprints these statements for current/previous period without sorting.

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System Administration: Part 28

No Longer requires a Degree in UNIX Wizardry

This series is a must for all users of SCI/Fortune computers. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

This month we are continuing with our discussion of the Fortune 5000. In this issue and the next issue, we will discuss the initial installation and setup for Interactive 386/ix and address some of the hardware configurations. We will then go through the same installation process for SCO Xenix and DOS.

One of the nice features of the Fortune 5000 is that the graphics capabilities are built into the motherboard. On many 386 systems, a separate "graphics card" is needed to support the type of monitor and video mode you will be using. The common video modes are:

Monochrome/Hercules
CGA - Color Graphics Adaptor
EGA - Enhanced Graphics Adaptor
VGA - Visual Graphics Adaptor

The type of monitor you choose and the setting for the display type determine the resolution that you will get. The point here is that with all of these options built into the system, you can change monitors without having to purchase a compatible "card".

We mentioned that one of the advantages of using the Fortune 1000 terminal is that it can be used as a terminal or monitor by setting a switch on the back to "external" or "internal" video. For the Fortune 5000, this switch would be set for "external" and the display type would be "monochrome". You will need a standard monitor 9-pin cable that will go from the 9-pin port on the monitor to the system.

Before we talk about installing the Unix operating system, we should mention a couple of items. First of all, there is a bank of switches on the motherboard that must be set depending on the type of monitor you are using. The settings for each type are given in the "Fortune 5000 Hardware Setup Guide". The default setting is "EGA" so if you are going to use another monitor type, these switches will have to be changed. For example, if you are going to use a Fortune monitor, you would set these to the "monochrome" setting.

Secondly, the system has an internal "setup" program that can be accessed when the system is first powered on. If the setup parameters are incorrect, you will be prompted to depress the "F2" key to access the setup program. Otherwise "setup" can be accessed by depressing the "CTRL/ALT/ESC" keys. The setup programs allows you to specify or change:

- date/time
- diskette drive types installed
- hard disk types installed
- base and extended memory
- display type
- keyboard
- CPU Speed (16 or 8 MHZ)

In addition, the system uses the "Phoenix BIOS" which gives the system IBM PC/AT compatability. The setup program above is provided with the Phoenix BIOS. Selecting most of these parameters is fairly easy. The hard disk type is selected based on the drive specifications, mainly the number of cylinders and number of heads that the drive has. We strongly recommend that you enter the setup mode and write down the parameters that are set when the system is delivered to you. If you get an "invalid configuration" message, you can compare the settings and set them back. Normally, the only time you will use the setup program is if you add or change any of the items listed above.

INSTALLING INTERACTIVE 386/ix

Now that we have put some of the hardware issues behind us, it is time to talk about software. In the last issue, we listed the software and documentation that are provided to install Interactive 386/ix. We will now go through the procedure and logic we used to install the operating system.

1. Before we begin, we will caution you that 386/ix will format your ENTIRE drive. Whatever is already loaded on your system (such as DOS), is lost when you install 386/ix. We learned this lesson the hard way. We installed SCO Xenix and DOS first since we were familiar with the procedure and had to reinstall it. It is amazing what you can learn by reading the documentation first!

2. You can boot the system from diskette anytime by inserting the 386/ix "BOOT" floppy disk. The system will boot from this disk by either applying initial power or by depressing the reset button on the front of the machine. This is basically the same procedure as the Fortune 32:16 and volume 1 of the cold boot set. Once initial diagnostics have completed and the diskette has been read, you will see the prompt:

```
boot:
```

To start the process, you can simply depress <RETURN> or enter "/unix". If you wait about one minute, the system will boot itself.

3. You are then asked whether you want to do a complete installation or not. If you answer "y", the installation procedure will begin. If you answer "n", the boot procedure assumes that initial installation was already done (such as formatting the drive) and will reinstall the files on the "BOOT" and "CORE" disks. In this case, we answer "y" since we are installing 386/ix for the first time.

4. You are given a warning at this point about the destructive nature of what you are about to do and asked if you want to proceed. We answered "y" and were then asked if we wanted to (re)format the disk. Again, since this is a first time installation we answered "y".

5. Next, we were asked if we wanted to do a surface analysis. Basically, the surface analysis checks the hard disk for bad spots. There are two theories of thought here. If we answer "y", a read/write surface analysis is done which takes longer. If we answer "n", only a read surface analysis is done. Later on in the installation procedure you will be given a chance to enter the known defects. One theory says that to be safe, you should do the complete (longer) surface analysis. The other theory says that a read surface analysis is sufficient if you have the opportunity to enter the known defects. Certainly, the factory test is much more exhaustive. In any case, we played it safe and answered "y".

6. We were then told that our disk had 7 heads and 1250 cylinders and asked if this was correct. Since this is what we specified in the "setup" program, we answered "y".

7. The system then told us that it was going to use 1 of the cylinders and that left us with 1249 cylinders, 152198144 bytes and 121856 bytes per cylinder. It then asked if we wanted to allocate exclusive use to DOS. We answered "y" since we want to create a separate DOS partition. If we only wanted to install 386/ix and SCO Xenix, we would still answer "y" because the space required for other operating systems must also be included in the "DOS" partition.

We were then asked how many cylinders we wanted for the DOS partition. You will have to get your calculator out here. We know that we have 1249 cylinders. We want to partition this disk so that we have 60MB for Interactive, 60MB for SCO Xenix and 30MB for DOS. We turned this into a percentage by dividing each of these numbers by 1249:

Operating System	MB	%	Cyl.
Interactive	60	40	500
SCO Xenix	60	40	500
DOS	30	20	250

Obviously, only the dealers out there would probably want to put both Interactive and SCO Xenix on the same system but the exercise is a good one anyway. The total number of cylinders we want to allocate to the "DOS" partition which will hold both DOS and SCO Xenix is 750. This is how we answered the last question.

The system then told us that it was going to create a DOS partition starting at cylinder 1 for 750 cylinders and a 386/ix partition starting at cylinder 751 for 499 cylinders. We were then asked if this was the partitioning that we wanted and we answered "y".

8. We were then asked if we wanted to enter the known defect areas on the hard disk. If you did a complete surface analysis above, you can take your chances and answer "n" or you can take the cover off of your system and look at the top of your hard disk drive to find the known defects and enter them here.

9. We were then asked if the following reasonable partitioning for Interactive 386/ix was acceptable to us:

filesystem	cylinders	megabyte
root	110	13.4
usr	330	40.2
swap/paging	59	7.2

The real issue here is whether you want your disk split up or not. In previous discussions about the Fortune 32:16, we discussed this issue in great detail. Three advantages to partitioning are:

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(1) You have control over putting the most used applications closer to the center of the disk where they can be accessed quicker.

(2) Since data is stored non-contiguous, you can minimize the area over which data is "scattered".

(3) If the root filesystem is corrupted and your application programs are in the "usr" area, you can recover the "root" partition without destroying the "usr" data (which may or may not have been backed up recently

The major disadvantage to partitioning is that the System Administrator (or your dealer) must reload the system if you run out of room on one partition and must make it larger.

We leave this decision up to you and your dealer. Personally, we try to make the administrator's job as easy as possible so we opted to say "n" to this question so that we could change the partitioning to suit us. You might also answer "n" if you want the partition sizes to be different than the "reasonable" sizes given above.

Since we answered "n", we were asked if we wanted a separate "root" and "user" filesystem. If you want them separated but with different sizes, you would answer "y" and be able to tell the system how you want the space allocated. We answered "n" so the entire Interactive partition would be treated as one filesystem. This, by the way, is the way that the Fortune 32:16 allocates space unless you put on a second hard disk in which case the second hard disk must be treated as a separate partition.

We were then told that on our disk 1MB was equal to 8.6 cylinders and asked how many cylinders we wanted for swap/paging. Just like any other Unix system (including the Fortune 32:16) you must have a "swap" partition. You can refer back to your previous issues of **/u/fortune** *news* for our discussion of the swap area of the hard disk. We figured that the number of cylinders calculated above as "reasonable" was in fact reasonable so we used 59 which is just over 7MB of swap area. Remember that the more space you allocate to swap, the less data area you will have. If you don't allocate enough swap space, you could end up with "not enough swap" error messages especially if there are a lot of users on the system. The only way to change swap allocation once it has been set is to reload your entire system.

The system then summarized our partitioning and asked if this was acceptable:

root/usr 440 cylinders, 53.6MB
swap/paging 59 cylinders, 7.2MB

Once we answered "y", the screen indicated that the system was reformatting and initializing the hard disk. This procedure takes some time and was a good time to go get a cup of coffee or write a novel. We were then asked if we were installing from tape to which we answered "n". Since the system was not being installed from tape, we were asked to install each of the four "CORE" diskettes. Once the last diskette was copied to the hard disk, we got the message to remove the last diskette and depress <RETURN> to reboot the system.

10. Now that the core operating system has been loaded on the disk, the system boots from the hard disk when we depress the <RETURN> key at the "boot:" prompt. The system went through its normal startup routine and we eventually got the standard 386/ix login prompt. Just prior to that there was a message that said to login as "setup" (not to be confused with the Phoenix setup we spoke of earlier).

We logged in as "setup" and were taken through several prompts that included setting up:

- time zone
- daylight savings (y/n)
- user login accounts
- assign passwords to various administrative logins
- assign passwords to system logins nuucp, root, and sync
- set the system name

Finally, we were able to login as "root" (sound familiar??).

11. We still had several sets of operating system diskettes to install. There is a special System Administrator login that is a user friendly menu for doing the various tasks that the administrator is responsible for. When we logged in as "sysadm", we saw the following menu:

```
*********************************************

                SYSTEM ADMINISTRATION

1 diskmgmt          disk management menu
2 filemgmt          file management menu
3 machinemgmt       machine management menu
4 packagemgmt       package management menu
5 softwaremgmt      software management menu
6 syssetup          system setup menu
7 ttymgmt           ttymanagement menu
8 usermgmt          user management menu

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, q to QUIT:

*********************************************
```

Selection 5 is used to maintain software packages. We will talk about some of the other selections on this menu later on. When we selected #5, the following submenu appeared:

```
*************************************************

                SOFTWARE MANAGEMENT

1 installpkg      install new software package...
2 listpkg         list packages already installed
3 removepkg       remove previously installed package...
4 runpkg          run software package w/o installing it
```

```
Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, ^ to GO BACK, q to QUIT:

******************************************************
```

Basically, this menu functions the same as "S5" on the Fortune Global Menu. Since we want to install the rest of our software, we selected #1. Once selected, you are asked to insert the diskette and <RETURN> to continue. Using this selection, we installed the remaining software:

File Management/Help Utilities (1 volume)
Kernel Configuration(3 volumes)
Spell Utilities(1 volume)
Terminal Utilities (2 volumes)
Basic Networking (2 volumes)
TCP Ethernet Suppot, MICOM Version (2 volumes)

Remember that we allocated about 60MB to the Interactive partition of the hard disk. Approximately 7MB of this space we allocated for swap/paging. This means that we had approximately 53 MB of data space available. After the installation of the Interactive diskettes, we now show that have used 13MB and have 40MB remaining. We pass this on just to give you a feel for how much room the basic operating system takes.

For those interested in doing C programming, the "Software Development System" can also be installed. The Development System extension contains the Unix System V.3 programs needed to compile, link, and debug C programs. It also contains the Source Code Control System (SCCS), make, yacc, lex, and other software development tools. The 5 volume set will take up approximately 5 additional megabytes of disk space.

In the next issue, we will talk about the tape unit and backups; how to "fine tune" parameters for things such as additional memory; how to setup a parallel or serial printer; and how to configure terminals. We will also discuss some operating command differences between For:Pro and Interactive 386/ix.❑

News From and About SCI/Fortune

SCI/Fortune Distributes Microsoft MS-DOS

SCI/Fortune has announced that **Microsoft MS-DOS** is now available for the Fortune 5000 series of computers. MS-DOS version 4.01 is in stock and ready to ship immediately. MS-DOS is made available from SCI/Fortune to provide dealers with a "one-stop" system vendor. Dealers no longer have to purchase from multiple suppliers to offer both Unix and DOS environments to their customers.

780 MB Hard Disk For Fortune 5386

SCI/Fortune has announced two new configurations of the Fortune 5000 model 5386 that include a 780 MB hard disk drive. These additional Fortune 5386 configurations are offered for database intensive environments where additional speed and capacity are required.

The 780 MB hard disk drives are high capacity, high performance, random access storage devices utilizing 5.25" thin film disk as storage media. Each disk surface employs one movable head to access the data tracks. This particular drive features a capacity of 781 MB unformatted and 660 MB formatted. The drive utilizes advanced 3380 Whitney type head flexures and metal in the gap composite heads.

High quality mechanical construction with a sophisticated single printed circuit assembly, which utilizes Surface Mount Technology (SMT), allows for high MTBF (50,000 hours - MTBF means Mean Time Between Failures) and maintenance-free operation throughout the life of the drive.

The drive utilizes the industry standard ESDI compatible interface with a 15 megabit/second data transfer rate. Average access time is 18 milliseconds. If the power is removed from the drive during a normal power down or in the event of a power failure, the actuator assembly will automatically retract and be locked in a non-data area located at the innermost portion of the disk. The heads will land on and take off from this area only.

Due to the high capacity nature of the drive, a high performance 15 megabit/second ESDI hard disk controller is also included with these systems. For more information, contact your local dealer.

The following "Outstanding Problem Reports" are some known bugs that exist for Fortune:Word 3.1 and Fortune:Word 3.2. In all cases, there is a work around and in most cases, the problem has been resolved for the next version of Fortune:Word.

Fortune:Word 3.1

Number 11029 - If one user attempts to edit a glossary that is in use (attached) by another user and then - without exiting Fortune:Word - edits and saves a regular document, glossary verification on that document takes place.

Work Around - When the "Verification errors options" box appears, press DELETE. Then delete the regular documents's **.gl** file by specifying *documentname.gl* with the "Delete document" option on the "Filing" menu.

Fortune:Word 3.2 (for 386/ix 1.0.6)

Number 11028 - If attempting to run Records Processing from the 5386 console, a zero length output document is produced.

Work Around - Run Records Processing from a Fortune terminal. This problem has been corrected in release 3.2.1 for 386/ix 2.0.2.

Number 11030 - If running the spelling checker on a document with six or more pages and name longer than eight characters, using an exception dictionary - specified from the menu - with a name longer than seven characters, the **.dc** file can get corrupted, leading to various unpredictable results during later editing.

Work Around - Use an exception dictionary name that is no longer than seven characters. If a document has already been corrupted, delete its **.dc** file by specifying *documentname.dc* with the "Delete document" option on the "Filing" menu and then re-edit the document. This problem has been corrected in release 3.2.1 for 386/ix 2.0.2.

Number 11026 - When converting multiple documents from Motorola to Intel format, no more than seven documents get converted before the process stops indicating an open-error.

Work Around - Repeat the process for remaining documents; the documents already converted have been listed on the screen. This problem has been corrected in release 3.2.1 for 386/ix 2.0.2.❑

SCI/Fortune Dealers Consider J.U.M.P. Program A Big Success

The following letters were sent by very satisfied dealers to SCI/Fortune commending them on their J.U.M.P. program which is a unique service that aids dealers in sales and support. All of the letters were addressed to Mr. Jim Smith who is Marketing Manager for SCI/Fortune.

The first letter is from Ernest Lang who is Senior Vice President of Care Information Systems located in Springfield, IL. The second letter is from Tom Carroll who is President of Sierra Systems which is located in San Mateo, CA. The third letter is from Robert Lang and Sharom Jahanshir from SSP Computer Service which is located in Springfield, IL.

July 6, 1989

Dear Jim:

It was a pleasure meeting with you while in San Jose on June 22, 1989. I believe good things will come out of our relationship for both of our companies.

On June 26th and 27th, Jim Jones and Mariann held an excellent two day medical sales seminar in Springfield. We had eight people in attendance. I wish we had had this type of training program in place when we were engaged in the Digital Authorized Dealer Program. We were the medical software vendor they chose. We had 56 dealers lined up when Digital dropped the A.D.D. program. Had we a Jones, Seifert and Boesch on our team plus a progressive attitude towards the medical vertical as SCI/Fortune, I am positive that DEC's Dealer Program would have been a success.We are looking forward to a successful and pleasant and profitable relationship with you and your company.

Best regards, *Ernest L. Lang*

August 15, 1989

Dear Jim:

I want to express my sincere appreciation to you and the marketing team at SCI/Fortune. We recently went through the J.U.M.P. training course on medical sales led by Jim Jones and Sue Jackson. I was impressed that Jim and Sue wanted to hold a private session for Sierra people.

The training was attended by our sales staff, management, our technical director, our telemarketer, and our software vendor. This combination of talent along with Jim's and Sue's experience led to two days of productive meetings and idea sharing.

My initial reaction to the program was one of cautious optimism but, I made a commitment to follow the program for six months. It took only two weeks to produce our first solid success for the program. One of my new salespeople sold a turnkey dental system after only two calls on the prospect and NO DEMO. The client is now up and running and very happy with the system.

The J.U.M.P. program is the best VAR support program I have ever seen. The program works and the commitment and follow-up by Jim and Sue is excellent. Keep up the good work and please let me know if I can help in any way.

Sincerely, *Thomas E. Carroll, President*

August 9, 1989

Dear Jim,

On Friday, July 14th, Mariann Boesch was kind enough to spend some time working on telemarketing with us. The phone day was very productive and educational. During that time we made 40 to 50 calls utilizing a telemarketing script provided by Mariann. We generated five quality prospects that day and we also developed a tracking system to control and monitor our territory. All calls are grouped into categories by the type of response that occurred during that call with a time frame for follow-up.

This method of call tracking and grouping of calls for follow-up is important to the success of any sales staff. It minimizes the possibility of future prospects falling through the cracks and losing contact with them.

The objective of the Phone Day was to develop a script we were comfortable with and that was effective in creating an interest, researching what is being used, finding out what phase of computerization the potential prospects were at, what needs the callers have and developing initial rapport. We worked on ways to group these calls by response and developed tracking methods for these calls. We learned how to utilize our telemarketing efforts to get the best results. We met our objectives for the phone day and are continuing to use this approach with our daily telemarketing calls.

We have found that telemarketing is essential in managing our territory and would recommend to any dealer to take advantage of the experience SCI/Fortune Sales Managers have in working together with their dealers in doing phone days.

Best Regards, *Robert E. Lang and Sharom Jahanshir* ❑

/u/help

Question: Thanks for your suggestions on the problem of using a laser printer with two separate line spacings. I h ad the exact problem and implemented your suggestions.

Possibly some of your other readers had the same problem I did. I remembered that Fortune:Word Adds and Changes for version 3.1 had the suggested modifications to printcap to change to 6 lines per inch. Unfortunately, it has a typo. It states on page B-9 that the new entry to change the line spacing is ":lv=/480" and it should be ":lv=l/480:\". If you leave out the "l", there is no output to the printer.

I have a strange problem. I'm using the original 32:16 and installed FOR:PRO 2.1. I noticed that using the CANCEL/DEL key when escaping to the shell from the main menu on FORTUNE:WORD did not kill the new process. However, the CANCEL/DEL key works as expected when escaping to the shell from within editing a document. Is this a bug that can be fixed?

On my wish list for your disk distribution: Xmodem (maybe Zmodem) transfer protocol. Many of the bulletin boards I've seen do not support Kermit. Also, an Nroff terminal driving table to use the T option with the Laserjet.

Very truly yours, John Patrick Brundage, Chicago, IL.

Answers: Thanks for your correction of the printcap entry. As it's stated in the FORTUNE:WORD Adds/Changes manual, the HP Laserjet is normally setup to print at 6.32 lines per inch to allow for a full 66 lines per page. While this is desirable for most word processing, any time you need exactly 6 lines per inch for forms completion or label printing, you need to make the following change. Here's the whole listing for the benefit of those who don't have their manual. Old printcap entry:

```
:lv=I/434
:is=\EE\E&12e7.6c66F\E&s0C:\
```

New printcap entry:

```
:lv=I/480
:is=\EE\E&12e8c66F\E&s0C:\
```

We'll be discussing a glossary entry to print 3-up labels on the laser printer next time. As to your questions about the CANCEL/DEL, we don't have an answer as yet, although we are in the process of checking with SCI/Fortune. If any readers have any ideas on the XMODEM or nroff questions, please let us know. We'll also check usenet and see if we can't find something.

Tape backup

Question: On our Fortune:Formula we are currently using

/bin/tar: tar:
For:Pro Development Utilities 1.2d(F). Made Dec 11 1986
from tar.c 4.5 (Berkeley) 81/04/02.

I can do backups onto tapes, but when I try to read those tapes, tar will list the content of the tape but in the end it brings the message "tar: tape read error". Reformatting of the tape doesn't help either. Is it possible that I'm using an old version of tar on the Formula? I have to use tar, because I do my backups at night (cron / at) and far wants a terminal to function properly... On a Fortune SX the same version of tar works without those errors. Have you heard of any problems of that kind? You know how important a flawless data backup is, so I would be very grateful if you could help me.

Yours sincerely, Heinrich Boeker, Vienna, Austria

Answer: Scott Chapman of SCI/Fortune had a couple of hints on this one. First of all, the version of **tar** that you are using is a "pre-release" version. This is indicated by the "d" after the 1.2. Actual releases don't include those letters. The (F) indicates that this is a Formula version. The current release is 1.2(F).

There are also some other things to be aware of. You should be using `/dev/rst00` as the output device for tar instead of `/dev/st00`. Before reading or writing, you should give the command:

```
st unlabeled read rewind
```

which tells your Formula that it is about to operate on an unlabeled tape.

There is also a simple way to get **far** to work with **cron**. If cron is started with an rc file, it does not have a terminal attached to it, and so far will not work. However, if you start cron from a terminal, that terminal will remain attached to cron, even after you log off. Then **far** should work fine.

Question: Here's one of our own. We recently started using the tape backup on our Fortune 5000. We performed backups using tar and the Interactive backup command, and it seems to work fine. However, when we try to list the contents of the tape, it aborts with a read I/O error message. We wanted to know why, and George Lambert of SCI/ Fortune was able to help us.

Answer: Our major problem was that we were using the DC600A tapes that we used in our SX and Formula 4000. It turns out that that is the WRONG cartridge to use. **The correct tape is either a DC600XTD, or the newer DC6150 which is 3M's new number.** This tape has a higher density, and will write reliably with the 150 meg drive. As we've noted in the past, a 600A tape written on a Formula 4000/8000 can be read in the Fortune 5000.

The other lesson here is that it's always a good idea to get a listing from a tape. The process of listing the contents forces the entire tape to be read. Usually, if there are any errors on the tape, this will show them.

Although it is not necessary to format a tape before using it (format appears on the sysadm menu on 386/IX 1.06 just because the tape is a removable media device, just like a floppy, and so they lump them all together) it is usually a good idea to *retension* it. Unfortunately, this can't easily be done under version 1.06, so you'll have to do it on a different machine, if you have one. (If it's essential, you can just do your backup twice -- the first time will essentially wind and rewind the tape, and the second time should be a good backup.) Under the 2.02 version of 386/IX, just type **tape** and you'll get a menu that includes retensioning, or you can just type **tape retension** and it will do it for you. On For:Pro machines, retensioning is an option under the tape streamer utilities. Retensioning winds and rewinds the tape so that it will be stretched evenly across the tape heads.

Queries:

The following are some queries that we have received from some of our readers.

Progress Software

Mr. Bill Sealy of Theta Electronics in Williamstown, MA contacted us recently about the Progress Database program. He was concerned because Progress Software Corporation has announced that they will not be porting any new releases of Progress to the For:Pro operating system. This means that the final release on all 32:16/SX computers will be Version 4. This is somewhat ironic in that Progress was developed largely on a Fortune computer. Bill wanted us to put out a call to our readers to see how many people are using Progress, and hopefully to see if we can induce Progress Software to continue to support us.

If you are interested in this topic, please contact us at 617 894-6900 as soon as you can.

Postscript/troff/Elan

Mr. Brian Squire of Parkwest Communications would like to run the Elan software on his Fortune computer. This software runs troff and can output to postscript printers. Unfortunately, the cost to port it is $5,000. If enough of us are interested in this software, the cost per person could be greatly reduced. If you would like more information, contact Brian at 212 222-6100.❑

Classified

This Classified section of **/u/fortune** *news* is designed to serve our subscribers and Fortune computer users in general. In order to help everyone use their Fortune hardware and software to its utmost, we are providing a forum for the selling and the buying of used equipment. We will be including this Classified section in each issue of **/u/fortune** *news* as long as there is sufficient interest. So, if you would like to find something for your Fortune or locate a buyer for your equipment, you should not overlook this valuable resource. If you are interested in a listing in this section of **/u/fortune** *news*, please call us at (617) 894-6900.

Fortune 32:16

1 MB Memory
30MB Hard DIsk
Fortune:Word
Will take best offer.
Call David at
(718) 965-9857

SX 70 T

This unit has a 70 MB hard disk, 60 MB Tape streamer, 1MB of RAM and has For:Pro 2.0. It turns out we have an extra machine that we would like to find a good home for. Call the friendly folks at **/u/fortune** *news* for a good deal - (617) 894-6900.

20MB 32:16 - Includes For:Pro 1.7.4.1, 768K RAM, console, 2 terminals, 4-port Comm A and a **20MB Tape Expansion Box.** Software includes: SMC BAS modules, Extended Fortune:Word, Developtment Utilities, and a C compiler. Purchased direct from Fortune, Hardly used, will take best offer. Call Gerry Armel at (508) 285-3040.

Fortune 45-SX Computer System

Hardware Description:
1 meg memory, 4 port Comm A board, 1 additional Work Station plus Nec 3500R Spinwriter plus tractor feed, cut sheet guid and feeder cut sheet.

Software Included:
For:Pro 2.0, Multiplan, Fortune:Word

Miscellaneous cables and supplies.

Please call **Don Robinson** at **(217) 428-6467** for more information.

Fortune 32:16 with 20 Meg drive, 1 Meg of memory. Software: Multiplan, Business Basic, Fortune:Word, Multiuser and Thoroughbred BK, AP, AR and GL. Also includes NEC 7710 Spinwriter. System received light use, in excellent condition. Please call for details at **(203) 873-1459.**

Fortune 32:16 10MB

Hardware:
This system has 1 Meg of RAM, 10 MB hard disk, 4 port Comm-A, Hayes 1200 Modem, Console and one additional workstation, IDS 132 dot matrix and Brother letter quality printers, all cables and books.

Software:
Includes Fortune:Word, Multiplan, some business applications, ITE, Basic, Pascal, C,Development Utilities and disks from **/u/fortune** *news.*

Call **Jim** and/or leave message at (212) 724-8114 for more information.

Two Systems - Take Your Pick!

System 1: **Fortune XP-30**, with 512K Ram, 30MB hard disk, also includes 30 MB expansion Hard Disk, thus *60 MB total capacity*. Console plus two Intelligent Work Stations and miscellaneous software and manuals.

System 2: **Fortune 32:16** with 20MB hard disk, console and 3 Intelligent workstations, 1 memory expansion (256K) and miscellaneous software and manuals.

Please call Jim at (503) 684-3417 for more information.

Fortune 32:16 XP 30

Hardware:
1 Meg RAM, 30 Meg Hard disk, 8 ports plus printer port, Console terminal plus 2 FIS 1000 terminals, Nec 3500 LQ printer with acoustical enclosure, and Anadex 9500 Dot Matrix printer.

Software:
Fortune:Word Plus, Multiplan, a complete RDBMS accounting set of software plus 4GL RDBMS utilities, and more.

Please call the **DP Manager** of First National Bank of Bellevue at **(402) 291-4300.**

Fortune 32:16 System 20MB
with 756K RAM, Nec 7710 Spinwriter with Forms Tractor and Hayes Smart Modem 1200. Software includes For:Pro 1.7, Extended Fortune:Word 1.0, Informix 3.20, Handshake ITE 1.3.2, Bus. Basic, A/R, Gen. Ledger and Multiplan. For more information, please call **Steve** at (818) 243-6776.

Fortune 32:16 System 20 w/keyboard and CRT, 768K memory, 800K flex disk drive, 20 meg hard drive, 4 port Comm A board and 3 Intelligent work stations. Installed software: For:Pro, Business BASIC, BAS Gen. Ledger, BAS Order Processing, Accounts Rec., and Payable, BAS purchase orders, Fortune:Word , Multiplan. Call **C. Laird McClure** at (215) 431-2000.

Don't Miss the Editorial on Page 4 that describes our new software product that allows you to read a Fortune floppy on an IBM AT computer!

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The Newsletter for Users of SCI/Fortune Computers September 1989 / Volume 6 Number 9

SCI/Fortune Announces Availability of Interactive's Release 2.0.2 of Unix.

This version has XENIX Binary and Source Code Compatibility Which Opens Up a Wide Array of Software Which Will Run on the Fortune 5386 Computer

See News From Fortune for more details.

Important Note: This Offer Has Been Extended Until The End of October!

Receive a *FREE* copy of

Fortune:Word

when you buy any new computer system from your SCI/Fortune Dealer.

If you buy a *new* computer system by the end of **October, 1989**, we will include the acclaimed **Fortune:Word** word processing package at *no extra charge!*

This is a $995 value!

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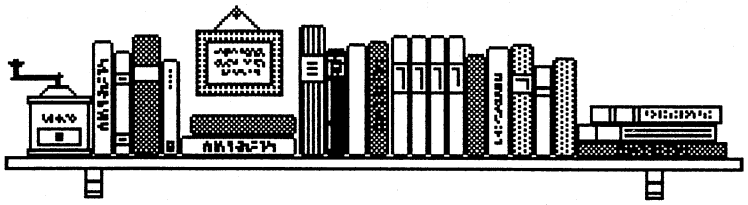
CONTENTS

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

Question: *Are you going on the Thoroughbred cruise this year?*

Answer: Nope. Concept Omega will not be "seaing" us this year (so to speak). At the beginning of August we received word from Terry Bradunas, Marketing Director at Concept Omega, that the cruise from Miami to Nassau during October 27-30 is not to be. According to Terry, "The cruise we had planned for our conference this year required a fairly significant early registration. Since we have not received the same, we have made the decision to cancel the cruise.

"We do not need a brick to fall on our heads to hear the roar of the crowd. You are looking for the traditional resort type format and we will endeavor to provide what you have requested.

"Ok - we have a great back-up plan that we will put into action. There are three resorts in sunny Florida that are presently being considered for the conference; with a May timeframe."

A May timeframe? We can't speak for everyone, but for us the month of May has about 45 days, each of which is 26 hours long. And we still have work left over in June. Terry ends his letter with, "As always, your comments are encouraged and welcomed." We will be commenting.

We had been looking forward to examining the new Thoroughbred products at the conference, specifically the Solution-IV business applications, and were a little disappointed. But now it appears we will have our opportunity. Concept Omega is taking its show on the road between October 2 and December 1 in a series of eleven one-day conferences. For those interested here are the dates and locations. Call Concept Omega Corporation at (800) 524-0430 to register.

Monday, October 2, the Bradley Ramada Inn,
Windsor Locks, CT

Wednesday, October 4, Concept Omega Corp.,
Somerset, NJ

Friday, October 6, Marriott, West 150th,
Cleveland, OH

Tuesday, October 10, BWI Courtyard by Marriott,
Linthicum, MD

Wednesday, October 11, The Radisson Suites,
Downers Grove, IL

Friday, October 13, Holiday Inn, Peachtree Corners,
Norcross, GA

Tuesday, October 24, San Jose Hyatt,
San Jose, CA

Wednesday, October 25, Days Inn,
LaPalma, CA

Thursday, October 26, Sheraton Denver Airport Hotel,
Denver, CO

Friday, October 27, Sheraton Grand Hotel,
Irving, TX

Friday, December 1, Caribe Hilton,
San Juan, PR

Question: I found your article about multi-tasking in BAS very interesting and not too hard to follow. It was interesting to learn about the nine user limit for order entry. Will you outline the whole BAS multi-tasking system for us? I would like to know specifically what is and is not allowed depending upon what other users on the system are doing.

Answer: Since you don't believe the horse is really dead, let's keep beating it.

As we mentioned last month there are sixteen registers, or "levels", which are maintained by the selector system for the purpose of controlling multi-tasking conflicts. When the computer detects a conflict it displays the message, "MULTI-

TASKING ERROR, RETURN TO CONTINUE". Here is how these levels work in each application.

GENERAL LEDGER is controlled by level 11. Menu selections restricted to one operator are Clear G/L YTD Balances, Trial Balance/Detail Report, Quarterly Trial Balance and Income Statement Format Report. (Theoretically hundreds of operators can print an Income Statement at the same time. We have no idea why.) One other multi-task control is set up for Journal Entry, which may not be conducted if another operator is into any of the other four controlled selections. Journal Entry, too, is restricted to one operator.

It is interesting to note that level 11 is not used in any other BAS application. For example the Month End Update in Accounts Payable has no controls at all, even though the monthly payment and payable amounts are being written to the General Ledger Transaction File. So be sure that no one is fooling around in the General Ledger while you are updating a month in another application.

ACCOUNTS PAYABLE uses multi-task levels 08, 09 and 15. Level 08 allows a maximum of nine operators at one time into any combination of Vendor Invoice Entry, Manual Payment and Reverse Selected Payments. None of these may be conducted when someone else is into Payable Voucher Register, Check Register, Payable Distribution Report and/or Payment Distribution Report. Furthermore, these last four selections, each of which is restricted to a single operator, cannot be run in conflict with each other.

Level 09 puts the nine operator restriction on combinations of Payment Selection, Manual Payment, Reverse Selected Payments, and Non-Invoice Payments/Reversals. And none of these may be active when another operator is conducting either Adjustment Entry & Journal, Payment Selection Register, Vendor Check Printing, Check Register, Monthly Check Register, Payable Distribution Report or Payment Distribution Report. Again these last applications must be run by one operator, one at a time.

Level 15 is used to control the printing and/or registering of vendor checks. As long as none of the previously mentioned conflicts for level 09 exist, Vendor Check Printing may be conducted, but the Check Register cannot be run before the checks are printed. You may, however, print your checks, enter more payment selections or manual payments and print more checks before running the Check Register.

By the way, the multi-task indicator for Clear Vendor YTD Totals is turned on (with "X"), but there are no levels defined. This is obviously a bug in the system. If you want to fix it on your machine, go into selector maintenance (799 from any menu), select 2 to change, index is 24, <F4> to end at the Field to Change question, <F2> for Hard Copy, and * (asterisk) 2 at the index field. Then change field 16 to read "08R09R15R <SPACE> 08R09R15R". Exit with <F4> at the change question, <F2> for Hard Copy, <CR> at index and <F4> at the option line.

In **ACCOUNTS RECEIVABLE** and **ORDER PROCESSING** we have the only examples of multi-task controls manipulating two applications at once (with the exception of some strange controls in IDOL which we will discuss at the end of the article). The multi-task levels used are 01, 02, 03, 04, 05, 12 and 16.

Level 01 authorizes a maximum of nine users simultaneously in AR Invoice Entry, Direct Sales Entry and Order Invoicing. None of these may be active if another operator is doing Clear Customer MTD/YTD Sales, Clear Salesman Commissions, Invoice/Memo Printing, Sales Journal, Customer Statement Printing, Sales Commission Report, Direct Sales Report or Clear Inventory MTD/YTD Fields. These latter applications may not be used in conflict with each other, and only one operator can use any one of them at a time for this level as well as the levels described below. Note that some of these operations, such as Clear Customer MTD/YTD Sales, appear in both Accounts Receivable and Order Processing. The same multi-task restrictions are defined for both.

The nine operator restrictions in level 02 are for Order Entry and Back Order Release. These must be cleared of operators if someone else wishes to conduct Clear Customer MTD/YTD Sales, Order Status Report, Order Register, Order Printing or Clear Inventory MTD/YTD Fields.

For level 03 no more than nine operators at one time may be in Debit/Credit Memo Entry in either Accounts Receivable or Order Processing. No one may be entering memos when someone else is doing Clear Customer MTD/YTD Sales, Sales Journal, Customer Statement Printing, Sales Commission Report or Clear Inventory MTD/YTD Fields.

Level 04 puts the nine user limit on AR Adjustments Entry, which must be cleared of operators when someone else goes into Clear Customer MTD/YTD Sales, Adjustments Journal or Customer Statement Printing.

The last nine-operator restriction is set in level 05. This applies to Cash Receipts Entry and Miscellaneous Receipts Entry. No one may be in either of these selections if another operator wishes to conduct Clear Customer MTD/YTD Sales, Cash Receipts Journal, Aged Trial Balance, Customer Statement Printing or Delinquent Report.

Level 12 is used for Back Orders in Order Processing. There are four Back Order Reports: all, by date, by item and by date and item. These should allow only one operator at a time to run one report at a time, but we have another bug. For Print Back Orders by Item the multi-tasking is enabled, but no levels are defined. Field 16, "MULTI TASK LEVS" should be "12R <SPACE> 12R", in case you wish to fix that one too. Also on the main Order Processing Selector is the Back Order Release selection. No one may be running any of the Back Order reports when someone else is releasing back orders.

Finally we have level 16 which dictates the order of menu

selections. You must first print all invoices from both Accounts Receivable and Order Processing before you may print Customer Statements, run an Aged Trial Balance or print a Delinquent Report.

FIXED ASSETS has no multi-task restrictions. It doesn't matter if twenty different people transfer assets, calculate and update at the same time, although activity of this sort does seem a little paranoid.

PURCHASE ORDERS processing is controlled with levels 06, 07 and 13. For level 06 the nine operator limit applies to Purchase Order Entry, which must be cleared of operators during the single operation of Purchase Order Register or Purchase Order Printing. Level 07 allows nine operators into Receiving Confirmation, but requires that all are out when one operator runs the Receiving Report. And level 13 lets nine into Stock Receipts Entry and one non-conflicting operator into Stock Receipts Journal.

PAYROLL uses the last of our multi-task levels, number 10. The nine operator restriction is for Time Sheet Entry and/or Manual or Reverse Check Entry. These two applications must be clear of operators when another person conducts Payroll Earnings Report, Gross to Net Processing, Payroll Register, Check Printing, Payroll Check Register, Year-End Processing, Print Quarterly 941-A Report or Print Yearly W-2 Forms.

Surprisingly the order of menu selections in Payroll is not controlled in the usual manner with multi-tasking levels. Instead various messages are written into the Payroll Initialization File under the Company Code "ZZ" as you go through the payroll cycle. Messages such as "PAYROLL REGISTER NOT RUN" and "PAYROLL CHECKS NOT PRINTED" are stored at various times and cleared after the final check register has been run. If you wish to see how these messages change, look into the Payroll Initialization File (CPINI, File Number 156) with the 797 utility during a payroll cycle. Use the inquiry function (number 4) and look at company ZZ. It's really quite interesting.

Now, about those strange IDOL multi-task controls. If you have IDOL on your system you may notice that two IDOL utilities have multi-task levels defined. Both concern the manipulation of documentation text, which is brought to the screen at various times when the <HELP> key is pressed. For some reason you may not go into the User Function Doc Test Editor (Number 1 on IDOL Selector 3) unless all of your Accounts Payable Checks have been printed. Also you may not Copy Documentation Modules (Number 3, same selector) if anyone else is entering invoices on another terminal. This makes absolutely no sense at all. You may as well be restricted from entering Business Accounting off of the Global Menu while someone else is playing Hangman. We firmly believe you will do no harm if you choose to disable these two multi-task checks.❑

System Administration: Part 29

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

This month we are continuing with our discussion of installing Interactive 386/ix on the Fortune 5000. Next month we will talk about how to install SCO Xenix and DOS.

INSTALLING INTERACTIVE 386/ix (continued)

12. Now that we have completed the loading of the operating system, it is a good idea to "fine tune" the system parameters. In particular, the Interactive kernel is configured for 2MB of memory. Since we have 4MB in this system, we need to "rebuild" the kernel to allow for optimum performance of all of the memory we have. Remember the "kernel" is the heart of the Unix operating system and is resident in memory when the system is booted. There is a special program called "kconfig" that is used for adding/removing drivers; adding/removing facilities; loading default parameters for memory size; and adding tunable parameters. To run the "kconfig" command, we enter:

```
# /etc/kconfig
```

When this command is run, we are asked to enter the configuration directory - by depressing the <RETURN> key, we use the default "/etc/atconf" directory. We are then asked to enter the system file name or can depress <RETURN> to use the default "system.std". After selecting the defaults, we see the following menu:

```
MAIN MENU

1) CONFIGURE KERNEL
2) BUILD A KERNEL
3) INSTALL A KERNEL

Enter Choice [1-3]:
```

Since we want to configure the kernel for 4MB of memory, we select option 1 and get another menu:

```
CONFIGURATION MENU

1) ADD DRIVER
2) REMOVE DRIVER
3) ADD FACILITY
4) REMOVE FACILITY
5) ADD DEFAULT PARAMETERS FOR MEMORY SIZE
6) ADD TUNABLE PARAMETERS

Enter Choice [1-6,m,q]:
```

From here, we select option 5 to configure the kernel for memory. Once selected, we are given the options:

```
CHOOSE THE CLOSEST MEMORY SIZE

1)  2MB
2)  4MB
3)  8MB
4) 16MB

Enter Choice [1-4,m,q]:
```

Option 2 is correct for our system. Remember that you will need to do this procedure each time you add more memory to your system. After selecting option 2, we are returned to the CONFIGURATION MENU where we enter "m" to return to the previous menu which is the MAIN MENU. At this point we are asked whether we want to save the modified system file as "system.std". We answer "y" and are returned to the MAIN MENU.

Now that we have configured the kernel, we need to build a kernel by selecting option 2 from the MAIN MENU. At this point, the system automatically builds the kernel for us by running the "/etc/mkunix" command. We are then asked if we want to install "unix.std.1". By answering "y", the new kernel will be installed and "shutdown" will be executed automatically so the new kernel will be running.

13. It would be nice at this point to backup what we have installed so far. For those of you that added the tape streamer to your Fortune 32:16, you had to install the Tape Streamer software. There is no diskette to install with Interactive. However, we do have to tell the system that it is there so we can use it. In the last issue of "/u/fortune", we discussed the concepts of "interrupts" and "addresses". Basically, many of the devices, such as the tape unit, have jumpers and/or switches on the boards that set these parameters. Interactive 386/ix expects the tape unit to use interrupt "5" and

address "0300". Therefore, we opened up the Fortune 5000 and set the jumpers on the board for the Wangtek 150MB tape unit to these settings. This is an easy procedure and you can refer to the Wangtek documentation to find where the jumpers and switches are located.

Now that the tape controller board has been set, we need to tell the system that we want to use the tape unit. Once again, the kernel will be configured to recognize the tape unit. So we run the "/etc/kconfig" command again and select option 1 (CONFIGURE KERNEL) from the MAIN MENU. Now we select option 1 (ADD DRIVER) and we get the following menu:

```
CHOOSE A DRIVER TO ADD TO THE CURRENT CONFIGURATION

1) Bell Technologies Hub Board
2) Microsoft Bus Mouse Driver
3) Wangtek Cartridge Tape Driver
4) Bell Tech ICC Board Driver

Enter Choice [1-4,m,q]:
```

We select option 3 for the Wangtek driver. Once the driver has been selected, we select option "m" to return to the CONFIGURATION MENU. Here we select option "m" again to return to the MAIN MENU. From here we go through the same procedure that we used to configure the memory.

Once the system has shutdown and rebooted, we can backup what we have installed so far (including the kernel changes we made). The device name for the tape unit is "/dev/rmt0". You have the option here of using standard Unix commands (such as "tar" and "cpio") to do your backup from the Unix prompt. If you feel uncomfortable doing this, you can use the "sysadm" menu system to do the backup. This menu system functions the same as the "System Utilities" and "System Administration" selections on the For:Pro Global Menu.

From the SYSTEM ADMINISTRATION menu (refer back to the beginning of this article), select 2 (filemgmt). You will see the following menu:

```
                    FILE MANAGEMENT

1 backup    backup files from built-in disk to removable
            media
2 bupsched  backup reminder scheduling menu
3 diskuse   display how much of the built-in disks are
            being used
4 fileage   list files older than a particular date
5 filesize  list the largest file in a particular
            directory
6 restore   restore files from ''backup'' & ''store''
            media to built-in disk
7 store     store files and directories of files onto
            removable media

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, ^ to GO BACK, q to QUIT:
```

From here, we select option 1 for backup. The following prompts and answers (in bold type) will give you an idea of how to do a complete system backup:

```
Available file systems:
/  ALL
Enter file system(s) you want to backup [?,q]: /
Select complete or incremental backup [c, i, ?, q]: c
Print each file name as it is copied? [y, n, ?, q]: y
Select which drive to use:
    1 diskette        2 tape
Enter a number, a name, the initial part of a name, or
? for HELP,  q to QUIT: 2

Before inserting the first medium into the tape drive,
mark it:

        Complete Backup of /,
        Set. 08/05/89, 09:55:14 PM
             part 1

Insert the medium in the tape drive.  Press <RETURN> when
ready
```

When the process is complete, our entire system, which has only one partition on it, will be backed up. For your information, the Unix backup command that is used in this procedure is "cpio". We will talk more about this command in a subsequent issue. We will also discuss the "tar" command and how it differs from the For:Pro version.

14. Our next task is to set the printers on the system. Remember that on the Fortune 5000, there is one parallel port for a parallel printer and at least two serial ports. If you purchased the "HUB" card, you will have additional ports that serial printers can be connected to.

Before we can configure a printer, we must stop the lp scheduler. This is done by issuing the following command:

```
# /usr/lib/lpshut
```

You will get one of two messages - either that the scheduler has been stopped or that the scheduler is not running. In either case, we can proceed with printer configuration.

Once again, we can use the "sysadm" login to configure printers. For those of you that want to execute "sysadm" from the Unix prompt, the command is appropriately "sysadm" (the "setup" program can also be executed from the Unix prompt by entering the "setup" command).

From the "SYSTEM ADMINISTRATION" menu (see last issue for the selections on this menu) select option 4 (packagemgmt) and the following menu is displayed:

```
                  PACKAGE MANAGEMENT

1) lpmgmt      add line printer
2) tcpipmgmt   extended networking utilities menu
3) uucpmgmt    basic networking utilities menu

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, ^ to GO BACK, q to QUIT:
```

Selection 1 is used to ad a line printer. Once this option is selected, you will see a menu of the available printer types. These include AT&T 5310/5320, LQP-40, DQP-10, HP 2531A, Printronix, Diablo 1640, DASI 450, an 80 column parallel printer, and a "dumb" line printer. You will notice that there

are not a lot of printer types. For example, there is no entry for the HP LaserJet. In most cases, the "dumb" selection is sufficient. In many cases, the application software that you install will have printer definitions for the more common printers. For our installation, we chose "dumb" (hope this does not imply anything!). We then got the prompt:

```
The printer name is dumb_1.
If dumb_1 is OK, hit RETURN or
if you would prefer another name, enter the name:
```

Since our printer is a Fujitsu, we preferred to call the printer "fujitsu" so we entered this name. We were then given a list of serial and parallel device names to choose from to tell the system which port the printer was attached. Note the following standard device names:

/dev/tty00 - 1st serial port (comm1)
/dev/tty01 - 2nd serial port (comm1)
/dev/lp0 - parallel port
/dev/tty4a-f - HUB serial ports without modems
/dev/tty4A-F - HUB serial ports with modem

Remember that the "HUB" is the 6-port board that can be added to the system for additional serial ports.

Since our system does not have the 6-port board, we decided to connect the printer to the 2nd serial port (`/dev/tty01`). Be sure the port you are going to use for a printer is disabled for logins (see item 15 below). After entering this at the prompt, we received the following:

```
destination ''fujitsu'' now accepting requests
printer ''fujitsu'' now enabled
```

From here we returned to the list of printer types. The last "printer type" is "done" which when selected means that you have no more printers to be configured. After entering "done", we the following was displayed:

```
Select the name of the printer to be the default
destination from the following:
fujitsu
(or type <return> for none)
```

Since we only have one printer, we entered "futitsu". We then received the message:

```
Current lp system status:
scheduler is running
system default destination: fujitsu
device for fujitsu: /dev/tty01
fujitsu accepting requests since Aug 5 23:27
printer fujitsu is idle. enabled since Aug 5 23:27
```

This output comes from the "lpstat" command which can be entered at the Unix prompt to find out the status of the scheduler and printers whenever you want. The full command would be:

```
# lpstat -t
```

The output would be the same as above for your defined printers. Notice also that the scheduler was automatically started for us by "sysadm". Most versions of Unix these days (including SCO Xenix) use the same line printer configuration. Therefore, we will talk about this in detail in a subsequent article.

We then connected our printer and tested out the printer by using the "lp" command:

```
# lp /etc/profile
request id is fujitsu-1 (1 file)
```

You can use any file as a test to see if the printer is connected and has been defined correctly. If you want to connect a parallel printer, use the same procedure as above except use the device name "/dev/lp1" for the standard parallel port. Notice also that there is an "add" line printer option but there is no "delete" printer option.

15. One more job is left to be done as part of our initial installation procedure - setting up a terminal. Since we put the printer on the second serial port, we are going to put a terminal on the first serial port which is "/dev/tty00".

Login in as "sysadm" or execute "sysadm" and select option 7 (ttymgmt). The following menu is displayed:

```
                    TTY MANAGEMENT

1 lineset      show tty line settings and hunt sequences
2 mklineset    create new tty line settings and
                  hunt sequences
3 modtty       show and optionally modify
                  characteristics of tty lines
4 sunterm      change number of active SunRiver Stations
5 virtterm     change number of virtual terminals

Enter a number, a name, the initial part of a name, or
? or <number>? for HELP, ^ to GO BACK, q to QUIT:
```

We selected option 3 to take a look at how "/dev/tty00" is configured and got a screen which showed all of the tty device names and asked us to select one - we chose "tty00" and our conversation went something like this:

```
tty00: current characteristics:
       State           off
       Hangup Delay    off
       Line Setting    9600
       Description

Available states:
        off     on
Select a state (default: off) [?, q]: on

Enter a hangup delay, in seconds, or 'off'
(default: off): [?, q]: off
```

The available baud rates were displayed and we stayed with

the 9600 baud setting. We were asked for a description and we entered "Serial 1". The new characteristics were displayed and were asked if we wanted to install them. We answered "y" and the "login:" prompt appeared on the terminal.

16. We have finished with our system for this session and are ready to shutdown. This may be done by "root" by entering the command "shutdown" or "powerdown". You must be in the "/" directory to execute "shutdown". Unlike "shutdown", the "powerdown" command asks if you want to do an "express" shutdown of the system and you do not have to be in the root directory.

Before we leave you for this time, we want to pass on two tips that might be helpful. First of all, there is no "more" command with Interactive 386/ix. Instead, the "pg" command serves to slow down output a screen at a time. Because we are so used to using "more", we "linked" these two commands using:

```
# ln /usr/bin/pg  /usr/bin/more
```

Since "more" is linked to "pg", we can use it in the manner we are accustomed to.

Secondly, on For:Pro, if you execute the "ls" command, the columnar output is automatically produced for us. With Interactive 386/ix, the "ls" command produces a listing of the files down the left column of your screen unless you use the "-C" option. You will find that the equivalent command in SCO Xenix is "lc" (list columnar). We decided to create our own version of "lc". Using the "vi" editor, we created a file in "/bin" called "lc" with the following in it:

```
#program:  lc

ls -C $@
```

Don't forget to give the command execute permission (`chmod +x lc`). Now whenever we run the "lc" command, we get a columnar listing.

In both Interactive 386/ix and SCO Xenix you have the ability to have "multiscreens" on one terminal. Just to wet your appetites on future topics we will be discussing, with multiscreens, we can have several login sessions on one terminal and go back and forth between screens by depressing a special keyboard sequence. For example, we could be doing accounting on one screen and word processing on another. If we are running an accounting process that will take awhile, we can change screens to the word processing screen. These are standard functions in the operating system that do not require additional software.

We have now completed our initial installation of 386/ix. Obviously there is much more we need to discuss. To give equal time to those of you that are using **SCO Xenix**, however, we will go through the same installation process including all of the items we have discussed about 386/ix. After that, we can merge the two discussions and talk about both at the same time.❑

News From and About SCI/Fortune

J.U.M.P. Reads Even Better The Second Time Around

Read any good magazines lately? No. Well then you haven't read the "1989 Annual Report Card Review" issue of VAR Business. In this issue is our company's second ad for our JUMP services. The first ad, as you may remember, was meant as a visual piece which introduced end users and VARs to the benefits of JUMP.

Having introduced SCI/Fortune and JUMP, our company's primary goal for the second ad was to provide potential VARs with an overall understanding of our JUMP services. We believe that this goal has been achieved, along with the benefits to SCI/Fortune and our VARs of heightened company exposure and name recognition.

New Release of Interactive 386/ix for Fortune 5000 Computers

SCI/Fortune announced the availability of Interactive Systems Corporations's 386/ix, **Release 2.0.2**. This release is based on AT&T's System V/386, Release 3.2, which was originally developed for AT&T by Microsoft and Interactive. Subsequently, Interactive upgraded its own 386/ix Operating System to this new Release 3.2 standard, which incorporates standard XENIX utilities and the ability to run XENIX 286 and XENIX 386 applications, as well as Interactive's new proprietary performance and system administration enhancements.

Interactive's 386/ix provides the three most widely used environments for execution of application software, available in a single package from a single vendor. 386/ix provides a high-performance, open systems environment in which Unix 386, Dos, and XENIX 286 and 386 applications can run concurrently on the same system. Once Interactive 386/ix, release 2.0.2 is installed, dealers can recommend applications based on features, functionality and quality rather than on compatibility with the users current system software. An application need only be purchased once, not once for each separate version of your DOS, Unix and XENIX operating systems. In addition, end-users do not have to go through time-consuming and costly retraining to learn new application software. In many cases, the powerful 386/ix engine will actually run applications faster than their original operating system environments.

386/ix Release 2.0.2 Highlights at a Glance

AT&T's most recent release (3.2) of Unix System V/386
XENIX Binary and Source Code Compatibility
XENIX File System Facilities
Enhanced Security Features
Improved Internalization Support
Kernel Performance Improvements
High Performance Disk Driver
Fast File System
Menu-Driven System Administration
Simplified Installation of Applications
Upgraded Kernel Configuration Support
Enhanced File System Layout
"stty" for International Console and Terminal Mapping

(***Editor's Note**: Jim Smith of SCI/Fortune will be sending us an update of 386/ix Release 2.0.2. We are looking forward to installing it on the machine that SCI/Fortune has loaned us so that we can feel its improvements.)*

Fortune:Word Available Under Interactive 2.0.2

SCI/Fortune announced the availability of Fortune:Word release 3.2.1, our powerful and versatile multi-user word processing package, for the Fortune 5386 running Interactive 386/ix, Release 2.0.2. Originally developed on the Fortune 32:16, Fortune:Word remains one of the most popular, powerful and widely used word processing packages based on Unix operating systems on the market today. Fortune:Word is a stable, proven word processing application which sets the standard in the Unix world.

CPU Sales Promotion fueled by Free Copy of Fortune:Word

In SCI/Fortune's company's continual efforts to assist their VARs with system sales, SCI/Fortune is offering a FREE copy of Fortune:Word with every new system sale till the end of October, 1989. This Fortune:Word special was announced in the August issue of /u/fortune news. See Page 2 of this issue for more details.

Southwind's Tactician, Ezgraf, and Grafsman Distributed for the Fortune 5386

SCI/Fortune is pleased to announce the distribution of South-

Wind's Tactician, Ezgraf, and Grafsman software for the Fortune 5386. These software applications from SouthWind have already proven popular on the Fortune Formula and 32:16 systems.

SouthWind's SCO XENIX based products were designed for the XENIX 2.3 operating system, but will also run on Interactive's new 386/ix operating system, version 2.0.2.

This distribution of SouthWind's software applications adds to the steadily increasing list of vertical applications available on the Fortune 5386. Bundling SouthWind's applications with SCI/Fortune's office automation products can create powerful solutions for office automation needs.

SouthWind's software products are perfect complements to SCI/Fortune's proven office automation product line. Tactician, a spreadsheet product, provides a complete set of built-in functions as well as a macro command language, allowing users to customize spreadsheets. Ezgraf can quickly produce presentation quality graphs with little training. And Grafsman was designed for the more sophisticated user, taking data from Tactician or other spreadsheet packages and making high quality presentation graphs and charts.

Help From Technical Support

The following questions and answers were contributed by the Technical Support Staff at SCI/Fortune.

Question: I recently acquired Bell's ACE Multi-port Controller for my Fortune 5386. However, it appears that the system does not recognize the ACE board. How do I properly configure my system so that it recognizes the controller?

Answer: Bell's ACE (Asynchronous Communications Engine) card provides eight additional serial ports for the Fortune 5386. Up to four ACE cards may be installed in the system providing the system contains less than 16 MB of memory. Only one ACE card can be present in a system containing 16 MB of RAM.

If your system contains 16 MB of RAM, a situation occurs wherein the ACE card and system memory develop a conflict within memory allocation. The ACE board requires 64 KB of the 16 MB AT memory space. This 64 KB can be selected to be anywhere in the AT memory space on an even 64 KB boundary. The card's base address must be set to 0E0000 as this is the location of the only available 64 KB of RAM that is unused by the system. These changes need to be adhered to in both the ACE card driver and hardware jumpering on the board. The leftmost dip switch (SW1) is used to select the 64 KB boundary for the ACE memory.

Question: While poking around my Fortune 5386, I came across a utility called **dossette**. What is dossette, and when would it be useful?

Answer: **Dossette** is the DOS File Exchange Utility, which allows DOS-format file systems to be manipulated from within the Unix environment. **Dossette** also provides the ability to move files back and forth between both the DOS and Unix file systems. This unique utility can be used on fixed disk partitions as well as DOS diskettes. **Dossette** also provides both batch and interactive modes.

Question: If **/etc/termcap** is no longer used on System V Release 3 how do I edit and install a terminal description that will allow my screen oriented programs to work properly?

Answer: AT&T has included **/etc/termcap** on the current release for historical reasons only. It is no longer used to install terminals, it can however, be used as a reference database.

Current releases of Unix support **/usr/lib/terminfo** for low level, terminal independent, screen manipulation. Entries in **/usr/lib/terminfo** database are binary files, they can not be edited directly. The command **/usr/bin/infocmp** is used to create a source file. Then you can use the editors **vi** or **ed** to edit the source file. Next the compiler **/usr/bin/tic** is used to recompile the edited source file, placing the compiled file in the correct terminfo directory. Running the tic command with the "-v" (verbose) option will display any problems or errors the compiler is having.

If you want to convert an existing TERMCAP entry into the TERMINFO compiled format, the command **/usr/bin/captoinfo** will take as an argument a file considered to have TERMCAP descriptions and convert it into the TERMINFO binary format.

Installing the terminal entry is much the same as for previous releases of Unix. The variable TERM can be set to the entry of choice, and exported into the users environment. The variable TERMINFO can also be set to a directory (full path name) and exported.

If, for example, TERM=fos, and the variable TERMINFO is set to a directory, then that directory is searched for the file "fos." If the variable TERMINFO is not set, then /usr/lib/terminfo/f ("f" matching the first letter of the variable TERM) will be searched for a match.

The following is from a Technical Bulletin regarding the Fortune Basic Workstation.

Problem: No Keyboard Response.

Resolution: It has been determined that connecting a keyboard while the Fortune Basic Workstation terminal is active (powered up) may result in a start bit, resulting in no response from the keyboard. If there is no keyboard response, the terminal should be powered off and on. (Ideally, the keyboard should be connected prior to power up and remain connected until power down.)❑

Software For The Fortune 32:16 And Formula

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

W-2 LINK ($395.00) - designed for companies with over 250 employess who must report W-2 payroll information to the Social Security Administration (IRS) via magnetic tape or diskette. Automatically takes information in the Business Accounting System (BAS) Payroll module and puts it onto diskette in the format required by the IRS. Also available for PAC software. also.

1099 LINK ($295.00) - this product produces Form 1099's required for submission to the IRS and is an extension to the standard BAS Payroll module.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

WESTERN LINK ($195.00) - provides instruction on how to use your Fortune for sending/receiving telex messages using Western Union's Easylink. Can replace your telex! Fortune ITE or Handshake software required.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

FINANCIAL LINK ($295.00) - passes BAS Income Statement and Balance sheet to Multiplan or UltraCalc. Stores and instantly reprints these statements for current/previous period without sorting.

FORTUNE SOFTWARE AND HARDWARE SUPPORT SERVICES

UNI-KOMP 5715 N.W. Central Dr., Suite F112, Houston, Tx 77092
Phone: (713)895-9900 Fax: (713)895-9914

Is All of Michigan Using Fortunes?

Well, not directly. But indirectly SCI/Fortune equipment is affecting every resident of Michigan through the Michigan Prosecuting Attorneys office and related personnel. The following letter was written to Mariann Boesch who is the SCI/Fortune District Sales Manager for the U.S. Central Region. We thank SCI/Fortune for allowing us to reprint this letter.

Dear Ms. Boesch:

In 1983 the Michigan Prosecuting Attorneys Coordinating Council/Prosecuting Attorneys Association of Michigan (PACC/PAAM) sent out 27 Request for Proposals for office automation equipment for Michigan prosecutors. Seventeen vendors responded. PACC/PAAM Technical Services recommended 7 of the 17 vendors as meeting the requirements. Several PA's, prosecutor support staff, county data processing directors, and others met for 2 days to observe the 7 vendors' equipment and applications. Four of the 7 vendors were selected for final evaluation, setting up their equipment at PACC/PAAM offices for 2 days. During the 2 days, prosecutors, PA support staff, and others brought in their work product and did "hands-on" utilization of the equipment. The decision was unanimous for Fortune equipment, and Fortune:Word processing best met the needs of Michigan prosecutors. PACC/PAAM Technical Services evaluated various databases and selected Informix as the database to develop a case tracking system for Michigan prosecutors.

A unique approach to the office automation at the time was to merge the database output with word processing. Informix and Fortune:Word worked together for this application beautifully. The logic behind this marriage of database and word processing was to correct several problems that occurred with the more conventional use of word processing to generate documents, then enter the data into the database. The problems were:

1. The database did not benefit the support staff; so, there was no incentive to enter the data. The support staff in prosecutors' offices is very busy generating legal documents, filing, etc., and the extra duty of data entry was given a low priority. This low priority was easily justified -- do you want me to do t his brief or enter cases? Therefore, there was always a large backlog of cases not up-to-date or even entered.

2. The cases that are entered are of questionable integrity. If you can't even get all of your cases entered, who is going to proof them?

3. The reports and statistics were unreliable because no all of the cases were up-to-date or even entered, and the cases that were may have keying errors.

To correct these problems, the PACC/PAAM case tracking system was designed to do the following:

1. Generate legal documents from the database requiring all data entered to be completed prior to the initial document generation. The documents were examined by support staff and attorneys. Therefore, if there were any errors in the document, then the database must be corrected.

2. All output from the case tracking system goes into Fortune:Word processing. This allows the documents to be tailored. Reports and legal documents may require some modification to be acceptable. By having the case tracking output picked up by Fortune:Word meant the entire output did not have to be re-keyed.

3. The reports and statistics were much more accurate. People looked at the documents to ensure that they were correct, thus ensuring that the information in the database was accurate, and the database had to be kept up-to-date in order to generate documents.

The initial system tracked and generated documents for the district and circuit courts, and has now been expanded to include the Court of Appeals, the Michigan Supreme Court, and juvenile cases. Legal documents produced include the complaint and warrant, victims rights letters and tracking, reports, and subpoenas. Orders, motions, and other legal documents are produced through word processing. Fourteen different schedules can be generated ranging from a master schedule of all attorneys and events to individual schedules by court or event. There are 40 different statistical and management reports. These reports can be generated for any time period - daily, weekly, monthly, quarterly, etc. Currently under development on the Fortune System is a Child Support Enforcement System.

As with any computer system, the data must be entered prior to the generation of any documents or reports, thus making the system "front heavy". However, the benefits of document preparation in receiving the complaint and warrant, victim rights notices, subpoenas, office statistics, and other reports make the net result a tremendous gain for the office.

Fortune equipment is now in use in 35 Michigan prosecutors' offices, and with the child support enforcement application, the number of offices will double in the next few years. The SCI/Fortune system and Fortune:Word have proven to be very productive and dependable. Fortune's constant enhancements and new products allow Michigan prosecutors to keep up with the technology.

Sincerely,

John P. Goergen
Director of Technical Services❑

Fxfer

What Is It and What Does It Do?

We've started to ship **fxfer**! As you may recall from our last issue, we created **fxfer** to make it possible to transfer files between Fortune's and PC's using floppy disks. The disks can be created on either the PC or the Fortune, and either machine will read them. This can save considerable time compared to transferring data via a direct connect wire or modem. There has been some confusion about what **fxfer** is and what it does, so we'll try to clarify the issues here.

fxfer copies files back and forth between Fortune 32:16/SX computers (Formulas soon to come) and PC/AT compatible comptuers with 1.2 meg floppy drives. It will copy either ASCII or binary data, but it will not convert data from one kind of system to another. It does not work on the Fortune 5000 running under UNIX or VPIX. However, it would work on the 5000 series of computers if running MS-DOS.

For example, Multiplan spreadsheets could be copied, but only in the Symbolic format. **Fortune:Word** files can be copied, but the only useful way to do that is in the ASCII format, and most formatting will be lost (we are working on ways to allow you to convert files with formatting). We have a client who needed to dump a mailing list out of their BASIC software onto PC disks, and it works well for that kind of transfer. It will not automatically take your accounting data from BASIC and allow you to import it into an accounting or database program on the PC, which would require some custom programming.

In short, **fxfer** is very good at copying files between PC's and Fortune's and back again. It is fast and efficient, and will copy whole directory trees. It does convert DOS text files to UNIX text files and back again, but it does not do any other conversion of information from one system to another.

Here are some specific examples. In order to use **fxfer**, you format your floppies on the Fortune. (**Note**: it is crucial to have a reliably formatted disk when using **fxfer**. We include a shellscript called **ff** with **fxfer** which will make sure the floppy is perfect). Once they are formatted, you will be able to use them on either machine with **fxfer**.

Suppose you have an AT computer at home and a Fortune at the office. It would be nice if you could work on a report over the weekend and bring it to work on Monday. Sunday night, you take one of your Fortune formatted disks and you insert it into your AT and give the command `fxfer cvYF 0 report1`. (Assuming your document is called report1.) The floppy light flickers and in a moment you have your DOS prompt back. The next morning, you insert the floppy into your Fortune and type `fxfer xv`. The Fortune floppy light flickers and you see a message on your screen with the date and size of report1. That's it -- report1 is now on your Fortune system.

What you have done is copied an ASCII file from the AT to the Fortune. It would be just as easy to go the other way also. Please note that this was an ASCII file, which means it won't have formatting commands embedded in it. In order to be useful to you, you'll need to be able to read it into **Fortune:Word**, or your favorite editor, and you'll have to be able to save it in an ASCII form on you DOS word processor. This can be done fairly easily with most of the major packages. Programs like XyWrite can be customized to actually convert from **Fortune:Word** without too much trouble. Any version of **Fortune:Word** will automatically read in an ASCII file, although you may not get hard returns where you want them. **Fortune:Word** 3.1 has several ASCII import methods, including one that will put a hard return in for every blank line. To use that method from the editing screen you hit COMMAND SHIFT INSERT followed by the name of the file when prompted.

Another example mentioned above was someone who wanted to convert their mailing list stored in BASIC to an ASCII file on PC disks to send to a mailing house. In this case, they had to write a short program to dump the data out to an ASCII file. This program was written in BASIC. Then they used **fxfer** with the **M** flag which creates a multi-volume backup. That was necessary because the file they were backing up was several megabytes and hence would need more than one floppy disk. On their Fortune they typed `fxfer cvM maillist` and that started their backup to the floppies. On the PC they typed `fxfer xvYMF 0` and fed in the same floppies. Since the mailing house didn't have a copy of **fxfer**, they copied the final list off of the PC hard disk onto floppies using the standard PC backup command.

fxfer is based on the UNIX **tar** utility. Because of that, it can also be used with the **tar** program in most cases. (tar doesn't support multi-volume, and **fxfer** doesn't support the append function.) **fxfer** can also be used to create a tarball file of a whole directory. This takes an entire directory and puts all of the files along with their modification times, owners, etc. into a single large file. This file can be compressed and archived, or sent via modem to another Fortune. This is useful when you want to preserve an exact copy of a directory with the modification times, etc. in place.

fxfer can also be used instead of **tar** of far with a tape streamer. There aren't any great advantages to using **fxfer**, unless you don't happen to have **tar** and need to read somebody else's tar tape. (**tar** is normally distributed with Fortune's Development Utilities.) We don't think the multi-volume capabilities of **fxfer** will work well with the tape drive.

On the other hand, we want to make it very clear that **fxfer** is basically an implementation of the widely used Unix **tar** command. Along with **cpio**, **tar** is the main command that Unix systems use to write to floppies and tapes. Thus, **tar** is a useful command to have in your arsenal. To reiterate, if you don't have Fortune's Development Utilities package then you don't have **tar**. If you would like a copy of **fxfer** just for your Fortune, we do make that available on one of our standard software floppies for the princely sum of $15.

As we've explained above, **fxfer** has a few more options than the standard **tar** which makes it far more useful. We described the **-M** flag, for instance, which allows you to make multi-volume backups. The standard **tar** program doesn't allow this. Another flag that you may find very useful is the **-k** flag which prevents overwriting. That is, when you extract a file from a **tar** file, it will ordinarily overwrite a file that is on your system with the same name. Now, in most cases this is what you want to happen. However, there will be other times when you will not want this to happen and that is when you will need the **-k** flag. Here is an example:

```
fxfer xvf tarball letter
```

will extract the file called letter from the **fxfer** file called tarball and make a copy of the file in your current directory. On the other hand,

```
fxfer xvkf tarball letter
```

will only make a copy if the file letter doesn't already exist!

Another flag that is sometimes useful is the **-T** flag. Generally, if I want to backup all the files in a directory and all the files in any subdirectories, I would type a command like the following:

```
fxfer cvf tarball *
```

The * tells **fxfer** to backup all the files in the current directory. You can sometimes have a problem when the number of files in the directory is large. This is because there is a limit in the Unix shell as to how many files you can have on one command line. One way around this dilemma is to create a list in a file that contains all the names that you want backed up. For example, the following simple command, on the Fortune, would do:

```
ls -1 * > dirlist
```

This creates a file called dirlist which contains all the files, including subdirectory names, in the current directory. Once you have a list like this you can use **fxfer** in this manner:

```
fxfer -cvf tarball -T dirlist
```

A Note on Path Names

fxfer will restore files relative to the current working directory. Let's suppose you want to copy all of the files in the \wp\data directory on your PC so that you can transfer these files to your fortune. If you type:

```
fxfer cvF 0 /wp/data
```

all of the files in \wp\data will be copied to the floppy, including any files in any subdirectories under \wp\data. Because the initial / (before wp) was included, when the files are restored, they will be forced to go into exactly the same directory (i.e., /wp/data).

The alternative is to first use the cd command to change to the \wp directory before using **fxfer**. Then type:

```
fxfer cvF 0 data
```

In this case, we haven't used any slashes at all. This command backs up all of the files in the data directory with a relative pathname, e.g., data/letter1. When we restore these files, they will all be put in a data subdirectory relative to the directory we are working in.

Why all the fuss, you may ask? The issue of pathnames might become important for several reasons. The first might be in the case where you have several hard disks on your Fortune computer. You might have one mounted as / and the other as /u. In our example, if you use /wp/data to backup your files, all the files will be forced into the /wp/data directory on your / hard disk. If, on the other hand, you use only data as the file specification, you can restore the files to any directory. If you first change to /u/fred and then give the command on the Fortune:

```
fxfer xv
```

all of the files will be copied into /u/fred/data.

So, the moral of the story is that if you have exactly the same pathnames on both machines, you can just include the initial /. If you want the flexibility of restoring to anywhere on your disk, do not use an initial slash.

Also, avoid using ./directory to specify up one directory and down into another. This syntax will confuse **fxfer**.

As you can see, **fxfer** is a very powerful program. It's primary uses are for users with PC's and Fortune's who need to transfer information back and forth. If you have any questions about **fxfer**, or you would like to order a copy, please call us at (617) 894-6900.❑

/u/help

This month, in addition to answering questions, we thought we might report on some of the events around The Cambridge Consortium. In the event that some of our readers have experienced similar problems there might be some useful information here.

Our problems began back in August when we were upgrading to a new SX70T system to give ourselves some more breathing room on the hard disk and also to provide a convenient method to backup our files. Shortly after installing the new system, we began to experience all kinds of problems. A frequent one was a frozen system accompanied by a "PANIC PARITY" message. Usually this message indicates a problem with a memory board, but changing memory boards and locations didn't seem to help all that much. Even more troublesome were messages that reported "TRAP KERNEL BUS ERROR" along with a screenful of information followed by a frozen system. Of course all of this was happening while we were trying to create the last newsletter. The Fortune Diagnostic routines didn't show any problems, and we were stymied and frustrated.

Finally, things took a turn for the worse. It's always easier to fix something that's really broken than a vague problem that comes and goes. Our system got to the point that it would sometimes boot up, but almost always, within a few moments, it would suddenly start to reboot and count from 1 again. Often it wouldn't even get through the whole boot sequence before it reset itself. After some soul searching and after removing almost every optional board in the system without effect, we decided to try a different power supply and voila, that solved the problem. The hunch is that the power supply wasn't delivering constant electricity, but wasn't quite so bad as to generate the POWER FAILURE message.

Bad power supplies can generate a variety of problems in a Fortune, even if the machine seems to basically be working. We've seen machines with bad SIO (tty01) ports that were caused by a bad supply. A long time ago, everything on our machine was working fine, except for the main console, which seemed totally dead. We would watch the hard disk light, and from memory enter the date, time and Execute keys in the appropriate sequence, and before long the system was usable by all of the other terminals. The old console with the curly cord is actually powered by the main computer, and can fail if part of the power supply dies.

Fortunately power supplies aren't as expensive to repair as they used to be, so we got ours fixed and now we're up and running again.

A word of caution to any readers who are ambitious enough to open the case of your Fortune computer. Make very sure that after you're through with whatever you've done that the fan is still working. Space is tight inside the 32:16's and it's easy to get a cable stuck in the fan. If that happens, your system will melt in short order.

Question: *I have this problem. I create alot of files with Fortune:Word - letters and things like that. I need a way of locating a file on my Fortune computer that has a certain text string in it. For example, I know that I wrote a letter to Harry Jenkins about 6 months ago but, for the life of me, I can't remember what I called the file. Is there any way I can search through all the files in my directory, or in the system for that matter, for the word "Jenkins"?* - **Mitch Burgess**

Answer: Yes! To fully answer your question will require the use of just two Unix commands: **grep** and **find**. First, let's remind our readers that the **grep** command is designed to search for text strings in a file. (Note: the **grep** command is included in For:Pro 2.1. If you don't have **grep** and would like it, you can order our **Compressor's Delight Diskette**). For example, the following command will search through all the files in a particular directory for the string "Jenkins":

```
grep "Jenkins" *
```

This command will look for the string between the the double quotes (") in each file and will print out on the terminal all the lines in each file that contain the desired string. The **grep** command contains many options which modifies its behavior. One is the **-l** option which instructs **grep** to just print out the name of the file in which the string appears.

So, we have part of the answer: just use the **grep** command. However, if you would like to search through all the files in the directory as well as all the files in any subdirectories, then we need to use the **find** command in conjunction with the **grep** command as follows:

```
find . -type f -exec grep -l "Jenkins" {} \;
```

I know the above command looks a little intimidating but it is understandable. First, we start the **find** command with the current directory (that's what the period is for!). Next we see **-type f**, which tells the **find** command to just find files which are "files" (as opposed to directories or other special types of files). Next, we tell the **find** command to send this list of file names to the **grep** command (`-exec grep -l {} \;`).

While the above command does the job, you may want to take it one more step by creating a little shellscript that any user could have access to. ❑

Classified

This Classified section of **/u/fortune** *news* is designed to serve our subscribers and Fortune computer users in general. In order to help everyone use their Fortune hardware and software to its utmost, we are providing a forum for the selling and the buying of used equipment. We will be including this Classified section in each issue of **/u/fortune** *news* as long as there is sufficient interest. So, if you would like to find something for your Fortune or locate a buyer for your equipment, you should not overlook this valuable resource. If you are interested in a listing in this section of **/u/fortune** *news*, please call us at (617) 894-6900.

Fortune 32:16

1 MB Memory
30MB Hard Disk
Fortune:Word
Will take best offer.
Call David at
(718) 965-9857

SX 70 T

This unit has a 70 MB hard disk, 60 MB Tape streamer, 1MB of RAM and has For:Pro 2.0. It turns out we have an extra machine that we would like to find a good home for. Call the friendly folks at **/u/fortune** *news* for a good deal - (617) 894-6900.

20MB 32:16 - Includes For:Pro 1.7.4.1, 768K RAM, console, 2 terminals, 4-port Comm A and a **20MB Tape Expansion Box.** Software includes: SMC BAS modules, Extended Fortune:Word, Developtment Utilities, and a C compiler. Purchased direct from Fortune, Hardly used, will take best offer. Call Gerry Armel at (508) 285-3040.

Fortune 45-SX Computer System

Hardware Description:
1 meg memory, 4 port Comm A board, 1 additional Work Station plus Nec 3500R Spinwriter plus tractor feed, cut sheet guid and feeder cut sheet.

Software Included:
For:Pro 2.0, Multiplan, Fortune:Word

Miscellaneous cables and supplies.

Please call **Don Robinson** at **(217) 428-6467** for more information.

Fortune 32:16 with 20 Meg drive, 1 Meg of memory. Software: Multiplan, Business Basic, Fortune:Word, Multiuser and Thoroughbred BK, AP, AR and GL. Also includes NEC 7710 Spinwriter. System received light use, in excellent condition. Please call for details at **(203) 873-1459.**

Fortune 32:16 XP 30

Hardware:
1 Meg RAM, 30 Meg Hard disk, 8 ports plus printer port, Console terminal plus 2 FIS 1000 terminals, Nec 3500 LQ printer with acoustical enclosure, and Anadex 9500 Dot Matrix printer.

Software:
Fortune:Word Plus, Multiplan, a complete RDBMS accounting set of software plus 4GL RDBMS utilities, and more.

Please call the **DP Manager** of First National Bank of Bellevue at **(402) 291-4300.**

Fortune 32:16 10MB

Hardware:
This system has 1 Meg of RAM, 10 MB hard disk, 4 port Comm-A, Hayes 1200 Modem, Console and one additional workstation, IDS 132 dot matrix and Brother letter quality printers, all cables and books.

Software:
Includes Fortune:Word, Multiplan, some business applications, ITE, Basic, Pascal, C,Development Utilities and disks from **/u/fortune** *news.*

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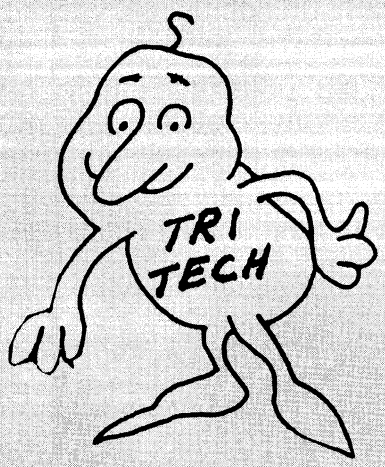

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The Newsletter for Users of SCI/Fortune Computers October 1989 / Volume 6 Number 10

SCI/Fortune offers Free Informix-SQL or Fortune:Word --See Page 2

Plus

Manipulating Text Files

Some formatting techniques for files that haven't been created with Fortune:Word *See Page 15 for more details.*

- **Dave Kloes installs SCO Xenix and DOS the Fortune 5000**
- **Ray Wannal discusses program copying and Solution-IV**
- **News from SCI/Fortune--What's happening with terminals and last year's earnings reported**
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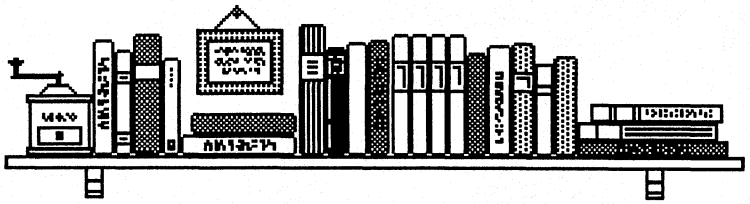
CONTENTS

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

ATTENTION SUPPORT COMPANIES. Always the glutton for punishment, we are going to try to put together our Fifth Annual IDOL/BAS Support Company Listing for January, 1990. In order to insure that you will be included, please call or write early with your company name, city, state, phone number, billing rate and contact name. Our phone is (301) 448-9460, and our address is BASIC Software Corporation, 5201 Powhatan Street, Baltimore, MD. 21207.

Question: Is there some product available that allows you to copy BASIC code from one program to another? I need to use the Inventory Master File IOLIST in a new program, and I would rather not have to type it in. There is too much margin for error and it is a pain in the ___.

Answer: Gee, try not to sit on your problems.

Thoroughbred LIBRARIAN from **Concept Omega** is a full screen BASIC editor for program development and maintenance. We understand it is a nifty tool. **LIBRARIAN** allows you to move code from one program into another and includes features such as insert and delete, search and replace, cursor control, syntax checking, and on-line support documentation. If this is your cup of tea, contact your Thoroughbred dealer.

We admit we have never used LIBRARIAN. We are from the old school of programmers addicted to **EDIT** and other **BASIC** commands. We always manage to find a way to do things without spending extra money. Our cheapskate solution to your problem uses the **MERGE** directive. Here is how we do it in three steps.

Assume you are keying in a new program called "PROG2" and you wish to bring line 50 from an old program, "PROG1", over into "PROG2". You need to create an INDEXED file to temporarily hold the code to be merged into PROG2. We like to use the file name "COMB", short for "Combine", as the INDEXED file name, but you may use any name you wish as long as the file does not already exist on your system. The record size must be 80, and the number of records must be at least one for each statement line being transferred. The disk number can be any enabled disk and the sector is zero for UNIX systems. The file can be created with the BASIC Utilities or from the BASIC console:

```
INDEXED ''COMB'',100,80,2,0  <CR>
```

This tells the computer to create an INDEXED file named "COMB" containing 100 records of 80 characters each on disk 2 at sector zero. (The <CR> means press the Carriage Return Key.) On we go to step two.

From your console mode LOAD "PROG1" and, if you prefer wearing a belt with your suspenders as we do, type in BEGIN <CR>. Get rid of unwanted code from PROG1 by typing:

```
DELETE 1,49  <CR>
DELETE 51,   <CR>
```

Now add statement 9999 END (to eliminate a harmless error 21 later) and open a channel to your new file. LIST the program code from PROG1 into that channel:

```
OPEN (1) ''COMB''  <CR>
LIST (1)           <CR>
END                <CR>
```

The END command closes the channel. The code to be transferred is now in the file called "COMB". To put it into your new program (step 3) use the following sequence of commands:

```
LOAD ''PROG2''     <CR>
OPEN (1) ''COMB'' <CR>
MERGE (1)         <CR>
SAVE              <CR>
END               <CR>
ERASE ''COMB''     <CR>
```

If you do not include statement 9999 END in the merge code, the error 21 occurs at the MERGE (1) command. Don't fret if this happens, no harm is done. In any event, at this point

the desired line of code has been included permanently in your new program and the temporary file "COMB" is no longer on the disk.

It's time once again to break from our normal format to report on the latest from **Concept Omega Corporation**. We mentioned last month that the **Thoroughbred** people are sponsoring a series of road shows in lieu of their Cruise/ Conference this year. We attended one of these shows recently and, as expected, were introduced to new Thoroughbred products in development, in testing and/or already released. They include **QUERY-IV, BASIC 7.5.1, Series 8 BASIC** and, of course, **Solution IV Accounting Software**. The show was conducted by three of Thoroughbred's top guns: John-L Johnson, President and chief honcho, Terry Bradunas, Marketing Director and all-around guy, and Kevin Koskela, Solution IV Product Manager and resident guru. We feel a capsule report is in order.

From the preliminary draft of Thoroughbred's QUERY-IV User Guide we find the following definition:

"Thoroughbred QUERY-IV is SQL-compatible and is primarily used to examine data. It is a read-only query language, which means you cannot damage the data. It is also an interactive language that allows you to query the database on an ad hoc basis, but it also has the capability provided with embedded query languages that allows you to save and recall your queries, as well as execute existing queries from a menu, script or QUERY-IV itself."

Now for those who request it, a standard SQL syntax language product is available with Thoroughbred Software. Defined queries can be incorporated into REPORT IV where they can be further manipulated by the end user. Future enhancements to QUERY IV will allow us to read files from Informix, Oracle, Unify and other C-ISAM Databases. QUERY IV is due to be released for sale to the general public at the end of this year.

Probably the most important new feature with **BASIC 7.5.1** is the elimination of the need for a hardware Passport when installing Thoroughbred products on your system. In previous releases of Thoroughbred BASIC it was necessary to attach this little box to a serial port on the back of your computer. With 7.5.1 security is maintained via the system serial number which is tested with encrypted programs each time the system is booted. All of the 7.4 enhancements are included, such as ghost tasking, right-to-left POS functions, full-screen EDIT, and slave printers. 7.5.1 is a "bridge product" to the series 8 BASIC's and should be installed before upgrading to 8.0 or 8.1. BASIC 7.5.1 is available now on most machines.

The big new language release is BASIC 8.1, which should be available for DOS, UNIX and VMS systems around the end of the year. Check out some of these new features:

A FI directive (ENDIF) allows you to continue a single line of code with a semicolon when that line contains an IF statement;

"?" shorthand for PRINT and "!" shorthand for SYSTEM;

Long variable names, up to 32 characters;

String arrays with up to 16 Mb per array;

Faster variable access;

Single Step for debugging: a period and <CR> will list and execute the next statement, even if that next statement is line one of a public program;

32,765 I/O channels with a CLOSE(0) command to close all opened channels except channel zero;

SQL Date arithmetic and masking to calculate dates and days from year 9999 b.c. to 12/31/9999;

Input editing with control values for arrow keys, insert key, delete key, etc.;

BEGIN & CLEAR EXCEPT (don't clear all the variables);

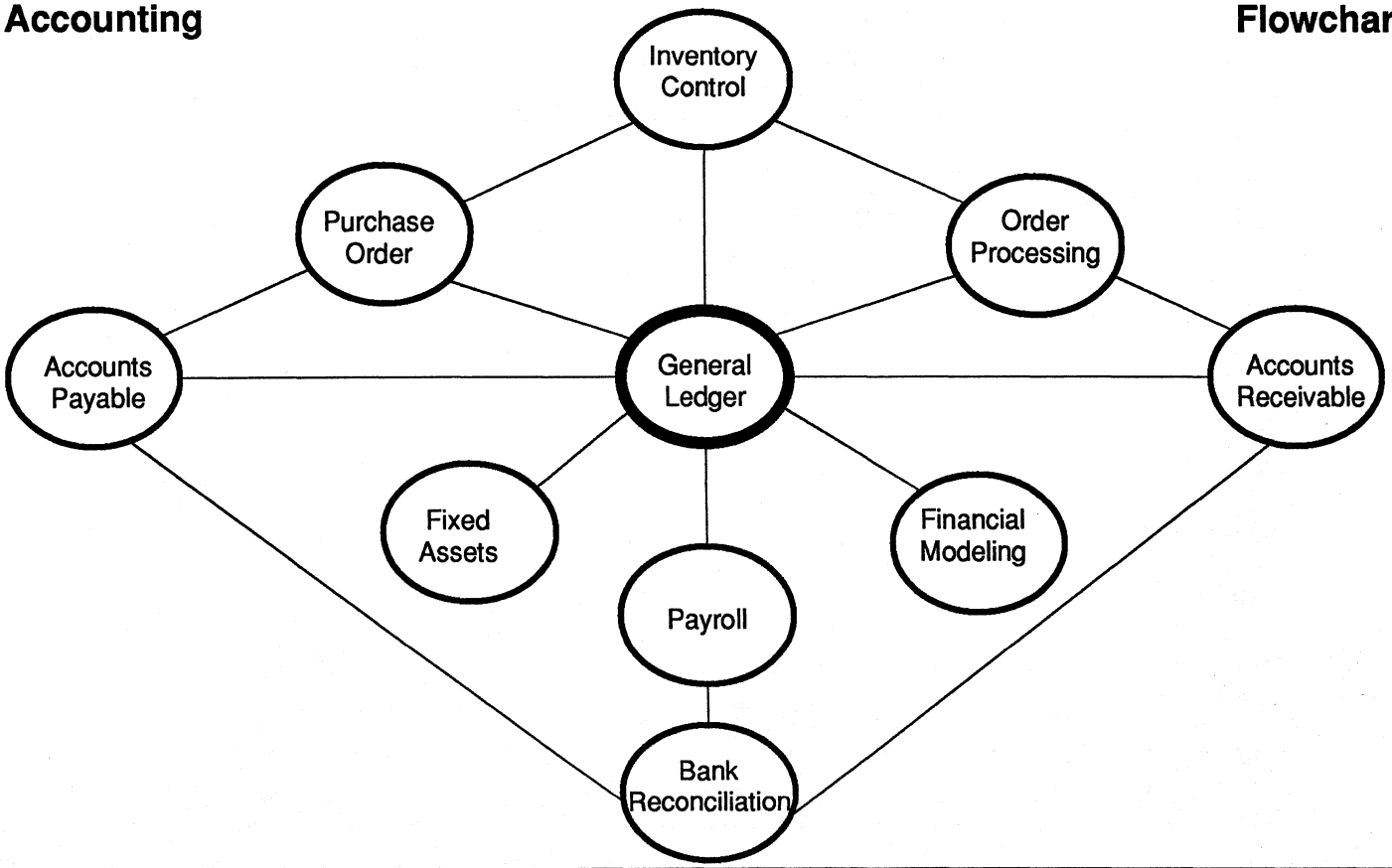
INITFILE (Clear existing file of contents but retain the file allocation).

Future versions of the 8 Series BASIC will include windows, multi-keyed files, fully integrated data dictionary, data names, industry standard C-ISAM compatibility, auto expanding files and call "c" programs with two way data passing. Eventually all of the SCRIPT-IV commands will be included in BASIC. Best of all, since the new languages are driven by the so called "b-code engine" written in third generation BASIC, you will still be able to run your older programs in the new environments.

In the June, 1989 issue of **/u/fortune news** (Volume 6, Number 6) we reviewed a draft of the **SOLUTION-IV Accounts Payable User Manual**. The payable package has now been released along with **General Ledger** and **Accounts Receivable**. Coming in early 1990 will be **Inventory Control, Order Processing** and **Payroll**. These six products were demonstrated at the road show, and they look every bit as good as we expected them to be. Our biggest gripe over the years has been with inadequate documentation. It looks like we will have to find another pet peeve. This stuff is great. The applications are fully integrated with each other. Reports are available on either the screen or on any configured printer. Extensive histories are maintained throughout and may be recalled with provided report programs whenever needed. And the non technical end user has more control over the operations. Figure 1 shows the system integration flowchart with all of the new applications. **Financial Modeling** and **Bank Reconciliation** are included with

Figure 1

Thoroughbred SOLUTION-IV® Accounting System Integration Flowchart



the first six applications. **Purchase Orders** and **Fixed Assets** are scheduled to be released in late 1990.

We touched on many of the new features in Accounts Payable in June, and we will talk about Order Processing, Inventory Control and Payroll once they have been released. In the meantime, here are some of the features of **SOLUTION-IV General Ledger** which are not present in the BAS version:

System parameters allow you to define the size and format of your account codes, the ending dates for each period (up to thirteen, not necessarily ending at the end of each month), and whether or not you use locations and/or departments;

General Ledger accounts of up to twelve alphanumeric characters;

Posting to future accounting periods and a future year without closing the current period;

Financial statements for any period in the current fiscal year, even if the period has been closed;

Posting to prior periods simply by reopening the prior period;

The balance of an account completely distributed on a percentage basis to a group of other accounts;

Four years of history automatically maintained for each account;

Budgets for last year, initial this year, revised this year and next year;

Activity, balance and transaction history inquiry for any account.

SOLUTION-IV Accounts Receivable includes these new features:

System parameters allowing you to tell the system whether or not to post to General Ledger, how you post finance charges, your customer aging categories, and how you handle sales commissions;

Different divisions for each customer, each with its own accounts receivable, sales tax, freight, discounts and finance charge accounts;

Commissions paid on either a gross or net invoice basis and also on all invoices or only on paid invoices;

A Customer Comments field in the Customer Master File in which free-form comments may be maintained, and a separate file for credit comments which can be printed on the Aged Trial Balance report;

Customer accounts processed on either an open item or balance forward basis, with some customers on open item and others on balance forward;

Invoices, credit memos, debit memos and adjustments are all entered in the same place;

Invoices and statements may be printed on either plain paper or on custom forms;

Automatic processing of recurring invoices such as service contracts or leases;

Multiple bank accounts in cash receipts with checks automatically distributed to invoices by date or invoice number range, or applied to individual invoices;

For most reports optional sorting by customer code, customer name, posting code or class code;

Expanded sort and detail options associated with the printing of the Aged Trial Balance.

So what about those of us who are stuck in 32:16 housing and are looking for a new apartment? Several days after the road show we contacted Terry Bradunas to find out if and how we Fortune 32:16 users can benefit from all of these new products. As you know, we are chained to a BASIC 6.5.12 prison wall. Unfortunately if we upgrade to the Formula we will merely change the decor of our cell. According to Terry the last, and probably final release of BASIC available on the Formula is 7.3.2. It is sold by SCI/Fortune. This version does not run IDOL-IV, SOLUTION-IV, or any of the other new products. There has been no indication from anyone at SCI/Fortune that future upgrades from Thoroughbred will be available for the Formula, so we must look to the Fortune 5000. For this box BASIC 7.5.1 will be available in a couple of months from Concept Omega (not SCI/Fortune). For this reason we can assume reasonably that Series 8 BASIC will be available to us when it is released. But we all know that nothing is ever certain with Fortune computers, so caveat emptor!

Whatcha gonna do? We would like to believe that SCI/Fortune will break the old Fortune Systems track record ("upgrade ... upgrade ... FREEZE!"), but we still have the bitter taste of 6.5.12 in our mouth. On the other hand, we have been spoiled with our Fortune:Word and do not want to give it up. One possibility is to upgrade to the Thoroughbred TS-386 computer running under UNIX. Although it carries Concept Omega's Thoroughbred label, this machine is manufactured by SCI (as in SCI/Fortune). With a little sweet talk maybe we can convince SCI to allow us to transfer our word processor. After all, it's the same company, right?

If you do manage to move into an environment conducive to IDOL-IV you will find that the blend into the fourth generation can be fairly painless. To get started, all you need to do is define your data files in IDOL-IV and rebuild your sorts in each file View. The rest, e.g. menu definitions, can be integrated later.❑

System Administration: Part 30

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

Well, here we are again - where does the time go? As promised, we will be devoting the next two issues to talking about installing DOS and SCO Xenix on the Fortune 5000. We would like you to take the time to send us a short note about whether you are using a Fortune 32:16, Formula, the Fortune 2000 or the Fortune 5000. This would help us in determining the direction future articles will take. Certainly it is our intent to provide useful information to the majority of the readers out there. We don't get feedback from you often enough and sometimes we feel that we wonder if we are providing useful information to you. Unless you write or call us to indicate otherwise, we have to assume we are headed in the right direction.

Even though you may have a Fortune 32:16 or Fortune Formula, we hope that this series of articles will be educational and familiarize you with other versions of UNIX. For those of you that are toying with the idea of upgrading, you will also see that while the menus may be different, other versions of UNIX function pretty much the same as For:Pro. We also hope that you will discover some new features that might be useful to your particular company.

Now that Fortune/SCI has introduced their Fortune 2000 product (286 compatible), we will occasionally mention where what we tell you about the Fortune 5000 (386 compatible) differs from that system.

INSTALL DOS ON THE FORTUNE 5000

If you remember, we set aside a "DOS" partition when we loaded Interactive 386/ix that will be used for both DOS and SCO Xenix. For those of you that are not using Interactive 386/ix, you would start your installation by creating your DOS partition, leaving whatever room on the disk you want allocated for SCO Xenix. Note that you will not do any partitioning using the DOS "fdisk" program for the Xenix partition. SCO Xenix will only recognize space that has not been partitioned using the DOS "fdisk" utility.

Since it is not our intent to teach you DOS, we will only talk about installing DOS to the point that the "Startup" and "Operating" disks have been loaded. In our case, we will be installing IBM DOS 3.3.

1. Interactive 386/ix has a procedure for preparing the hard disk for the "DOS" partition we have set aside. Remember that even though we are referring to the "DOS" partition, this section of the hard disk that has been set aside by Interactive can be used for any two operating systems - not necessarily DOS and SCO Xenix. We mentioned last time that very few, if any, of you will be installing both Interactive 386/ix and SCO Xenix.

If you are going to use the DOS partition that has been set aside strictly for DOS, you can continue on to step 2. If you are going to use part of the DOS partition for another operating system, then you would follow this procedure.

Interactive 386/ix has an "fdisk" program just like DOS does (and SCO Xenix) that is used to tell the system about your hard disk partitions. Two important notes are mentioned in the Interactive 386/ix documentation:

1. Use **ONLY** 386/ix to create new partitions (in other words do not use the DOS "fdisk" utility).

2. Do not begin an alternate partition at cylinder 0 or 1. This will destroy data needed to boot 386/ix.

In addition, there are some warnings about other operating systems not being compatible with 386/ix and that using their format or fdisk utilities can destroy the 386/ix partition. 386/ix was primarily designed to work with a DOS partition. We will see as we go along if we have any problems with the installation of SCO Xenix.

When we run the "fdisk" command at the UNIX prompt, we get the following *(Note, the negative numbers seem to be an anomoly of the Interactive fdisk command -- everything looks normal with fdisk commands under Xenix).*:

```
************************************************************
Total hard disk size is 1249 cylinders

                                    Cylinders
Partition  Status  Type      Start  End  Length   %
---------  ------  ----      -----  ---  ------  ---
    1              DOS           1  750     750   60
    2      Active  UNIX        751  225    -525  343830

SELECT ONE OF THE FOLLOWING:

  1.  Create a partition
  2.  Change Active (Boot from) partition
  3.  Delete a partition
  4.  Exit

Enter Selection:
************************************************************
```

We can tell from this setup that the "DOS" partition is one large partition starting at cylinder 1 (which we are not supposed to use) and ending at cylinder 750. Basically, we need to delete this partition and create two separate partitions - one for DOS and one for SCO Xenix. To delete the DOS partition, we select option 3 and delete partition number 1 (DOS).

Now we need to create the separate DOS and SCO Xenix partitions. We select option 1 and get the following prompt:

Indicate the type of partition you want to create
(u=UNIX, d=DOS, o=Other, x=Exit):

First we create the DOS partition so we pick "d" and then get another prompt:

Indicate the percentage (1-100) of the hard disk you want this partition to use (or enter "c" to specify in cylinders):

Notice that the original "DOS" partition was 60% of the entire disk. Remember in our previous articles, that we wanted 40% for SCO Xenix and 20% for DOS. If we enter the percentage number, cylinder 1 will be used. Since we are not supposed to use this cylinder, we enter "c". We are then prompted for the starting cylinder number to which we answer 2. Next we are prompted for the partition size. Remember that we wanted to allocate 250 cylinders to DOS which is about 20 percent of the available disk space. But we did not use cylinder 1 so we subtract 1 from 250 and enter the partition size as 249.

We are then asked if we want this to be the active partition. The active partition is the partition that the system will boot from. We want DOS to be the active partition but we are not quite ready to do that so we answer "n". Now our table looks like this:

```
Partition  Status  Type      Start  End  Length   %
---------  ------  ----      -----  ---  ------  ---
    1              DOS           2  250     249   203830
    2      Active  UNIX        751  225    -525  343830
```

We then go through the same procedure to allocate room for the Xenix partition and our table looks like this:

```
Partition  Status  Type      Start  End  Length   %
---------  ------  ----      -----  ---  ------  ---
    1              DOS           2  250     249   203830
    2              Other       251  750     500   403830
    3      Active  UNIX        751  225    -525  343830
```

We now select option 2 to change the active partition to DOS so that we can load DOS. We then select option 4 to exit from "fdisk" and run "powerdown".

2. We are now ready to insert our DOS "Startup" disk and reboot the system. Normally we would run the DOS "fdisk" program to make sure the partitioning is correct. In our case, the "fdisk" program "freezes up" after installing 386/ix. We therefore made the assumption that the DOS partition was defined correctly from the 386/ix "fdisk" program and proceeding to load "DOS" using this standard command at the DOS prompt:

```
select c: 001 US
```

We installed the DOS "Startup" and "Operating" diskettes and DOS seemed to be running normally except for the "fdisk" utility. Because this utility is used to change the active partition for booting from the 386/ix partition, we had to use "Disk Manager" to change the active partition. We left the "fdisk" problem to be resolved at a later date and proceeded to install SCO Xenix.

INSTALLING SCO XENIX V

3. To install SCO Xenix (we used version 2.3.1), you insert the Xenix "boot" diskette (N1) and power up the system. It does not matter which partition is active when you use this procedure. The first prompt that you will get is to select a "Keyboard Type". From the list of languages given, we selected option 1 "American". You are then given the following warning:

During installation you may choose to overwrite all
or part of your hard disk.
Do you wish to continue? (y/n)

Unlike Interactive 386/ix, SCO Xenix will only allow you to use and format disk space that has not been allocated to other partitions so we answered "y". The next screen displays a menu for your hard disk configuration:

```
************************************************************
Hard Disk Drive 0 Configuration

1.  Display current disk parameters
2.  Modify current disk parameters
3.  Select default disk parameters

Enter an option or 'q' to quit:
************************************************************
```

By selecting option 1, we can see our current parameters which are taken from the disk type table for the disk type we entered in the Phoenix "setup" program. Sometimes, we are not able to find a disk type that allows us to tell the system all of the space that is available. This is about the only time you

might want to change these parameters to tell Xenix that there is more disk space than the disk type table indicates. Since our table appears correct, we enter "q" to go on.

4. Next, the SCO Xenix version of "fdisk" is displayed:

```
****************************************************************
1. Display Partition Table
2. Use Entire Disk for XENIX
3. Create XENIX Partition
4. Active Partition
5. Delete Partition

Enter your choice or q to quit:
****************************************************************
```

Since we want to look at the current partitioning, we selection option 1 and get the following:

```
****************************************************************
Current Hard Disk Drive: /dev/rdsk/0s0

-------------------------------------------------------------
|Partition  |  Status    |   Type      |  Start  |  End  |Size|
|-----------------------------------------------------------|
|2          |  Inactive  |   UNKNOWN   |  5257   |  8749 |3493|
|3          |  Inactive  |   UNKNOWN   |  1757   |  5256 |3500|
|4          |  Active    |   DOS       |  14     |  1756 |1743|
-------------------------------------------------------------

Total disk size: 8750 tracks
****************************************************************
```

Notice that SCO Xenix sees things in terms of "tracks" rather than "cylinders" and that there are 8750 tracks available. Note also that the partitions are numbered differently.

Without going into a lot of detail, we have a problem here. Remember that we said that SCO Xenix will only use disk space that has not been allocated to other partitions. But, since we created the "other" partition for SCO Xenix when we set up the disk in Interactive, SCO Xenix now sees that as "used" space. The bottom line here is that if we want to use this disk space, then we need to delete that partition in 386/ix so that SCO Xenix will not see it being "used". Again, probably only the dealers out there would want both 386/ix and SCO on the same system. For the rest of you, we bring up the issue because you may encounter the same problem if you are installing other operating systems on your system.

So, for us it is back to the drawing board. We cannot delete the partition here because the SCO "fdisk" will only let you work with Xenix partitions. In our case, we have to reactivate the 386/ix partition; reboot; and run the 386/ix "fdisk" to delete the "other" partition we created for SCO Xenix.

After we do this and reboot from the SCO Xenix disk, our SCO Xenix "fdisk" table looks like this:

```
-------------------------------------------------------------
|Partition  |  Status    |   Type      |  Start  |  End  |Size|
|-----------------------------------------------------------|
|3          |  Inactive  |   UNKNOWN   |  5257   |  8749 |3493|
|4          |  Active    |   DOS       |  14     |  1756 |1743|
-------------------------------------------------------------
```

Now that SCO "sees" the free disk space we can create the Xenix partition. Note that the DOS partition ends at track 1756. Partition 3 (the 386/ix partition) starts at track 5257 so we want Xenix to be sandwiched between which means it will start at track 1757 and end at track 5256 with a size of 3500.

To create the Xenix partition, we pick option 3 (Create XENIX Partition). The current table is displayed and we are asked to
enter the starting track number and the partition size in tracks. We responed with 1757 and 3500, respectively. Our new table now looks like this:

```
-------------------------------------------------------------
|Partition  |  Status    |   Type      |  Start  |  End  |Size|
|-----------------------------------------------------------|
|1          |  Inactive  |   XENIX     |  1757   |  5256 |3500|
|3          |  Inactive  |   UNKNOWN   |  5257   |  8749 |3493|
|4          |  Active    |   DOS       |  14     |  1756 |1743|
-------------------------------------------------------------
```

We now select option 4 to activate the Xenix partition and enter "q" to proceed.

5. Our next menu allows us to work with the Bad Track Table:

```
****************************************************************
1. Print Current Bad Track Table
2. Scan Disk
3. Add Entries to Current Bad Track Table by Cylinder/Head
4. Add Entries to Current Bad Track Table by Sector Number
5. Delete Entries Individually from Current Bad Track Table
6. Delete All Entries from Current Bad Track Table

Enter your choice or 'q' to quit:
****************************************************************
```

Remember that the bad cylinders on your hard disk are usually listed on top of the hard drive. These should be entered using option 3. Next we select option 2 to scan the Xenix partition for the bad spots. When selected you have the option of scanning the entire XENIX partition; a specified range of tracks; or a specified filesystem. Normally on initial installation, you will want to scan the entire XENIX partition. When this option is selected, you are asked if you want a "quick" or "thorough" scan. Normally, it is best to play it safe and do the thorough scan which is the option we selected.

The next prompt asks whether you want this to be a destructive scan. We answered "y" since this is an initial installation. After a warning about the destructive nature of what we are about to do, the scan begins. The system tells you the percentage of the scan completed as it scans. Any bad spots are identified in the bad track table.

If all is well, you are returned to the bad track menu where you can select option 1 to see the bad spots that have been identified. We then enter "q" to continue.

6. We are next told that we should allocate from 1000 to 9857 blocks of swap space and are asked how we much we want to allocate or whether we want the default of 3214 blocks. Of course there are many things that can impact what this number should be. For example, the number of users that will be on the system; how large our disk is; and how much

memory we have available are just a few. Normally, we tend to be on the high side so we don't have to reload our system later on to change our partitioning. We usually allocate about 10% of our disk space. Since our SCO Xenix partition is 60MB, 10% would be 6000 blocks which is the number we entered.

7. The next prompt asks if we want a "separate /u filesystem". We have seen a lot of people get confused about this prompt. There is a big difference between "filesystem" and "directory". Some think that by answering "yes", they are creating a "/u" directory. Basically, we are being asked if we want separate partitions created for SCO Xenix. We answered "no" to this question (see our discussion of partitioning in our previous articles for installing Interactive 386/ix). If you answer "yes", you will be given an opportunity to specify the size of the separate partitions you want.

8. The next question asks whether you want block-by-block control over the layout of Xenix. Normally, you would answer "n" unless you want to choose the exact size of the swap and other Xenix partitions.

9. You are then asked to enter your serial and activation key. These numbers are normally on a pink card that is shipped with your diskettes. Your diskettes cannot be installed without these numbers so it is a good idea to put the card in a safe place. For extra insurance, we suggest that you also write them down somewhere in case the card is lost. After entering and matching these codes, you are asked to remove the Boot (N1) disk and reboot the system.

10. During the reboot procedure, a "fsck" (file system check) is run and you are asked to insert the "Basic Utility" disks "B1" and "B2." After inserting B2, you are asked to enter the "root" password; select the timezone you are in; and whether daylight savings time applies to your location. Following this you will see the following:

```
                    Current Disk Usage
----------------------------------------------------------------
Mount Dir   Filesystem  blocks    used    free  % used
/           /dev/root   106264    6454   99810      6%
----------------------------------------------------------------

        1.  Stop installation now
        2.  Continue istallation
```

Notice that to this point we have used 6% of the allocated space. One block is 512 characters so we can see that we started with about 54MB (106264x512) of data area (remember that we allocated 6MB for swap). We have used about 3MB so far (6454x512) and have 51MB remaining (99810x512). An easy way to convert blocks to a "ballpark" MB number is to take half of the significant digits (i.e. 1/2 of 106=53, 1/2 of 6=3, 1/2 of 99=49.5).

Since we still have other diskettes left to install, we decide to continue installation. If for any reason, you are dissatisfied

with your disk space allocation, now is the time to re-install before you go through the trouble of installing the rest of the system.

11. After selecting "continue", we got the following menu:

```
************************************************
        1. Operating System
        2. Development System
        3. Text Processing System
        4. Add a Supported Product
************************************************
```

To install the rest of the standard SCO Xenix operating system, you would select option 1. If you purchased the Development System and/or Text Processing System, they can be installed with options 2 and 3. Any other SCO Xenix product is installed using option 4. We selected option 1 and were asked to insert the "Extended Utilities" disk (X1). The following standard Xenix "custom" menu which is used to manage product installation was displayed:

```
************************************************
      1. Install one or more packages
      2. Remove one or more packages
      3. List the available packages
      4. List the files in a package
      5. Install a single file
      6. Select a new set to customize
      7. Display current disk usage
      8. Help

Select an option or enter q to quit:
************************************************
```

After we selected option 1, a list of packages to install was displayed. You can install part or all of these subsets. Since we were doing the initial installation, we selected "all". We were then prompted for each of the four "Extended Utility" diskettes (X1-X4); and the "Basic Utility" diskettes (N1-N3). During the process of extracting data from these diskettes, we were asked:

1. For implementing the backup schedule, if our installation consisted of only a root filesystem. We answered "y" since we only created one partition.

2. For the "backup" and "sysadm" login passwords.

3. If we wanted to initialize "terminfo". For:Pro uses "termcap" which is one of two ways that terminal capabilities can be defined. "terminfo" is basically a compiled "termcap" that allows for faster screen output. We prefer "termcap" so we answered "no". "terminfo" can be initialized later if we want to use it.

The "custom" menu was again displayed where we can install the unsupported "Games" disk using option 1 or enter "q" to quit the menu. We opted for "q" and then got the "Press Any Key to Reboot" prompt.

One sidenote before we leave you for this month. We have now installed three operating systems on the Fortune 5000. Remember that as far as the Interactive "fdisk" program is concerned, the SCO Xenix partition does not exist. Therefore, we can use this "fdisk" to change the boot partition to DOS but not to SCO. We could not get the "fdisk" to work in DOS after installing Interactive. The only way we could change the boot partition to SCO was to use a program like "Disk Manager". We can use the SCO "fdisk" to select Interactive, SCO, or DOS.

We have now completed the initial installation of SCO Xenix. Next month, we will continue with the configuration of the tape drive, printers, memory and terminals in the same manner that we did for Interactive 386/ix.❑

Software For The Fortune 32:16 And Formula

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

W-2 LINK ($395.00) - designed for companies with over 250 employess who must report W-2 payroll information to the Social Security Administration (IRS) via magnetic tape or diskette. Automatically takes information in the Business Accounting System (BAS) Payroll module and puts it onto diskette in the format required by the IRS. Also available for PAC software. also.

1099 LINK ($295.00) - this product produces Form 1099's required for submission to the IRS and is an extension to the standard BAS Payroll module.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

WESTERN LINK ($195.00) - provides instruction on how to use your Fortune for sending/receiving telex messages using Western Union's Easylink. Can replace your telex! Fortune ITE or Handshake software required.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

FINANCIAL LINK ($295.00) - passes BAS Income Statement and Balance sheet to Multiplan or UltraCalc. Stores and instantly reprints these statements for current/previous period without sorting.

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News From and About SCI/Fortune

SCI/Fortune Announces the New 4.1 Basic Workstation

SCI/Fortune is pleased to announce the **4.1** version of our **Basic Workstation**, our popular display terminal with detachable keyboard. The 4.1 version is identical to the 4.0 Basic Workstation, except that a new release level of the System ROM EPROMs have been incorporated into the logic board.

The Basic Workstation includes either a **green** or **amber** phosphor 14 inch monochrome display and a low profile 101-key keyboard, joined by a coiled cable with RJ-11 connections. A "Basic Workstaion User's Guide" and a "Using Fortune Terminals" manual complete the package.

A versatile addition to a professional business environment, the Basic Workstation has the ability to support multiple terminal emulator programs and customized keyboard and character displays. SCI/Fortune terminals are typically used with SCI/Fortune's Intel and Motorola platforms, as well as systems offered by other computer manufacturers.

The new 4.1 Basic Workstation replaces both the 4.0 and the 3.9 series, and becomes the foundation of our single terminal line.

Basic Workstation Production Brought Home to America

SCI/Fortune has lately experienced difficulty in meeting your demand for our Fortune Basic Workstations and has not shipped them in some cases within our promised five day turnaround. In fact, we have recently been forced to quote delivery times of 30-45 days on green terminals, and even longer on the amber versions. Therefore, we want to take this opportunity to explain our current situation and what we are doing to address the problem.

You may be aware that earlier versions of the Basic Workstation displays were being built in Korea, then shipped to us for final inspection and run-in. This arrangement proved somewhat cumbersome, but after the SCI buyout of Fortune Systems we continued to purchase from Korea to fulfill the remainder of our contractual obligation.

Subsequently, we phased in the domestic production of system boards as well as the final assembly operation using SCI Manufacturing facilities and expertise.

Currently we are building the boards and doing the final assembly, as well as final inspection and run-in, right here in our San Jose facility. This arrangement gives us much tighter control over the quality of our product, as well as a better ability to adjust production and inventory levels to match our orders.

However, we are in the "ramping up" process, and still trying to catch up to previous demands. At this time, we do have available a limited number of the 3.9 version Basic Workstation, and a substantial supply of the new 4.1 version, but in green only on both. Since we are moving toward a single line of terminals - the 4.1 series - there will not be any further production of 3.9 workstations. Amber 4.1 workstations will be available in November.

We apologize for the inconvenience caused by unexpected high demand for the Basic Workstation coupled with the difficulties in transitioning from our overseas supplier to our domestic facilities. But in the long run, we think you'll agree that "bringing it all back home" was a good idea!

3.9 Workstation About to Become A Collector's Item!!

You'll have to act fast if you want to get a few of our last 3.9 version Basic Workstations, because they'll soon be collector's items. We're moving toward a single terminal product line with our new 4.1 Basic Workstation, and consequently the 3.9 versions are no longer in production.

Very limited quantities of the 3.9 workstations are available on a "While Supplies Last" basis - in green only. Be sure to confirm availability with the Sales Service organization at the time you place your order.

SCI Systems, Inc., Announces Fiscal Year '89 Operating Results

SCI Systems, Inc., has announced consolidated operating results for fiscal year 1989, ending June 30, 1989.

Sales for the fiscal year were $987 million, compared with $774 million the previous year. Net income for 1989 increased to $21 million compared to $19 million for 1988. Earnings per share for the year were $1.00 compared to $.91 for the previous year.

Working with Text Files --

Counting, Paginating and Formatting with wc, pr, and ff

One of the first uses that UNIX was used for was the manipulation of text. You have probably noticed that when you use your computer, you tend to generate alot of files and many of these files are text files. For example, you may write letters, or notes to yourself. Or perhaps you receive mail messages from others or you write programs in the shell language, or Basic, or C, or some database language, etc. Yes, indeed, most of the work we do on computers somehow involves text!

It should come as no surprise, then, that UNIX contains many programs that are designed to deal with text. In this article, I will touch on several programs that will help you efficiently work with text files.

Counting

One of the first programs I want to discuss is one called **wc** which stands for **word count**. Wc is designed to count several aspects of any text file, for example, the number of lines in the file, the number of words in the file and the number of characters in the file. It can also count the number of pages in a file (assuming, for example, 66 lines per page) and it will tell you how long it takes to transfer the file at some specified baud rate.

Wc is very easy to use. I have several files in the directory in which I'm currently working. If I type wc *, I see the following output:

```
  92    705   4419 news.sci
 477   3450  21665 sysadm30
   5      5    802 sysadm30.dc
   1      1     66 sysadm30.fr
 145    955   5616 uhelp.mbp
  55    463   2903 uhelp.sci
 775   5579  35471 total
```

The first column shows how many lines in the file. The second column shows how many words in the file and the third column shows how many characters in the file. Finally, the fourth column shows the file name. Let's say that I wanted to print the file called sysadm30 on the line printer but I wanted to know how many pages it would take. I could type:

```
wc -p sysadm30
      8 sysadm30
```

The output, 8 sysadm30, tells me that it would take 8 pages.

To get all the statistics that wc gives, use the -v flag like:

```
wc -v *
```

lines	words	chars	pages	time@300	
133	1137	5878	3	3.3 mi	formout.txt
100	200	1200	2	40.0 se	inventory
92	705	4419	2	2.5 mi	news.sci
477	3450	21665	8	12.0 mi	sysadm30
5	5	802	1	26.0 se	sysadm30.dc
1	1	66	1	2.0 se	sysadm30.fr
145	955	5616	3	3.1 mi	uhelp.mbp
55	463	2903	1	1.6 mi	uhelp.sci
1008	6916	42549	21	23.6 mi	total

I use wc all the time for various purposes. One of the most common these days is sort of a validity check. I do alot of work with data files - files that are comprised of numbers. Generally, the structure of these files is that each line contains the data for one individual and also, there should be the same number of data elements on each line. So, for example, if I have data for 50 people and I measured 5 characteristics for each of these people, then I should have a file that has 50 lines with 5 "words" per line, thus 250 "words" (where a word is defined as a series of characters surrounded by spaces). I can't tell you how many defective files I have found with wc.

We also use wc quite a bit when putting this magazine together. By running wc on the files that contain text, we can get a quick ballpark estimate of how many pages an article will take in **/u/fortune** *news*.

Paginating

Another useful command for dealing with text files is called **pr**. Pr is used to "print" text files but it has many features that allow you to control the output. For example, the basic way of using pr is to simply type:

```
pr filename | lpr
```

This will produce a paginated copy of "filename" on your line printer. It will also put a header on each page that lists the name of the file, the date and the page number. Several options vary how pr works. For example, you can specify your own header with the -h flag as in:

```
pr -h ''My header goes here'' filename | lpr
```

Pr generally puts a 5 line header and footer on each page. Header simply refers to the fact that the initial 5 lines on the top of the page is blank except for the header line. The footer is also 5 blank lines on the bottom of the page. You can disable the use of a header with the -t flag.

Another great use of pr is to generate multicolumn output. For

example, suppose I had some sort of inventory file that just contained the name of some item and the count of that item in stock - something like this:

```
widgetA 120
widgetB  15
```

and so on. In fact, suppose that I had 6000 such widgets in my inventory file and suppose I wanted to get a listing of this file. Well, I could just print it out but it would use alot of paper and much of the page would be blank.

As an aside, if I wanted to know exactly how many pages it would take using pr, I could use the wc command like this:

```
wc -s56 -p inventory
```

I used the -s flag and set the page size to 56 because if I use pr to print the file, then I must remember that there will be a 5 line header and a 5 line footer. Since a page is usually 66 lines, I subtract 10 fromt 66 to get 56. The wc output for a file with 6000 lines is 108, thus I will print out 108 pages. That is alot of wasted paper.

But wait a minute. If I could somehow get two columns on each page, then I could reduce that amount of paper from 108 pages to 54 pages. Now that is quite a savings. And guess what, pr can do just that with a simple command like:

```
pr -2 inventory | lpr
```

Let's go even further. Suppose we have wide paper loaded in our line printer. This paper is generally 132 columns wide when using standard size print rather than 80 columns wide for narrow paper. So, I think we can fit 4 columns on this size paper. But to do it we would use the following command:

```
pr -4 -w132 inventory | lpr
```

You see, we've used the -w flag which allows us to tell pr how wide the paper is. Now we've gone from 108 pages to just 27 pages of output!

Have you ever had you printer jam in the middle of a big job and had to start the job over? Well, one last flag that we will mention with the pr command could save you in this situation. Suppose we started our 27 page job printing and it jammed on page 15. The first 14 pages were perfect but now we're faced with printing the whole job again - or are we?

Of course not, with pr you could just type:

pr -4 -w132 +15 inventory | lpr

And our printing would resume with page 15!

Formating

Pr does just the most rudimentary formating. It will paginate and put a header and footer on each page. Sometimes you want to do more than just that and there exist programs that will allow you to do some very fancy formatting within UNIX.

I want to point out here, however, that **Fortune:Word** is the formatter par excellance. You can do all kinds of formatting within **Fortune:Word** and as our readers know it is a very powerful and versatile word processor. But there are times and situations when one needs to take already existing text and do some simple formatting. UNIX does provide some commands to do just this.

There is a widely used text formatter that is somewhat standard in UNIX and it is called **nroff** (which is available as part of the Development Utilities for the Motorola platform and is available as part of the text processing bundle for the Intel platform). Nroff is a text formatter which uses formatting commands embedded in the text to control the output of a file. It will allow you to do just about anything.

I can not explain how to use this program in this article but I did want to mention it since it is so standard.

Another simpler text formatter is called **ff** and is distributed on our UNIX Tools II. The main feature I want to discuss here is the "filling" of text. Filling means moving words around so that all the lines in the file are about the same length. I have a little text file, called tfile, that shows you what an unfilled file looks like:

```
This is
an example of what an
unfilled text file
looks like.
See
how ragged and unformatted
it looks?
```

Now I can use ff to "fill" this file by using typing

```
ff -w27 tfile

This is an example of what
an unfilled text file looks
like.  See how ragged and
unformatted it looks?
```

Notice how some of the words were drawn up onto other lines to produce a more even effect. The -w27 sets the width of the output - I chose 27 here so that it would fit in the magazine columns nicely. The default width is 72 which works well for a standard size paper and standard size type.

You can use ff to right justify your text as well by typing:

```
ff -w27 -j tfile

This is an example of  what
an unfilled text file looks
```

```
like.  See  how ragged  and
unformatted it looks?
```

The main difference here is that the right margin will line up. There are many options with ff but we will discuss just two more.

First, you can use ff to produce and indented paragraph effect with this command:

```
ff -w27 -j -I 5 tfile

     This is an example  of
what an unfilled text  file
looks like.  See how ragged
and unformatted it looks?
```

The last effect is that of deleting blank lines from some text file. There are many times we run into the problem of wanting to get rid of blank lines from some file of text. There are different ways of doing this that range from the laborious to the more sublime. ff provides a simple way to do just this. By combining two flags, we delete any line in a file that is either empty or contains just spaces. The syntax would be:

```
ff -Dd filename
```

The -d flag deletes any space at the beginning and end of any line and the -D deletes empty lines.

There are many other options to ff that control various features like displaying headers and footers, indenting and centering text, numbering lines, controlling and paginating the text, and even setting single and double spaced output.

Conclusion

UNIX contains many commands that are designed to deal with text. We discussed three versatile and ready-to-use commands called wc, pr and ff that allow you to count, paginate, columnate and format text among other things. ❑

Mark Palmerino

/u/help

Gentlemen,

Our company uses a Fortune 32:16 system, UNIX version For:Pro 2.0 and we would like to have your advice on a problem we encounter with our backup program using a tapestreamer.

The following commands are part of a program to append selective backed up files on our tapestreamer:

```
/usr/bin/st labeled read verify
/bin/far -Backup -append -recursive=no -special -verbose -what
-keepset_name=$lsys#$6$month$d -far_file=/dev/st00
-indirect=/tmp/$lsys#files 2> /tmp/$lsys#$6$month$d
```

```
where $lsys#$6$month$d ->
lsys = name of the machine (/etc/sitename)
month = current month (i.e., jan = 01)
d = current day
```

$lsys#files ->
is created with the find command:

```
find /u -mtime -$n -print >> /tmp/$lsys#files with $n being the number of
days since last backup.
```

Everything goes fine with a limited number of directories to be backed up. However, the program ceases to work with a longer list of directories and subdirectories.

Do you know any way to make our program work with unlimited directories?

With our thanks in advance.

Sincerely,

Dirk Smet
Engineer M.I.V.B. Rolling Stock
Houtweg 99
B-1130 BRUSSELS
BELGIUM

It looks like you are running into a problem that has arisen before in some backup strategies we have dealt with in this magazine. We think that you are exceeding a built-in shell limit with regard to the number of arguments that the shell can handle. The overflow is obviously coming from the list of files you put in the file that is represented by $lsys#files. That is, when this list is small, everything works fine. But when it is large, probably because $n (the number of days since last backup) is large, then the **far** command fails.

There are a couple of strategies you could take to solve this problem. One strategy might be called "divide and conquer." If the $lsys#files list is too long, then cut it into several pieces and then write out more than one keepset onto the tape. For example, you might create several lists in the following fashion.

First, make one long list as you always have with your **find** command. Then, use the UNIX **split** command to split it up into several smaller files. Let's say, for example, that through experimentation you find that the optimum size for a $lsys#files is to have 200 files in it. (Remember, this is a guess and with some experimentation you should be able to find the best number.)

You could use the **split** command to split $lsys#files into a series of files each with 500 lines in it with the exception of the last file which will probably have fewer than 500 lines in it. For example, suppose that the **find** command produced a $lsys#files file with 1837 lines in it. If we type:

```
split -500 $lsys#files
```

we will find 4 files created called **xaa xab xac** and **xad**. Xaa will contain the first 500 lines from $lsys#files, xab will contain the second 500, xac will contain the third 500 and xad will contain 337 lines (the leftover amount).

Now with these four files, you are prepared to write four separate keepsets out onto your tape. You can do this automatically by modifying your shellscript to include a for loop. The code might look something like this:

```
ksn=1 # ksn means keepset number appendage
for file in `ls -1 /tmp/xa*`
do
        /bin/far -Backup ... -keepset_name=$lsys#$6$month$d.$ksn ...
                             -indirect=$file 2> /tmp/$lsys#$6$month$d.$ksn
        ksn=`expr $ksn + 1`
done
```

Another strategy we developed before (see Volume 5 Number 3) was to actually link all the files to be backed up to a special directory on our hard disk and then simply backup up this one directory. We won't go into the details of this method here because it was formerly explained.

(The following questions and answers were received from SCI/Fortune's Technical Support Staff.)

QUESTION: It is my understanding that the current release of **INTERACTIVE UNIX System V** will run **XENIX** applications. Just what support can I expect for the XENIX applications I have already purchased?

ANSWER: Yes, AT&T UNIX System V/386 release 3.2 from INTERACTIVE will offer major changes and functionality over previous UNIX releases. Release 3.2 successfully merges the functionality of AT&T UNIX System V/386 and Microsoft XENIX System V/386 operating systems into a single UNIX operating system for the Intel 80386 based computer. System V/386 Release 3.2 will provide full binary and source code compatibility with applications developed for Microsoft XENIX System V/386 and Microsoft XENIX System V/286.

Source code written for XENIX System V/386 programs and applications can be compiled and linked without having to modify the source code.

Binary applications for XENIX System V/386 (2.2.0 and later) and XENIX System V/286 (2.0 and later) can run on Release 3.2 without the user having to recompile the applications.

Further, Release 3.2 will support the following: mounting of a XENIX System removable file system; XENIX System call extensions; and device drivers written for XENIX System V/386. XENIX System device names have been linked to equivalent devices on AT&T System V/386 Release 3.2.

QUESTION: Is **Fortune:Link** on the **Formula** and **32:16** compatible with **Ethernet** on the **5000**? Will Ethernet be available soon for SCI/Fortune's Motorola family of products?

ANSWER: No, the **Fortune:Link** family of products (software and boards) are not compatible for several reasons. The most fundamental reason is that Fortune:Link and Ethernet use two different types of hardware architecture in implementing a LAN. Physically, they cannot be connected if for no other reason than that they use different types of coax cable for interconnection. It is unlikely that you will see an implementation of Ethernet on the Formula or the 32:16. To establish a direct connection between a Formula and a 5000, you must use **uucp**.

QUESTION: The **fsck** utility has always seemed to be a great utility for repairing damaged file systems. Is there a time when it should not be used, and why?

ANSWER: There are several times when you should not use the **fsck** utility. All users except the manager should be logged off the system, as the system administrator will want the file system to be as quiescent as possible when running fsck. If there are multiple file systems being used (quite prevalent under UNIX V), they should be unmounted before running fsck. It is very important that you do not run this program when you have known hardware problems in either the hard disk, disk controller, or the cable. Running fsck on improperly functioning hardware will result most likely in more severe file system damage than what originally caused the need for running the utility in the first place.❑

Classified

This Classified section of **/u/fortune** *news* is designed to serve our subscribers and Fortune computer users in general. In order to help everyone use their Fortune hardware and software to its utmost, we are providing a forum for the selling and the buying of used equipment. We will be including this Classified section in each issue of **/u/fortune** *news* as long as there is sufficient interest. So, if you would like to find something for your Fortune or locate a buyer for your equipment, you should not overlook this valuable resource. If you are interested in a listing in this section of **/u/fortune** *news*, please call us at (617) 894-6900.

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Call **Jim** and/or leave message at (212) 724-8114 for more information.

Fortune 32:16 System 20MB

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20MB 32:16 - Includes For:Pro 1.7.4.1, 768K RAM, console, 2 terminals, 4-port Comm A and a **20MB Tape Expansion Box.** Software includes: SMC BAS modules, Extended Fortune:Word, Developtment Utilities, and a C compiler. Purchased direct from Fortune, Hardly used, will take best offer. Call Gerry Armel at (508) 285-3040.

Note: Don't miss SCI/Fortune's new Informix-SQL and Fortune:Word promotion. If you buy any new computer system from your SCI/Fortune dealer, then SCI/Fortune will award you a choice of a FREE copy of Fortune:Word or Informix SQL! See Page 2 for details.

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The Newsletter for Users of SCI/Fortune Computers November 1989 / Volume 6 Number 11

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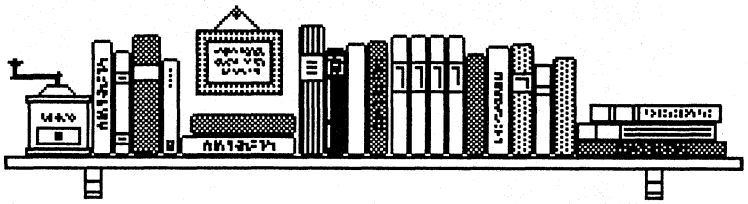
CONTENTS

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSiC Software Corporation which is located in Baltimore, Maryland.

LAST CALL!!!

We are receiving slow response this year for our fifth annual IDOL/BAS/BASIC Support Company Listing. If you have not yet contacted us please call or write immediately. The listing is due to be published in our January article. The address is BASIC Software Corporation, 5201 Powhatan Street, Baltimore, MD 21207. Or you may call (301) 448-9460. We need your company name, contact name, phone number, city, state and billing rate.

Printing Ship To Labels from A/R

Question: I have been using the customer label print programs in Accounts Receivable for many years. I would like to print labels for the ship-to addresses. Is there an easy way to do this without having to hire a programmer?

Answer: Surprisingly there is, and I am sure the people who designed and wrote these programs had no intention of making it so simple.

In the BAS Accounts Receivable package the Customer Label Print programs are run from selector 32. There are three options. You may print labels for all customers on file (option 1), for a range of customers (option 2) or for selected customers (option 3). Within each option you may have the labels print "1-Up" or "4-Up", and you may print from 1 to 99 copies of the labels.

The main file used in each of these options is, of course, the Customer Master File, "CCSMS". Only the first five fields in the file are read and printed:

1. CUSTOMER NUMBER
2. CUSTOMER NAME
3. ADDRESS LINE 1
4. ADDRESS LINE 2
5. ADDRESS LINE 3

When you enter any of the label printing selections from the menu channel 3 is opened to CCSMS. (Channels 1 and 2 are not used. Don't ask me why: maybe the number 3 appeared in the programmer's horoscope on the day the program was written.)

Now look at the Customer Ship-To Address File, "CSHTO". This file is used in Order Processing to allow shipment to an address other than the billing address for the customer. In file maintenance the Customer Number and Ship-To Number in CSHTO are listed as fields 1 and 2, but in reality they are stored as a single field. Therefore the first five fields of CSHTO are essentially the same as CCSMS:

1. CUSTOMER NUMBER + SHIP-TO NUMBER
2. SHIP-TO NAME
3. SHIP ADDRESS L1
4. SHIP ADDRESS L2
5. SHIP ADDRESS L3

The only real difference between these two files is the Key Size. CCSMS uses a 6-character key (Customer Number) and CSHTO uses 8 characters (Customer Number plus Ship-To Number). For this reason we cannot effectively alter the range and individual label print programs without minor lobotomy work. But the printing of all customer labels involves a sequential read through CCSMS without regard to key size. With the help of IDOL's easy access to the menu drivers we can play games with this option. All we have to do is change the assignment of channel 3.

From any menu type in 799 <CR> (the numbers "799" followed by a Carriage Return). At the option line enter 2 for "Change" and <CR>. The Index we want to alter is 32, so enter 32 and <CR>. Press <F4> (to End) at the Field To Change question and <F2> (No) for Hard Copy. At the Index field press <F2> for next record (as opposed to <F7> for next in Fortune's standard file maintenance). This brings up the menu selection for "CUSTOMER LABELS (ALL)". At this point we want to change field 12, "Files To Open", so enter

12 <CR> and the cursor will position itself to the right of field 12. Now enter six spaces and CSHTO <CR>. This changes the opening of channel 3 from CCSMS to CSHTO when you exit the menu. (To change it back you would enter six spaces and CCSMS <CR>.) If you wish to make this a permanent change for your system you can also change field 10, "Selection Desc", to read "SHIP-TO LABELS (ALL)". There is really no harm in doing this. You can always print all customer labels by selecting the range option (number 2) and printing the range from first to last customer on file.

Once you have made these changes to the menu driver press <F4> to end at the Field To Change question and <F2> to answer no to the Hard Copy question. At the Index field press <CR> to go back to the option line and then <F4> to exit. From now on each time you select option 1 from the Label Printing menu you will get labels for all of your ship-to addresses rather than for all of your customers.

Using the IDOL Report Generator

Question: I use the IDOL Report Generator occasionally and find it somewhat helpful, but I wish it was a little more versatile. I often want to see the items selected in some order other than the way they appear in the file I am using. Nevertheless, I would like to generate a report from the Customer Master File to show how much money each customer has on order (field number 20, "On Order Amount"). My question is, does this field include the back order amount also?

Answer: Whoa! Back up a minute! IDOL reports print the fields in the order selected. Have you been selecting them in numeric order all these years? IDOL may not be the greatest invention since sex, but it is certainly more versatile than you may have thought.

The original Data Technology Industries BAS documentation for the On Order Amount for each customer says:

"[The Customer On Order Amount] contains the total value of orders for a given customer. This total includes back orders as well as open orders. The value contained in this field is added to [the] invoice amount outstanding to determine if a customer's credit limit has been exceeded.

"This total is increased during customer order entry and is decreased when the order is invoiced or deleted from the system."

In order for back orders to be processed for any customer the back order flag in CCSMS (field 11, "Back Order Ind") must be a single space. Back orders are not processed for any customer whose back order indicator is "A". During the order processing portion of invoice update the customer record is checked to determine if back orders are to be processed. If so, back orders are created for that customer for any line items which were not selected for shipment during order invoicing. Also, the On Order Amount for that customer is increased to include that back order amount. When back orders are released, a new order is created but the customer On Order Amount is not adjusted. If you wish to cancel the newly created order, you may do so and have the On Order Amount reduced accordingly.

This, by the way, is a good way to change or delete an order after it has been printed. Simply back order all of the line items during order invoicing, print invoices, then release the back order to create a new order. The new order can be adjusted or killed as needed.

We cannot overemphasize the importance of the Back Order Indicator in CCSMS. If you want a true picture of on order amounts you must be sure that all customers on file are eligible for back order processing. It would be a good idea to run an IDOL report for all customers showing the Back Order Indicator (field 11). If you find an "A" or two in this field your On Order Amount Report will not be accurate. In this case you must change any "A" back to a space, release all back orders and either invoice or cancel the orders created by back order release before running the report.

Concept Omega and ADD+ON

Question: Did you receive the notice that Concept Omega Corporation has sold the ADD+ON accounting software to its largest vendor and will no longer sell and service ADD+ON?

Answer: We certainly did. Aren't you glad we all jumped onto that bandwagon?

SOLUTION-IV Shipping Schedule

Question: Last month you mentioned that the SOLUTION-IV versions of Inventory Control, Order Processing and Payroll were "coming in early 1990". I think you had better check up on this. Some major design flaws in the file structures have been found. I bet these packages will not be released until late 1990 if that soon. - Steve Rosenfeld, Superior Computer Systems.

Answer: We were originally told that these three products would be released in the "first quarter of 1990", which for Concept Omega means sometime between December, 1989, and February, 1990. After speaking with Steve we contacted the Thoroughbred people and learned "they will not be released before March, 1990". Isn't this a fine kettle of fish? ADD+ON has been sold, BAS has been abandoned and Solution-IV has been delayed. I guess we can all play "worm" for the next year or so.❑

System Administration: Part 31

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

In the last issue, we completed the initial load of SCO Xenix on the Fortune 5000. Before we continue our discussion, we would like to take a minute to talk about the future direction of these articles.

When we started talking about the Fortune 5000, our intent was to give equal time to the two competing versions of Unix that can be used on the system - Interactive 386/ix and SCO Xenix. At this point, however, we realize that once you have made the decision to purchase the Fortune 5000, you must then decide which of these two versions of Unix to use. It is not an easy decision and there are advantanges and disadvantages with either choice. At this point in our discussion, however, we feel that it would be negligent to avoid discussing this issue - at least from what we have seen and experienced in the Unix marketplace.

Over the last couple of years, there has been an effort by at least two major groups to "standardize" Unix. One of these groups is headed by IBM and is called the Open Software Foundation (OSF). The other is headed by AT&T and is called Unix International (UI). Most of the major hardware manufacturers that provide Unix as an operating system have allied with one or both of these groups. Lately, these two groups have begun to work together in their efforts to standardize Unix.

The typical Fortune user purchased their system to do three basic functions - word processing, spreadsheet and/or accounting. To do these functions, the majority of you purchased Fortune:Word, Multiplan, and the Business Accounting System (BAS). The accounting system is supported by Thoroughbred Basic (previously known as SMC Basic). Many of you are now ready to purchase your "next generation" of computer to take advantage of the cheaper memory; faster and larger hard disk drives; larger and faster backup systems; faster clock speeds; and higher capacity flexible disk drives. If you were to go back and add up the cost of your hardware and the cost of your software, you would probably find the cost of the software by far exceeds the cost the hardware. Included in the cost of the software are things like training, conversions, custom modifications, upgrades and general support. With this substantial investment, it would be nice if you could just take your existing Fortune 32:16 software and install it on the Fortune 5000 or Fortune Formula. This would secure the substantial investment you have made in the application software you are using.

The problem is that you can't. In order to convert to new technology such as the Fortune Formula or the Fortune 5000, you must re-purchase your base software. This is not a problem that is unique to SCI/Fortune. Because Unix has not been standardized, other manufacturers and end-users are faced with the same dilemma. This blow is lessened somewhat because SCI/Fortune is providing free or substantially reduced software upgrades if you purchase the newer systems.

With the standardization of Unix, however, we can anticipate that this will not be a problem the next time you want to upgrade.

The UI group is attempting to make AT&T's System V Unix the standard while OSF is promoting IBM's version of Unix which is called AIX. For those of you that may not be aware, AT&T (Bell Labs) owns and licenses Unix. The OSF formed because they felt there would be a conflict of interest since AT&T not only owns and licenses Unix but also sells computer hardware and software. AT&T has indicated that they will not license Unix to any manufacturer that does not conform to its System V standard (SVID). By having everyone conforming to one standard, the idea is that the Unix software you buy today will be compatible with the systems of tomorrow.

As you have probably already realized, the two main Unix players in the PC XT and AT compatible (the Fortune 5000 is an AT 386 compatible) marketplace are Interactive and SCO. The question is which one do you choose?

Interactive has always been System V compatible. SCO Xenix has administrative elements of System V but until its recent release of SCO Unix did not totally conform to the SVID standard. SCO is also the first Unix licensee that has

been allowed to use the "Unix" name. With the release of SCO Unix, our personal preference is SCO for a couple of reasons.

1. Xenix has been around the PC marketplace for a long time. It was originally developed and sold by Microsoft. Many of the computer manufacturers used it as the multiuser operating system of choice. Therefore, it had quite a large installed base before it was purchased by Santa Cruz Operations (SCO). Most manufacturers still use SCO Xenix as their primary Unix offering. We teach Unix courses each month and have yet to run into anyone using Interactive 386/ix in the small business environment. Many of our students, however, are using SCO Xenix.

Within the last couple of months, SCO released SCO Unix. Since SCO Unix and Interactive are SVID compatible, then software should theoretically be interchangeable between the two. We have in fact loaded Fortune:Word on SCO Unix so the claims appear to be real. SCO will continue to sell and support SCO Xenix and is offering an upgrade to SCO Unix at a reduced price. Since SCO has been and continues to be the dominant player in the Unix PC marketplace, it seems like a good choice.

2. The last word we had was that Interactive does not provide direct support for their product. SCO, for a fee, will provide direct end-user support. This means that you have the option of getting support through a Value Added Reseller (VAR) or directly from SCO. Response is best from your local support person, however, it is nice to know that you can go directly to the source if you have problems. VAR's are in the same position. If we have a problem, we can contact SCO directly. With Interactive, we must must rely on the distributor. Our experience in the Unix marketplace indicates that you are more likely to find experienced support people for SCO than for Interactive.

3. In our opinion, the documentation for SCO is superior to the documentation for Interactive. In general, Interactive provides standard Unix System V documentation, which isn't the best in the world.

4. SCO provides more standard drivers for peripherals (tape drives, hard disk drives, serial port boards, etc.) than Interactive does. This may be a factor as you look to upgrade your Fortune 5000 in the future. Our experience has been that there can be problems if the drivers for these devices are provided directly by the manufacturer. Problems such as these are most obvious when you upgrade your operating system to the latest and greatest release.

5. If you looked closely at our previous articles on Interactive and SCO, you see that the way the operating system resides on the hard disk is different for each. Basically, SCO coexists with other software on the system. Interactive takes over. If you remember, we mentioned that the first thing Interactive does is to remove everything that was previously installed on your hard disk including DOS. In addition to Interactive, you are only allowed to have two other operating systems. In our case, for example, we wanted to load Interactive, SCO Xenix, SCO Unix and DOS on four separate partitions and could not do this with Interactive installed. SCO on the other hand installs where you tell it to install and does not effect other partitioning on the hard disk. For those of you that are end-users, this may not be a factor but it is worth mentioning.

6. SCO provides versions of Unix for the XT, 286 compatibles, and 386 compatibles. Interactive's version of Unix is for the 386 only. This might be important for those of you that want to set up a system at home that will run the same application software as your system in the office. Since many of you already have an XT or 286 system in the office or at home, you would not be able to do this if you use Interactive.

7. If you look at the software catalogs for Interactive and SCO, you will see that SCO provides more software options. Both operating systems provide VP/ix which allows DOS to run concurrently with Unix. The major software developers in the DOS world are increasingly porting their software to Unix. This includes products such as Lotus, AutoCad and DBase. Again, if both SCO and Interactive are SVID compatible, it should mean that these products will run on either version. On the other hand, it is our understanding that SCO Xenix application software will run under Interactive. These are the kind of issues you need to question when deciding which operating system to choose.

8. SCO Xenix is closer to For:Pro in functionality than Unix System V since both Xenix and For:Pro derived from the same version of Unix. In many cases, this makes system administration of SCO Xenix easier since you are already familiar with many of the concepts. While the basic Unix commands remain the same, transitioning to either SCO Unix or Interactive will be much harder administratively. If this concerns you, the best strategy might be to go to SCO Xenix first and then upgrade to SCO Unix. This is an easier decision if you consider that the software you select for SCO Xenix will also run under SCO Unix. This is not an option, however, if you want to use Fortune:Word since Fortune:Word as of this writing will not run under SCO Xenix even though SCO Xenix is offered by SCI/Fortune.

We expect that many of you out there will disagree with what we have presented here. Like many other computer issues, there are clearly two sides to any argument. In fact, we welcome comments from those that have a different opinion. It would be helpful to those of you that are looking at the Fortune 5000 to read about those opinions in the next issue. Our feeling is that the more information you have, the better long term decision you will make.

In any case, we have come to the conclusion that writing articles that address For:Pro, SCO Xenix, SCO Unix and Interactive is more than we have the time or the resources for. The requirements for our Fortune 5000 are such that we can no longer have a dedicated Interactive partition that dictates

what we can do with the rest of the system. Therefore, our future articles will be geared only to For:Pro and SCO Xenix. When SCO Unix becomes more predominantly used, we will write about that as well. In the meantime, we leave it to /u/ fortune to fill in the gaps for those of you that are using Interactive 386/ix.

INSTALLING SCO XENIX (continued)

12. As we did with Interactive, we now need to "fine tune" the system parameters. Just like Interactive, the SCO kernel is configured for 2MB of memory. Since we have 4MB in this system, we need to "re-link" the kernel to allow for optimum performance of all of the memory we have. Remember the "kernel" is the heart of the Unix operating system and is resident in memory when the system is booted. There is a special program called "configure" that is used for this function in SCO. SCO provides a table in its documentation of what each of the parameters should be based on the amount of memory you have. To run the "configure" command, we login as "root" and enter:

```
# cd /usr/sys/conf
# configure
```

The whole procedure would take too long to present here. Since the procedure is well documented in the SCO manuals, we suggest that you follow the instructions and use the table provided as a guideline. These procedures are found in a chapter called "Tuning System Performance" in the "System Administrator's Guide". The important point here is that you realize that even though you install more memory, the system does not know about it until you use "configure".

13. Just like we did for Interactive, we need to run the procedure so that SCO Xenix knows about our tape drive. The SCO manual gives you the standard interrupt, DMA, and address to use for the type of tape drive you are installing. For example, the manual indicates address 338, DMA 1, and interrupt 5 for the Wangtek controller. Telling SCO Xenix that the tape drive is there is done using the "mkdev" utility. Using this utility, we simply tell the system what kind of controller we are using (Wangtek is a type "3" controller), and the address, DMA and interrupt we have used. The "mkdev" command to run is:

```
# mkdev tape
```

After entering your information, the utility asks whether you want to "re-link" and use the new default kernel. Normally you will answer "yes" to both of these questions. Once the system is rebooted, you should be able to use the tape drive. In the case of a normal size cartridge tape unit, the device name is "/dev/rct0". Mini-cartridge tape units can also be installed and the device name is "/dev/rctmini". For the normal size tape unit, there is a "tape" command that can be used to retension, rewind, erase, etc. the tape. The normal sequence for testing the tape unit is:

```
# tape reset
# tape rewind
# tape status
```

If all is well, then the "tape status" command should show "beginning of tape". If not, then you need to check your address and interrupt to insure no conflict with other boards on your system.

If the tape unit checks out OK, then we are ready to backup what we have installed so far (including the kernel changes we made). The device name for our tape unit is "/dev/rct0". You have the option here of using standard Unix commands (such as "tar" and "dump") to do your backup from the Unix prompt. If you feel uncomfortable doing this, you can use the "sysadmsh" menu system to do the backup. This menu system functions the same as the "System Utilities" and "System Administration" selections on the For:Pro Global Menu. The following "dump" command would backup the "root" partition:

```
# dump 0ufk /dev/rct0 150000 /dev/root
```

When the process is complete, our entire system which has only one partition on it will be backed up. Note that the "k" option specifices the capacity of our tape and is expressed in kilobytes. The 150000 is for a 150MB tape drive.

14. Our next task is to set the printers on the system. Remember that on the Fortune 5000, there is one parallel port for a parallel printer and at least two serial ports. If you purchased the "HUB" card, you will have additional ports that serial printers can be connected to.

Before we can configure a printer, we must stop the lp scheduler. Once again, we can use the "mkdev" command for configuring the printers:

```
# mkdev lp
```

This command calls the "lpinit" command. You will get one of two messages - either that the scheduler has been stopped or that the scheduler is not running. In either case, we can proceed with printer configuration.

The utility will then give you the following option menu:

```
1. Add a new printer
2. Remove a printer
3. Reconfigure an existing printer
4. Assign a default printer
5. Print lp status info
```

Since we are initially adding a printer, we selected option 1 and were asked whether we were installing a parallel, serial or remote printer. We selected "serial" since we are connecting the printer to one of the serial ports. We were then given a list of the standard device names that were available and selected "tty2a" which is the name for the second standard serial port.

Note the following standard device names:

/dev/lp0 - 1st parallel port
/dev/lp1 - 2nd parallel port (if used)
/dev/tty1a - 1st serial port (comm 1)
/dev/tty2a - 2nd serial port (comm 2)

Remember that the "HUB" is the 6-port board that can be added to the system for moreserial ports. If this port board is added, the list of device names for it will be included here.

We were then asked to name the printer or use the default name "printer". We entered "fujitsu" as our printer name. Next we were asked to select the model of the printer from the list of standard models. We chose "dumb serial or parallel" as our model type. Last, we were asked if this was the default printer. Here we answered "yes" since it is the only printer on the system.

Note that SCO Xenix uses the xon/xoff protocol. In order for a serial printer to work correctly, it must be set for xon/xoff and the following line needs to be added to the "/etc/rc.d/8/userdef" file:

```
(stty 9600 ixon ixoff -ixany; cat > /dev/null) < /dev/tty2a&
```

You would substitute the "/dev/tty2a" portion of this line with the device name of the serial port you are using.

Be sure the port you are going to use for a printer is disabled for logins (see item 15 below). After exiting the "mkdev lp" command, we ran the "lpstat -t" command to see the status of our printer and received the following output:

```
scheduler is running
system default destination: fujitsu
device for fujitsu: /dev/tty2a
fujitsu accepting requests since Aug 5 23:27
printer fujitsu is idle. enabled since Aug 5 23:27
```

The status of all printers that have been defined will be displayed when this command is run. The "scheduler" keeps track of print jobs. If any print jobs were in the "queue" waiting to be printed, the status of each print job would also be displayed. The scheduler is automatically started when we exit from "mkdev lp". If you remember, the same "lp" program was used with Interactive also. We will spend more time discussing the printer commands in a later article.

Testing the printer is the same as we described in Part 29 for Interactive.

15. One more job is left to be done as part of our initial installation procedure - setting up a terminal. Since we put the printer on the second serial port, we are going to put a terminal on the first serial port which is "/dev/tty1a".

In For:Pro, we can use "S2" (System Management), option 39 (Define Device Connections) to set up one of ports. Normally, in many versions of Unix, you can set up a printer, modem or terminal port by editing the "/etc/ttys" and "/etc/ttytype" files. For example, use the following procedure to define a 9600 baud terminal port with a Fortune terminal:

a. Edit the "/etc/ttys" file to show the correct baud rate. In our case, for the tty1a entry, our line would look like this:

```
1mtty1a
```

The "1" means it is a login device and the "m" means 9600 baud (see the /etc/gettydefs file for all of the codes that can be used). In SCO Xenix, a non-login port can be changed to a login port by using the "enable" command and a login port can be disabled by using the "disable" command.

b. Edit the "/etc/ttytype" file to show the correct terminal type. In our case, we enter "fos" for the terminal type. This is a standard entry in SCO Xenix for the Fortune terminal:

```
fos     tty1a
```

If you want to change a port from non-login to login and you want the system to recognize the change, simply enable the port:

```
# enable tty1a
/etc/ttys updated
```

If you want to change the baud rate on an enabled port, edit the "/etc/ttys" file then disable and enable the port again.

16. We have finished with our system for this session and are ready to shutdown. This may be done by "root" by entering the command "shutdown" or "haltsys". "haltsys" is an immediate shutdown. You should insure there are no users on the system if you shut the system down using this command. Otherwise, you can use the "shutdown" command so that users are warned about the impending shutdown and have a chance to save their work and log off.

Before we close for this issue, there are a couple of things we want to pass on to you:

a. The Fortune 5000 "console" is a PC monitor that uses a standard PC keyboard. According to the Technical Bulletin we received with our system, you cannot use the console for Fortune:Word.

b. We have experienced problems with using the numeric keypad on the older style Fortune terminals. These keys have been programmed to give out a control sequence that is not the actual key you are depressing. For example, the number "1" on the keypad puts out a ^A1. These sequences are interpreted on software that was written for the Fortune 32:16 but not third party software (such as Thoroughbred Basic) on the Fortune 5000. We will be checking with SCI/Fortune on this problem to see if your existing Fortune terminals will be able to be used with application software (other than Fortune:Word) running under SCO or Interactive on the Fortune 5000.

In the next issue, we will continue our discussion about the initial setup of SCO Xenix.❑

Software For The Fortune 32:16 And Formula

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

W-2 LINK ($395.00) - designed for companies with over 250 employess who must report W-2 payroll information to the Social Security Administration (IRS) via magnetic tape or diskette. Automatically takes information in the Business Accounting System (BAS) Payroll module and puts it onto diskette in the format required by the IRS. Also available for PAC software. also.

1099 LINK ($295.00) - this product produces Form 1099's required for submission to the IRS and is an extension to the standard BAS Payroll module.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

WESTERN LINK ($195.00) - provides instruction on how to use your Fortune for sending/receiving telex messages using Western Union's Easylink. Can replace your telex! Fortune ITE or Handshake software required.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

FINANCIAL LINK ($295.00) - passes BAS Income Statement and Balance sheet to Multiplan or UltraCalc. Stores and instantly reprints these statements for current/previous period without sorting.

FORTUNE SOFTWARE AND HARDWARE SUPPORT SERVICES

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News From SCI/Fortune

Fortune:Windows: Now Available For The Fortune 5386

SCI/Fortune is pleased to announce the availability of our popular Fortune:Windows software application, version 1.3, for Fortune 5386 products running the new INTERACTIVE 386/ix operating system, version 2.0.2.

Fortune:Windows 1.3 is a sophisticated windowing software package providing Fortune users with simultaneous access to and integration of other applications. Users can move quickly between applications, transfer data from one application to another, and process multiple interactive tasks concurrently - all from one terminal!

Fortune:Windows is the ideal tool for coping with the fragmented nature of tasks in the office environment, resulting in quick response for users who need to monitor and access a number of processes. For example, if in the midst of generating a word processing report a number from a spreadsheet is needed, a user no longer has to exit through numerous screens and call up still more - then reverse the process to return to the original screen. Now a user can search a file while finishing a report, while performing a critical spreadsheet calculation, while retrieving an address, while printing a letter - all on the same screen!

Among the features within Fortune:Windows are the following, permitting the user to:

1. Open up to eight windows on one terminal
2. Name windows for easy reference
3. Create full screen windows
4. Select from six predefined window sizes and locations
5. Create new window sizes and locations
6. Relocate a window on the screen
7. Control the size of the display area of a current window
8. Save and reproduce a screen exactly as it is viewed
9. Copy data ("cut and past") between applications

To customize the work environment, a Fortune:Windows user may wish to select border intensity to distinguish the current window, and to define which keys will be used to perform specific functions. The user also has the ability to customize windows so that they automatically open when logging on the the system or initiating Fortune:Windows.

During all Fortune:Windows processes, the windows are monitored logically. A pop-up table allows the user to instantly identify the current window, monitor the number of open windows, display names of windows, and determine which windows are zoomed.

With improved access to information, single screen simultaneity of tasks, integration of applications, ease of use, and significant productivity value, Fortune:Windows is an indispensable enhancement to SCI/Fortune's line of superior office automation solutions.

Fortune:Windows 1.3 can be installed and used only on SCI/Fortune systems running the INTERACTIVE 386/ix operating system release 2.0.2 or later, with either host based TCP/IP or X11.3 Windowing System installed. If neither of these modules is a feature of the user's current operating system package, the user can now order the Host-Based TCP/IP module separately. Fortune:Windows can be used only with Fortune terminals.

Fortune:Windows is targeted for work groups in small businesses and for departments in larger corporations. It provides the versatility and responsiveness needed in productivity tools by these users. With release 1.3, managers, salespeople, technicians, professionals, executive secretaries, bookkeepers, and word processors all benefit from using Fortune:Windows. As an "activity integrator," Fortune:Windows offers features that almost everyone will find essential to their daily routines. Fortune:Windows' ease of use, competitive features, and significant productivity value, combined with the stable environment of SCI/Fortune hardware, provide users with the capabilities to process information extremely efficiently.

Fortune:Windows is also the perfect tool for software developers who have used multiple terminals to perform tasks or to view data simultaneously. With Fortune:Windows, multiple tasks can be accessed and monitored from one terminal. For example, data received while communicating with another system through one window can be copied into a Fortune:Word file running in a second window.

For current Fortune:Windows users who may be considering a move from our Motorola based hardware to the Intel based Fortune 5386, the availability of Fortune:Windows on the 5386 offers additional incentives. Those users are already

familiar with the productivity benefits Fortune:Windows provide, and would need no training to begin using the application on new Fortune 5386 hardware. Further, if Fortune:Windows is ordered on the same purchase order as a new Fortune 5386, our migration software price applies - a savings of over $200 on the suggested list price. Migration software does not include base documentation, and certain rules apply when ordering. Please contact your dealer or SCI/Fortune for more information.

Auto Parts Management System A Success

Dear Mr. Bozeman,

I am writing to thank you and your company for the efforts made in regards to marketing the SCI Fortune computer system in conjunction with the OBS Auto Parts Management System. Mr. Paschal has been successful in interesting several computer dealers in either adding the Fortune line or in combining the OBS Software with their existing Fortune marketing plans.

I am currently spending the week with a company in Denver, an existing Fortune dealer, kicking off the marketing of the hardware/software combination. We have made several promising proposals and I feel certain that this company will succeed in the Denver area with this vertical market.

I am looking forward to working with more such dealers in the near future, particularly in the mid-states area. I might add that our own system sales recently have included Fortune equipment and that we are very pleased with the hardware and support we are receiving from your Dallas office.

OBS is expecting a profitable relationship to continue in the future.

Sincerely,
Jim S. Owens

The SCI/Fortune Basic Workstation

The Basic Workstation version 4.1 consists of a display terminal and keyboard which provide a versatile addition to a professional environment. The Basic Workstation features customized keyboard and character displays. SCI/Fortune terminals are typically used with Fortune 32:16 series systems, Fortune Formula systems, Fortune 5000 systems, or IBM PC, XT, AT, or clone systems.

The display unit is available with either green or amber phosphor. It is joined to the low profile detachable keyboard by a coiled cable with modular RJ-11 connections. The Basic Workstation can be used in either of the following ways:

1. In On-line mode as a terminal on a Fortune system, optionally driving a printer or plotter,

2. In Local mode as a standalone workstation, for testing teletext sequences or manually operating a printer or plotter

In the Fortune emulator mode, and when communicating with a host system, the Basic Workstation implements a subset of the Videotext/Teletext North American Presentation Level Protocol Syntax standard, X3.110-1983, also known as NAPLPS. The Basic Workstation uses NAPLPS commands and character sets, with ASCII codes incorporated in the NAPLPS specifications.

Features include:

1. Support for VP/ix (requires VP/ix term file)
2. 14-inch amber or green phosphor screen displays
3. Print Screen configurable for 7-bit ASCII-only printer or 8-bit IBM compatible printer
4. Self-test diagnostics which run each time the unit is powered on
5. Baud rate selections from 110 to 38400
6. A screen display of 80 or 132 columns, and 25 or 33 lines (application dependent)
7. Display attributes such as single underline, double underline, bold, and overstrike
8. Display tilt and swivel
9. Configuration menus in English, French, and German
10. Fifteen possible standard national keyboard mappings and one programmable mapping
11 Software defined "soft" character fonts
12. Control of screen display factors such as reverse video, cursor size, and cursor blink
13. Adjustable bell and keyclick volume
14. Three different scrolling speeds
15. Support for five popular transmission protocols on both the host and auxiliary RS-232C ports
16. 128 character available for programming
17. Separate brightness and contrast control knobs
18. Low profile Basic Workstation keyboard with adjustable feet
19. Scroll Lock function

In addition to the domestic (U.S.) keyboard, international keyboards are available for the following countries: France, Germany, United Kingdom, Switzerland (French), Switzerland (German), Sweden/Finland, Denmark, Italy, Spain/Portugal, Canada (French), Netherlands, Turkey, Greece, and Norway. The display unit itself is identical for all countries.

New Workstation PROM Kits Offer VP/ix Capability

SCI/Fortune is pleased to announce the availability of Basic Workstation PROM Kits which can be installed on older SCI/Fortune Basic Workstations to provide VP/ix capability when used with our Fortune 5386 systems.

Two PROM Kits are offered: the 3.9 version and the 4.1 version. The 3.9 PROM Kit should be selected to upgrade

Continued on Page 20

/u/help - Tape compatibility issues

Some issues with Tape Backup Systems

Tape backups are a wonderful invention. They don't perform miracles, like backing up a complete system in 2 minutes, but they do go relatively quickly, and usually make backing up a painless process. Then when it comes to restoring a system that has been lost, I guess they do perform miracles, because they save your information, which is almost always priceless. In this article we'll be discussing some of the ins and outs of tape systems, but before we get any further we have discovered a relatively pressing problem that we'd like to take care of immediately.

Hopefully all of our readers know how important it is to go through the complete shutdown procedure before turning a Fortune computer off. If you don't shutdown properly, you risk losing everything on your hard disk. However, if the system has a tape backup unit, and there is a tape in the drive with the "door" closed, the system will hang during the shutdown process on "Software Shutdown Starting". We view this as a serious problem because the system is never properly brought down.

We have devised a fairly simple solution to this problem -- we altered the shutdown program so that it reminds the user to remove the tape before continuing with the shutdown procedure. Figure 1 lists the section of the shutdown program that has been modified, with the new lines displayed in a lighter shade. It's probably easiest to edit the program with the sc or screen editor.

In order to make the changes, log in as root. Then type cd /etc to change to the etc directory. Type cp -tous shutdown shutdown.hang. This will copy the shutdown program to shutdown.hang, just in case the original program is damaged. Now use sc to edit shutdown. Once it's on the screen, insert the lines highlighted in Figure 2. Exit and update the file, and you should be all set.

Tape compatibility between various Fortune computers

In the past several months we have had the good Fortune to have use of a Formula 4000 and Fortune 5000 in addition to our trusty Fortune 32:16 which we recently upgraded to an SX70T. Naturally it has become necessary to transfer data between the different computers. Although it would be great if this was as simple as taking a floppy or tape and walking it from one system to another, it turns out to be not quite that straightforward. We'll try to summarize what is possible here.

Actual programs, such as **Fortune:Word**, **Multiplan**, or **BAS Applications** cannot be transferred between any of the machines that use different microprocessors. The Fortune 32:16 and SX use a Motorola 68000. The Formula 4000 and 8000 use a Motorola 68020, and the Fortune 5000 uses an Intel 386 chip. Although there are specific versions of most programs for each family of computer, the actual programs cannot be cross-installed.

Floppy disks and most data files are interchangeable between the Fortune 32:16/SX and the Formula 4000/8000 computers. There isn't any way to directly use a 32:16/SX/Formula disk with a Fortune 5000, although we have used our **fxfer** program to transfer files via an AT computer or a separate DOS partition. At this time, **fxfer** does not work under VP/IX.

Streaming tape compatibilities

A 20 meg tape can be read in a 60 meg drive on a 32:16/SX computer. It is not possible to create a 20 megabyte tape with a 60 meg drive. If you have a 32:16/SX and a Formula computer, it is possible to read and write tapes, however you do have to make some adjustments. The usual way to accomplish this is to read and write tapes as you normally would on the 32:16/SX. On the Formula computer, you must specify a special tape device called rst02. Normally the tape device used is /dev/rst00. To interchange data with a 32:16/SX, you'll need to use /dev/rst02. In order to do this, you have to run **far** from the command line, or alter the **far** menus. For instance, to restore a 32:16 tape onto a Formula, you might type:

```
far -Restore -Display -keepset_number=1 -far_file=/dev/rst02 /u
```

If this doesn't work, you might try issuing the command:

```
st unlabeled read rewind
```

before using the **far** command.

A Fortune 5000 can read the first 6 megabytes or so of a 60 meg tape created in a Formula computer. Apparently it can only read the first 6 megabytes because of incompatibilities between the 60 and 150 meg drives. It is not possible to create a tape on a Fortune 5000 that can be read on either Formula or 32:16/SX computers. Ordinarily, a Fortune 5000 cannot read a tape created on a 32:16/SX. However, Dave Vantine of Vantine Business Systems recently discovered that there is a hardware jumper on the 60 meg drives in the 32:16/SX that will allow them to work normally with the Formula computers and also let the Fortune 5000 read at least the first 6 megabytes. The jumper is the CC jumper on the tape controller board. When this jumper is added to the controller, the tape drive gains the added capabilities described above. Unfortunately, once this has been done, the drive will not read any tapes it had created earlier. This won't create a problem if you are just starting to use a tape drive, but it will if you ever need to restore from an old tape. One solution might be to add an external switch to the computer which will either open or close the CC jumper.

Use only the right cartridges in Tape Drives

The 20 megabyte drives use the DC300 cartridges. 60 meg drives require the DC600A cartridge. We have found that the Fortune 5000 150 meg drive requires a DC6150 cartridge. Although it appears that the DC600A tapes work with the Fortune 5000, we have encountered problems when we try to restore from one of these tapes. We strongly encourage users of the 5000 to use the DC6150 tapes.❑

Josh Lobel

Figure 1 -- Shutdown modification

```
PATH=/bin:/usr/bin:/usr/ucb:/etc
echo='printstring /usr/lib/string/shutdown.XX'

case "`tty`" (
/dev/console) ;;
*) $echo GOTO_CONSOLE
          exit 1 ;;
)

echo "Press RETURN when there is no tape in drive, or lever is pushed to LEFT"
read x

if cp -o /dev/null /dev/null >/dev/null 2>&1
```

What's been happening in Boston

Reports of what's been keeping us busy -- this month hard drives and preventive maintenance top the list

This is the start of a regularly appearing column that highlights some of the more interesting challenges we've faced here at The Cambridge Consortium. We suspect that our experiences might overlap those of some of our readers, and that it will be helpful. This month we'll discuss several preventative maintenance procedures, and some hard disk issues with the Fortune 5000.

Some Recent Experiences with Fxfer

If you've been reading **/u/fortune news** recently, you've probably read about our **fxfer** product. **fxfer** is used to copy files back and forth between AT compatible computers and Fortune 32:16/SX/Formula computers. We're very pleased with its usefulness, as are our customers. Here's an update on new developments.

We're just about done with the menu version of **fxfer**. This program does the same things as the basic **fxfer**, but also includes a menu interface that isolates the user from the command line. With the menu version, we would expect even the most novice user to be able to use **fxfer** with ease.

We're even more excited about a file translation program we're finishing up which will translate **Fortune:Word** files into **Word Perfect** format and back again. The program will support almost all of the formatting features of **Fortune:Word**. This will allow users to share their documents with DOS users and have DOS users share their **Word Perfect** documents with **Fortune:Word**. No computer is an island. We anticipate that this will be very helpful to many of our readers. If there is interest in conversion to other word processing formats, it may be possible to add them as well.

Some readers have tried to use **fxfer** on a IBM PS/2 computer with an external 5 1/4" drive. In order to do this, it's necessary to specify drive 1 rather than 0 when giving the **fxfer** command. For instance, to extract files from a floppy, rather than typing fxfer xvF 0, you would type fxfer xvF 1. The use of the 1 tells **fxfer** to look to drive B for the files.

If you think **fxfer** might help you with your computing needs, please give us a call at 617 894-6900.

MAKE A COPY OF YOUR CONF BLOCK!!!!

What was that, you say? If you don't know what a conf block is or why it's important, please read to the end of this paragraph because this message is important for everyone. Every hard disk on a Fortune 32:16/SX/Formula has what is known as a configuration block or conf block. (Fortune 5000's do not have the same type of conf block.) This is a special place at the very beginning of the disk that tells the computer about how many users are on the system, how much swap space is used, etc. It is crucial to the operation of the hard disk. Unfortunately, it is sometimes inadvertently destroyed. This makes the disk unusable with messages like "Drive hd0 has gone bad, will not accept any more requests". Fortunately, if you have a copy of your conf block this is a very simple thing to repair, and all of the data on the hard disk will be intact.

We're even more excited about a file translation program we're finishing up which will translate Fortune:Word files into Word Perfect format and back again.

To make a record of your conf block, type the following:

```
rdconf /dev/hd00 | lpr
```

which will print the conf block out on your printer. A hard copy of the conf block is always a good idea in case your system is totally down.

An actual copy of the conf block can be created by typing:

```
rdconf -b /dev/hd00 > /tmp/ourconf
```

Regardless of what else you do with this information, it is vitally important that you have it for yourself or for your technical support vendor. If you have more than one hard disk, you can repeat the same procedure by changing the hard disk numbers, e.g. the second drive is hd10, the third is hd20. Make sure to use different names for the output files in the second rdconf command, e.g. /tmp/ourconf1 /tmp/ourconf2.

If you want to be very fancy, you can copy your conf block onto the first disk of your coldboot set by inserting the floppy into the drive, mounting it (mount /dev/fd02 /f), and then use the command:

```
rdconf -b /dev/hd00 > /f/ourconf
```

Unmount the disk with umount /dev/fd02, and you'll have your conf block on the cold boot disk.

Trouble bringing the system up

We had a client recently who was having trouble when she turned her com-

puter on. It would frequently take three or four tries to get it to boot, rather than just flashing the "Something's Wrong" message, or showing the picture of the computer. Sometimes it would just get stuck on number 2. This indicated to us that the system wasn't finding the special boot information stored on the hard disk. We found that by remaking her conf block, we were able to solve the problem. We did it as follows:

Login as root.

Make sure that you have a copy of the conf block for the hard disk before starting. We used

```
rdconf -b /dev/hd00 > /tmp/ourconf
```

to create it.

We were suspicious of the "low-level" formatting of the disk drive so we decided to reformat the one track of the disk where the conf block sits. This is done with a simple command that can have disastrous results if typed incorrectly, so PLEASE BE VERY CAREFUL if you attempt this. The command is:

```
format -c /tmp/ourconf -t 0 -h 0 /dev/rhd00
```

The `-t 0` and `-h 0` tells the computer to just format track 0 head 0. If those are left out, the entire drive will be formatted and all of your data will be lost. After this command is typed you should very quickly get a # sign.

Next I remade their conf block by typing:

```
mkconf -c /tmp/ourconf /dev/rhd00
```

Again, I quickly got a pound sign, and all of their problems were solved. Of course, if I hadn't had a copy of their conf block, it would have been a much more difficult and riskier proposition.

Fortune 5000 -- Adding a second hard disk -- and SAVE YOUR SETUP

One of our clients recently needed to add a new hard disk to their Fortune 5000. As you may be aware, one of the assets of the Fortune 5000 is that it is an "industry standard" computer, and thus can accommodate a wide variety of hardware. They elected to install a Miniscribe 3085 drive, which is a 70 megabyte high speed drive. We thought the installation would be relatively painless, which it was -- relatively. We made some mistakes, and needed some information which we thought we might pass on.

It's vitally important that you keep a copy of your conf block -- one day it may save all of the information on your hard disk

In most 386 computers, including the Fortune 5000 line, there is a BIOS which knows about a variety of hard disk drives. The first problem we had was that our version of the Phoenix BIOS didn't know about the Miniscribe drive and wouldn't allow us to enter information about it. Our version of the BIOS is XXXXXXXXXXX. If you don't have a later revision level, you'll have to get one before you can install a Miniscribe 3085. This drive is a little unusual because it has over 1024 cylinders. Most other drives will install without the new BIOS. The new BIOS doesn't include the 3085 either, but Type 46 can be customized to include the correct information about number of heads, cylinders, etc.

(Note: As you go through the process of installing the drive, you will get messages about hard disk problems until the new drive is completely installed.)

In order to get into the SETUP program, just press some keys while the system is going through the memory test while it's booting. You'll get a message that says keyboard error, and then you'll be asked if you want to run the SETUP program. Hit whichever function key it asks for to run the SETUP program. You'll be prompted for the date and the time, and then the hard disk type and floppy type. It's worth going through this procedure for safety's sake mainly to record which drive type you have in your machine and how much memory is installed. The drive and memory information is stored in special place in the

computer called CMOS. This special chip is constantly powered by a battery in the computer, that sooner or later will die. At that time, you'll have to replace the battery and tell the computer about what hardware is installed, and if you don't know the drive type, the problem will be that much more complicated. (Although by no means impossible.) Anyway, if you're adding a hard drive, you'll need to change where it says NONE for drive to the suitable number. (If you don't know what number is correct, you can look at the information on the number of heads and cylinders which can be displayed on the screen. If that doesn't help, you can probably get information from the drive manufacturer.)

When you hook up the drive, be very careful about the cable connections. Make sure that the pin 2 on both ends of the connectors are going to the correct side on the drive and on the controller sockets on the motherboard. Usually these will be oriented in the same way as they are on the first drive. The 20-conductor cable needs to go on the spare 20-conductor spot -- not the 34-conductor space nearby. Also, the Fortune 5000 wants to have both drives set to the second drive (which is sometimes 1 if the numbers start at 0). Most drives come with the jumper in the 1st position, so you'll have to move it before anything can be done.

The next big mistake we made was that we didn't "low-level" format the drive. The low-level format is necessary before any operating system can be installed on the drive. Typically hard drives will come with a utility like Disk Manager which can be used to do the low-level format, although you'll need to do this by booting the computer with DOS. Unless you're very confident, you should also do a backup of your main drive before you begin this procedure. Make sure to select the second drive before you do the low level format. If you're unsure whether the drives start at 0 or 1, you can always err on the high side, e.g. pick drive 2. If it can't find that one, it will tell you and you can change to drive 1.

Once the setup information is correct, the cables are all correct, the drive is low-level formatted, etc. you will be able to reboot the computer under UNIX. If you are running Interactive 386/IX, you can use the sysadm program and choose the disk management option to format the disk for UNIX and install it. When you're asked if you're using controller 1 or 2, you'll choose 1, but make certain you choose the right hard disk so you don't erase your main drive. The program will prompt you through the whole process until the drive is actually mounted and usable. When asked for a name for the disk, use whatever directory you'll be mounting it as, e.g. /h, or you'll get some funny messages when it tries to mount.

Good luck with this process. It's always nice to expand disk space.❑

Josh Lobel

12 Years M.T.B.F. for SCI Memory Units Onboard Voyager Spacecraft

In mid-1977 NASA launched two identical Voyager spacecraft from Cape Canaveral, Florida, toward the outer reaches of the solar system.

Voyager 1, having completed missions to Jupiter and Saturn, continues outward. Eventually its instruments may be the first of any spacecraft to sense the heliopause - the boundary between the end of the sun's magnetic influence and the beginning of interstellar space.

In August of 1989, Voyager 2 completed a tour of the four giant outer planets.

Plated-wire computer memory units designed and manufactured by SCI are integral to the control systems of both spacecraft.

According to Bob Kearney, SCI Voyager Program Manager, during the mid-70's SCI built and shipped 12 NDRO (No-Destructive Readout) memories for Voyager. Two SCI memories are installed in each spacecraft's Computer Command Subsystem which performs overall control of the vehicle; two are also used in each spacecraft's Attitude and Articulation Control Subsystem. SCI also shipped four spares. All units have functioned reliably throughout the 12-year mission.

The Voyager spacecraft was developed and built by the Jet Propulsion Laboratory (JPL) at the California Institute of Technology in Pasadena. The project is funded by NASA. The mission was planned to take advantage of a rare geometric arrangement of the outer planets in the late 1970's and 80's. This layout of Jupiter, Saturn, Uranus, and Neptune, which occurs about every 175 years, allows a spacecraft to swing from one planet to another without need for large onboard propulsion systems; the flyby of each planet bends the spacecraft's flight path enough to deliver it to the next destination.

JPL communicates with both spacecraft through a worldwide network of deep space tracking stations located in California, Australia, and Spain.

Each Voyager carries instruments for 11 scientific experiments, and the program was originally intended to study only Jupiter and Saturn. Success of the prime mission led to authorization of a flyby of Uranus, and subsequent authorization of the Neptune flyby which began in June 1989 and spanned four months.

Voyager 2 encountered Uranus in January 1986, returning significant photographs and other new data about the planet, its moons, magnetic field, and rings. The flyby produced unprecedented photographs of and scientific data about the little-known planet, including 10 new moons and surface detail of the Uranian moon Miranda. "This planetary exploration coup was achieved with a spacecraft that already had operated more than double its projected lifetime and which continues to function satisfactorily on the initial stages of the trek to Neptune. The mission has set a benchmark in spacecraft and system reliability that should become the standard for the entire aerospace industry." (**Aviation Week and Space Technology**, March 1986)

The Voyagers have greater independence from Earth-based controllers and greater versatility for complex sequences of scientific measurements than any of their predecessors. These capabilities result from three interconnected onboard computer systems: the AACS (Attitude and Articulation Control Subsystem); the FDS (Flight Data Subsystem); and the CCS (Computer Command System).

Operating from "loads" of instructions transmitted earlier, these computers issue commands to the spacecraft and the onboard science instruments and react automatically to changes in operating conditions. The SCI-built computer memories in the AACS and the CCS help to store the "loads" of information, playing a significant role in successful command and control of the Voyager vehicles and their scientific experiments.

After the Neptune encounter the project will be called the Voyager Interstellar Mission. Both Voyagers will travel beyond the solar system into deep space, and are expected to return data to Earth well into the 21st century.❑

Classified

This Classified section of **/u/fortune** *news* is designed to serve our subscribers and Fortune computer users in general. In order to help everyone use their Fortune hardware and software to its utmost, we are providing a forum for the selling and the buying of used equipment. We will be including this Classified section in each issue of **/u/fortune** *news* as long as there is sufficient interest. So, if you would like to find something for your Fortune or locate a buyer for your equipment, you should not overlook this valuable resource. If you are interested in a listing in this section of **/u/fortune** *news*, please call us at (617) 894-6900.

FOR SALE: 32:16 Package

Updated system with 70 meg Hard disk and tape backup. Includes 4 terminals plus console. Expanded memory and Fortune:Windows. Software includes Fortune:Word, Multplan and Guardian Calender program. Available in 30 days. Price: best offer. Call Judy at 319 234-5701

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30MB hard disk with 256KB, 800K flexible drive, 4 ports, console terminal plus 2 Fortune Intelligent Work Stations (12" monochrome display). Software: Fortune:Word, Multiplan and Sequitur, plus Hayes Smart Modem, 300 baud. Form more information, call Laurie at (602) 795-8870.

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Fortune 32:16 with 20 Meg drive, 1 Meg of memory. Software: Multiplan, Business Basic, Fortune:Word, Multiuser and Thoroughbred BK, AP, AR and GL. Also includes NEC 7710 Spinwriter. System received light use, in excellent condition. Please call for details at **(203) 873-1459.**

Fortune 32:16 10MB

Hardware:
This system has 1 Meg of RAM, 10 MB hard disk, 4 port Comm-A, Hayes 1200 Modem, Console and one additional workstation, IDS 132 dot matrix and Brother letter quality printers, all cables and books.

Software:
Includes Fortune:Word, Multiplan, some business applications, ITE, Basic, Pascal, C,Development Utilities and disks from **/u/fortune** *news*.

Call **Jim** and/or leave message at (212) 724-8114 for more information.

Fortune 45-SX Computer System

Hardware Description:
1 meg memory, 4 port Comm A board, 1 additional Work Station plus Nec 3500R Spinwriter plus tractor feed, cut sheet guid and feeder cut sheet.

Software Included:
For:Pro 2.0, Multiplan, Fortune:Word

Miscellaneous cables and supplies.

Please call **Don Robinson** at **(217) 428-6467** for more information.

Fortune 32:16 System 20 w/keyboard and CRT, 768K memory, 800K flex disk drive, 20 meg hard drive, 4 port Comm A board and 3 Intelligent work stations. Installed software: For:Pro, Business BASIC, BAS Gen. Ledger, BAS Order Processing, Accounts Rec., and Payable, BAS purchase orders, Fortune:Word , Multiplan. Call **C. Laird McClure** at (215) 431-

Fortune 32:16
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Will take best offer.
Call David at
(718) 965-9857

20MB 32:16 - Includes For:Pro 1.7.4.1, 768K RAM, console, 2 terminals, 4-port Comm A and a **20MB Tape Expansion Box.** Software includes: SMC BAS modules, Extended Fortune:Word, Developtment Utilities, and a C compiler. Purchased direct from Fortune, Hardly used, will take best offer. Call Gerry Armel at (508) 285-3040.

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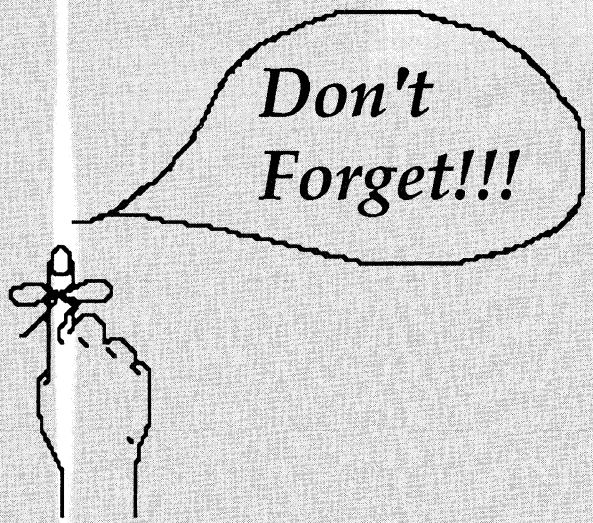

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News From Fortune, *continued from Page 12*

3.6, 3.7, or 3.8 version Basic Workstations, and the 4.1 PROM Kit is intended for the upgrade of 4.0 version Basic Workstations. Each of the PROM Kits contain new System ROMs and installation instructions. The 3.9 PROMs are replacements for existing 3.6, 3.7, or 3.8 PROMs, located on the workstation's System Logic Board. Likewise, the 4.1 PROMs replace 4.0 PROMs on the System Logic Board. Once installed, the PROMs give the Basic Workstation the capability to run VP/ix, a fully integrated environment for MS-DOS programs under UNIX.

These PROM Kits allow our users to take full advantage of VP/ix capability using SCI/Fortune terminals.

For our installed Motorola base, those users who are considering a move to the Intel platform have an additional incentive, since their existing SCI/Fortune terminals can be upgraded with the 3.9 or 4.1 PROMs to provide VP/ix capability on the new Fortune 5386 hardware.

The 3.9 PROMs are intended for installation on 3.6, 3.7, or 3.8 versions of the Basic Workstation, and the 4.1 PROMs can be installed only on 4.0 Basic Workstations. The version level of an SCI/Fortune terminal can be determined by referring to the Soft Setup Menu (press SHIFT, CTRL, and HELP simultaneously; press HELP, then RETURN, to return to the original screen).

In order to run VP/ix, the user must have the VP/ix operating system module installed on a Fortune 5386. In addition, a VP/ix term file diskette and VP/ix template are required. The VP/ix operating system module and the diskette/template package are separately orderable.

The SCI/Fortune Basic Workstation is an ASCII terminal. As such, not all DOS applications will run on it. Applications that can run on a monochrome display will operate on an ASCII terminal; however, those that require EGA or CGA support will not. Further, a mouse controller cannot be used with an ASCII terminal. Applications should be selected accordingly. Contact your authorized SCI/Fortune representative for further information.

VP/ix Terminal Definition for SCI/Fortune Basic Workstation

SCI/Fortune is pleased to announce the availability of the VP/ix Terminal Definition, a product that allows SCI/Fortune Basic Workstation users to run VP/ix. This product enhances the functionality of both the Fortune 5386 system and SCI/Fortune Basic Workstations. It consists of the following:

1. 5.25" 1.2 MB master diskette containing the VP/ix Terminal Definition for SCI/Fortune Basic Workstations

2. Keyboard template which redefines certain function keys on the SCI/Fortune Basic Workstation for use with VP/ix (four per package)

3. Installation and usage documentation

The VP/ix Terminal Definition allows any 3.9 or 4.1 level SCI/Fortune Basic Workstation to be used in the VP/ix environment on the Fortune 5386 system. A Basic Workstation at level 3.6, 3.7, 3.8, or 4.0 can be upgraded by purchasing either the 3.9 or 4.1 PROM kit.

NOTE: Not all DOS applications can be run on an ASCII terminal. Applications that can run on a monochrome display will operate on an ASCII terminal; those that require EGA or CGA support cannot.

A mouse controller cannot be used from an ASCII terminal. Applications should be configured accordingly.

The VP/ix Terminal Definition for the SCI/Fortune Basic Workstation is compatible with DOS applications such as Lotus 123, Word Perfect 5.0, WordStar 2000, the Microsoft C 5.1 Optimizing Compiler, and many more.❑

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/u/fortune* *news*

The Newsletter for Users of SCI/Fortune Computers December 1989 / Volume 6 Number 12

Teach Fortune:Word To Spell Better: or How to use Exception Dictionaries

See ***Page 11*** *for more information.*

* * * * * * * * *

Also, help us plan the content for 1990 by filling out the survey on page 12.

** * * Good 'til the End of December * * **

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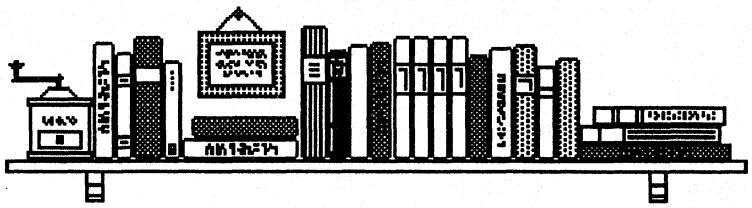
The text for this newsletter was prepared using an SCI/Fortune 5000 for both text input and typesetting. The typesetting was accomplished by using the Aldus Pagemaker program under VP/ix, which is a DOS emulation.

CONTENTS

Notes from the Editors

MacKermit:
Some copies of the MacKermit disk that we have distributed have been found to contain a virus. Although it is not destructive, it may prove annoying. If you are having a problem and would like a disinfectant disk, please contact us at (617) 894-6900.

The BASIC Advisor



The BASIC Advisor is brought to us from Ray Wannall. Ray is President of BaSIC Software Corporation which is located in Baltimore, Maryland.

Question: *I don't believe you have ever discussed the "DEFINE A PROGRAM" utility in IDOL (selector 2, number 8). I know its uses are limited, but have you ever found it helpful?*

Answer: Wouldn't it be wonderful if IDOL could write all of your programs for you? Wouldn't it be more wonderful if your computer could mix and serve the perfect martini? Unfortunately one is about as possible as the other when we work within the confines of IDOL. But the IDOL Program Generator does have its plusses.

We begin our discussion of generating programs in IDOL by going back to "old reliable", the IDOL Data Base Management System documentation book. We open to pages 7-21 through 7-23 in the Reference Guide section where "Define a Program" is explained and we immediately spot three minor but blatant errors. This is starting to get old! Oh well, let's just fix them as we go.

The instructions begin, "Define a Program (S2, Function 9) allows the user to define a program area on a disk as well as build parts of a program." Not that it is any big deal, but Define a Program is on S2, Function 8, not 9. Nevertheless, small errors such as this tend to keep us alert. (We sometimes wake up in the middle of the night with visions of an amateur programmer faithfully following the book and causing a major explosion in his computer.)

At our computer we go into the Define a Program selection. The system asks for "PROGRAM NAME", so we type "MYPROG" and press <CR> (Carriage Return). The name is apparently valid because we go on to the second question. If we had typed in the name of an existing program or file it would have been rejected.

For "SIZE IN PAGES" we are told by the book to "Enter the size of the program in pages (one page = 1024 bytes)." Wrong again! One page is 256 bytes on the Fortune 32:16. But once more, the error is insignificant. Although we may enter any whole number in the range of 1-99, our entry will be ignored. For:Pro does not reserve disk space for new files which contain no information. Therefore we enter the number one and <CR>.

This brings us to the Disk Number question. Here is where we must be careful. When we enter IDOL from the global menu (s4) we have the following Disks (subdirectories) available:

0 IDOL
1 BUTIL
2 BDATA
3 BWORK

When we are in the Business Applications (b1 from the global menu), this is the structure:

0 IDOL
1 BAS
2 BDATA
3 BUTIL

And from the Languages selection (s3 from the global, then number 1, Business BASIC) we have:

0 BUTIL
1 BWORK

We must decide where we need to have access to our program. If it is needed in Business Applications it should go into the BAS Disk (for back up purposes). But the BAS disk is not defined when we are in IDOL, so we must put our program into either the IDOL, BUTIL or BDATA Disks. (This, by the way, is another of our pet peeves with the Fortune design of IDOL/BAS. All other systems include IDOL and BAS together. But that is another article.) If we want to have our program available to all BASIC selections from the global menu, we must put it into the only subdirectory defined as a Disk for all BASIC selections, i.e., BUTIL. Although this is a

weird place to be putting a new program, it is our best bet for the time being. Later, if we wish, we can move it onto another Disk with a Business BASIC Utility such as *SPSD or *TPSD. Therefore at the Disk No question we enter 1 <CR>.

Now the book tells us to "Enter the sector where the program is to be defined." It goes into extra detail about defining the sector, which we read over carefully. When we finally look up to our screen we see that the sector question has been skipped. The computer entered a zero in a column with no heading and moved on to the next question, "Build Program Skeleton (Y/N)?" I don't mind studying, guys, but can't you at least throw in one question on the final exam?

At the "Program Skeleton" question we may answer no (N) and return to the selector if we want our program to be defined as an "uninitialized program". There is absolutely no reason to do this. We are better off using the BASIC utility, "*OPSD", which does the same thing. Because it is defined in BUTIL, *OPSD allows us to create our program from Business Applications, Developmental BASIC or IDOL, and the problem of deciding on a Disk location for our new program is eliminated.

After responding yes to the Build Program Skeleton question and entering our program description, the computer asks if we wish to "Define Program Files (Y/N)". If we respond negatively, the program will be defined and initialized. This is how it will look when we first LOAD it:

```
00010 REM "MYPROG - USER ENTERED DESCRIPTION"
00100 LET X$(7,6)=X$(1,6),X$(1,6)="MYPROG"
01000 GOTO 09500
08000 REM "STANDARD ERROR PROCESSING"
08010 IF ERR=0 THEN RETRY
08020 INPUT (0,LEN=1) 'RB',@(0,22),"ERROR '"+STR(ERR)+"' HAS
08020:OCCURRED, 'RETURN' TO  RETRY OR 'F4' TO END ",*; PRINT
08020:@(0,22),'CL',
08030 IF CTL=4 THEN GOTO 09998 ELSE RETRY
09990 SAVE "MYPROG"
09991 RUN "CUTSA0"
09999 END
```

I don't know about you, but this is about as productive for me as a case of Asian flu might be. About all that's salvageable are lines 10 and 100, which can be hand entered in a fraction of the time even with the "hunt and peck" method. So let's not answer No to the "Define Program Files" question.

The computer asks us to "Enter Channel Number (1-7)". Never mind that at least nine channels are available: this stuff was written for the old BASIC-IV machines which couldn't count above seven. The documentation is pretty clear on this question and the next, "Enter File Name or Number". You may open the channels to any desired IDOL-defined files and exit when you are finished by pressing <CR> at the Channel Number question. For each file selected the program to be generated will include a REM statement and IOLIST statement. It will use statements 00012 and 00013 for the first file selected, 00014 and 00015 for the second and so forth. For example if you selected to open channel 5 to the Customer Ship-To Address File and channel 3 to the Sales Representative File, the following lines would be included in your program skeleton:

```
00012 REM "CH - 5 'CSAMS' (120) SALES REPRESENTATIVE FILE"
00013 IOLIST A5$,B5$,C5$,D5$,E5$,A5,B5,C5,F5$,G5$
00014 REM "CH - 3 'CSHTO' (090) CUSTOMER SHIP-TO ADDR FILE"
00015 IOLIST A3$,B3$,C3$,D3$,E3$,F3$
```

Notice that the channels are listed in the order selected rather than in numeric order. You may, in fact, open the same channel and/or the same file several times. Your only limitation is memory. If you try to open too many files you will get an Error 33 and the uninitialized program will remain on the disk after you handle the program exception. Also, if you manage to open 45 files or more the sequential numbering of the REM and IOLIST statements will overwrite statement 100 in the original program skeleton.

All of this IOLIST statement generation depends upon clean IDOL file definitions. If when generating an IOLIST the program comes across a field with a missing variable name, you will get a message to that effect, but the process will continue after you acknowledge the message. When the program is finally defined in its entirety, it will include an error 20 (known to many as an ERROR V) in the faulty IOLIST. This will have to be hand corrected before the code can be used.

Our only real complaint concerning the file selections is that previously selected channels and files are not displayed on the screen. It would be very helpful whenever we are returning to the screen after a distraction such as a phone call to be able to review what we had already entered.

Although the Define a Program utility is a mostly useless feature of IDOL we have found a couple of reasons to keep it around. First and foremost, the generation of the IOLISTs can be an invaluable time saver, especially when the files we need to access have records of 20 or 30 fields each. We can generate the program, keep the IOLISTs and delete the remaining code.

Another way we use the program generator is to show it to prospective clients during sales demonstrations when we are trying to sell IDOL. At the end of the Define a Program function, the lines of code print to the screen as the program is being generated by the computer. To get the most out of this display we include five or six large files (for example, CPWKF or CEMP1). On the newer machines the display goes by so fast it is not very impressive, but the 32:16 makes it quite a show.

"Just look at that sucker program itself, will ya!"

Never fails!❑

System Administration: Part 32

No Longer requires a Degree in UNIX Wizardry

This series is a must for all owners and users of the SCI/Fortune computer. Dave is President of UNI-KOMP which is located in Houston, Texas. He provides UNIX seminars, software for the SCI/Fortune computer, and is past president of the Houston UNIX User's Group. He contributes independently to **/u/fortune *news***.

by Dave Kloes

In the last two issues, we have been discussing the installation and initial setup of SCO Xenix on the Fortune 5000. To date, we have talked about:

1. Installing the SCO Xenix Runtime diskettes.

2. Fine tuning the system parameters using "configure" so that SCO Xenix maximizes the use of the memory we have installed.

3. Installing the tape unit and running the "mkdev tape" command to tell the system about the tape unit we are using.

4. Installing parallel and/or serial printers and running the "mkdev lp" command to tell the system about the printers we are using.

5. Installing terminals and editing appropriate SCO Xenix files and running SCO Xenix commands to define the terminals.

SERIAL CONTROLLERS

In addition to the HUB6 Serial Port Controller and the ACE Intelligent Serial Port Controller that SCI/Fortune sells, many other serial cards can be used with the Fortune 5000. These cards normally provide 4, 6, 8, 16 or 32 additional ports. A few of the supported boards that are listed in the SCO Xenix "Installation & Release Notes" include Digiboard, AMI, Arnet, and Stargate. The particular board that you select should take into account that there are a limited number of "slots" on the Fortune 5000 that you can put cards in. It would be better, for example, to install a 16 port board instead of two 8 port boards so that one slot is used instead of two.

You have a choice of non-intelligent and intelligent cards. The intelligent cards provide faster throughput from the CPU to the terminals or printers while the non-intelligent boards are less expensive. Other boards are also available that are not on the "supported" list provided by SCO. Manufacturers such as Computone provide their own software for installing the boards and linking them into the Xenix kernel. You are generally better off selecting a board that uses a standard Xenix driver. When you upgrade your operating system, we have noticed that in some cases, you have to go back to the manufacturer to get updated software that is compatible with new releases of the operating system.

Your decision process is not over yet. Most of the serial board manufacturers also offer a choice of the standard 25-pin RS232 ports (like the Fortune 32:16) or RJ-45 telephone jack connectors. The RJ-45 is the newer technology which uses telephone cable to connect the terminals to the system.

Regardless of the serial card you select, the jumpers and/or switches on the card(s) must be set for the proper interrupt, addresses and DMA. In order for the card to function properly, these settings cannot conflict with other hardware components you have installed.

Once the serial cards have been installed and the terminals have been connected, you are ready to tell the system they are there. On the Fortune 32:16, you used "S2" (System Management), "39" (Define device connections) on the Global Menu to tell the system about your serial ports. One nice feature about the Fortune 32:16 is that the system itself looks for the Comm A cards (equivalent to a serial card in the Fortune 5000) that have been installed and automatically create the device files in the "/dev" directory. On the Fortune 5000, however, the equivalent procedure is done either using a manufacturer supplied program or by using a SCO Xenix command. For the serial cards that use the standard SCO Xenix command, the output would something like this:

```
# mkdev serial
You are installing a:

      1. 1 port card
```

```
      2. 2 port card
      3. 4 port card
      4. 5 port card
      5. 8 port card

Select an option or enter 'q' to quit: 5

The card is configured as:

      1. COM1
      2. COM2
      3. COM3
      4. COM4

Select and option or enter 'h' for help or 'q'
to quit: 2
```

After this selection, the program will automatically create the /dev device entries for the ports and will tell you what they are called. It will also automatically update the /etc/ttys and /etc/ttytype files for the device names. There is no "/etc/devtype" file like the Fortune 32:16 - this file is not a standard Unix file. To change the terminal type and baud rate for a given port, you must use a Unix editor to edit the "/etc/ttys" and "/etc/ttytype" files (see last issue). Ports are enabled and disabled using the "enable" and "disable" commands.

TAPE UNITS

SCO Xenix also allows you to use different tape backup units. These units generally have capacities of 40, 60, 120, and 150 megabyte capacities. In addition to the Wangtek which Fortune sells, other units such as Tecmar, Mountain, Irwin (mini-cartridge) and Emerald can be installed. As in the case of serial cards, look at the SCO Xenix documentation for a list of the tape units that can be used. If you are buying a system with a 150MB hard disk drive, it would make better sense to use a 150MB tape backup unit rather than a 60MB unit. As long as the backup you are doing does not use two or more tapes, you have the option of setting up the system so it will do automatic backups at night. The bottom line here is that the 60MB unit might be cheaper, but the system is less flexible in the backup options you have.

By looking at the available tape units that can be used with the Fortune 5000, you will see that some are faster than others. You will also be able to determine whether you want an internal or external tape unit. By using an external unit, you free up space inside the system for other hardware such as disk drives and floppy drives.

TERMINALS

Almost any brand of terminal can be used on the Fortune 5000. Once again, we will remind you that the older style Fortune terminals can be used but the keypad will not work properly.

There are also products such as the "UnTerminal" which will allow multiple monitors to be used for application software that requires full PC functionality (i.e. VPix). In the terminal arena, the Wyse terminals seem to be the most popular with SCO Xenix. They allow you to emulate many terminal types which provides added functionality when you are configuring them to work with the software packages you install. You should take a long look when deciding which terminal to use to make sure they are compatible with all of the software you will be using. For example, some terminals have advantages over others when using programs such as multiscreens and VP/ix. SCO Xenix provides standard terminal definitions for most of the more popular terminal brands.

PRINTERS

All of your existing printers should work under SCO Xenix. However, some of the switch settings may have to be changed. The Fortune 32:16 expects printers to be set at 7 data bits, 1 stop bit and no parity. SCO Xenix normally expects 8 data bits instead of 7.

In addition, there are a wide variety of faster and cheaper printers on the market. SCO Xenix also has standard software for using LaserJet printers. These printers can print letter quality documents in a fraction of the time compared to the older daisy wheel printers (such as the NEC, Qume, Diablo, etc.). The newer dot matrix printers can print 2 to 3 times faster than the older printers that were sold with the Fortune 32:16.

If you have budget constraints (who doesn't??) then you can save money by upgrading to the Fortune 5000 and using your existing hardware where you can. In many respects, however, you are not doing yourself any favors. To take full advantage of the new computer power you are purchasing, you should consider upgrading your other hardware. In many cases, you will pay someone more to get the older hardware to work with the new system than if you had purchased the new technology to begin with. In other cases, the older hardware will become a bottleneck to your new system.

THE SCO XENIX INSTALLATION CHECKLIST

We have already talked about some of the major SCO Xenix tasks that the System Administrator has to do. We have put together a "checklist" that we use to complete the installation process. We hope this checklist will also help you when you are setting up your system:

1. ADD NEW USER ACCOUNTS. With the Fortune 32:16, you add new users to the system by logging in as "newuser". This program prompted you for the new user's name and password. In addition, by using "S2" (System Management) from the global, you are able to add, modify, delete and list user account information. The "mkuser" command is used in SCO Xenix to add new users. The "rmuser" command is used to remove users. SCO Xenix also provides a command called "sysadmsh" which is the System Administrator's shell that can be used to perform many of the functions we have

talked about. This user friendly interface functions the same as the Global Menu on the Fortune 32:16. It also includes a menu for adding, changing, deleting and listing user account information.

2. INSTALL SOFTWARE PACKAGES. Most software packages sold for SCO Xenix are installed using the "custom" command. If you remember, this is the same utility we were using when we where initially installing the operating system software. This utility is used to add, delete and list application software.

3. SETUP AND TEST THE MODEM. If you are going to use a modem on your system, it also must be installed. A modem that is being moved from an existing Fortune 32:16 normally can be used without any new cabling or switch changes. Many of the serial cards cross pins 2 & 3 so existing modem and terminal cables may have to be changed. The SCO Xenix documentation has a section for setting up the modem and using it for both incoming and outgoing calls on the same port. The price of modems have come down significantly over the past couple of years. Now may the time to upgrade your slower 1200 baud modems for 2400 baud ones.

If you have Fortune-to-Fortune Copy (known as "uucp" to the rest of the Unix world) on your current system, you may also want to set this up for SCO Xenix as well. Unlike For:Pro, "uucp" is a standard part of the SCO Xenix operating system and does not have to be purchased separately. More than likely, this is the communication utility that will be used to transfer your data files from the Fortune 32:16 to the Fortune 5000. We will talk about setting up "uucp" on the Fortune 32:16 and the Fortune 5000 in a future issue.

4. INSTALLATION & RELEASE NOTES. The "Installation & Release Notes" provided by SCO Xenix contain a wealth of information about the version of SCO Xenix you are installing. Among other things, they include:

- Hardware and software compatibility requirements. Here they list the different tape drives, hard disk drives, floppy drives, serial port boards, etc. that have been tested and are "supported". If you install hardware that is not on this list, you are on your own as far as SCO support is concerned. Special notes are also included about some of the hardware options.

- Known "bugs" or problems and recommended fixes. If you are experiencing a particular problem, take the time to read these notes before you panic. For example, there is detailed information about what to do if you lose your cursor when the system is booted and what to do if you have a slow printing parallel printer. In some cases, SCO must be contacted for "fix" diskettes that will fix some problems that occur.

- Information about how to configure your system for optimal performance. This includes information about hard disk setup; binary compatibility; DOS installation; the link kit; memory limitations; and common installation/configuration questions and answers.

- Special hardware, software, and documentation notes are also included.

The following additional items may also be useful to look at when you are installing SCO Xenix:

5. In SCO Xenix, there are at least three major commands that can be used for backup - tar, dump and cpio. Basically, the "tar" and "cpio" commands are used to backup directories and the "dump" command is used to backup filesystems or partitions. If you have only one partition on your hard disk, then "dump" suffices as your system backup. We normally recommend that the "tar" backup be used on Monday thru Thursday and that the "dump" command be used to backup the entire system on Friday. As a minimum, we recommend two sets of five tapes that are used every other week to backup the system.

6. The "/etc/default" directory in SCO Xenix has the files that have the default parameters for commands that are used on the system. For example, there is a file called "mkuser" in this directory that has default parameters that are used when you run the "mkuser" command. The default directory where user accounts are made is "/usr". Since this directory contains system directories and files, we recommend that you edit this file and change the default directory to "/u" (obviously, the /u directory must exist before you can do this). Now whenever user accounts are added, they are created in a separate directory which means that we can backup that directory without having to backup other system files on a daily basis.

Another file that is in the "/etc/default" directory is "lpd". Normally there is a line in this file that reads:

```
BANNERS=1
```

If we do not change this file, a banner page will be printed on all queued print jobs. If you do not want the banner page to print, you need to edit this file and change the "1" to "0". This is the same as using the "-h" option with the "lpr" command on the Fortune 32:16 which also suppresses the banner page.

Other files in the "/etc/default" directory can be edited to indicate the default device name that is to be used when you use the "tar", "dump" and "cpio" commands. By doing this, we do not need to specify the device names every time we use one of these commands.

7. In the newer versions of SCO Xenix, there is a "/etc/rc.d" directory that contains actions to be taken when the system is brought up or shutdown. On the Fortune 32:16 and previous versions of Xenix, many of these actions are all found in the "/etc/rc" script file. In the "rc.d" directory, there are sub-directories which are numbered from 1 to 9. When you get a chance, you should review the files in each of these

directories to see if you want to change any of the startup procedures. For example, we edit one of the files to remove a message that is mailed to "root" each time the system is re-booted. User defined parameters can be added to the "/etc/rc.d/8/userdef" file.

8. The following line is normally included to a user's ".profile" file:

```
eval `tset -m ansi:ansi -m:?\ansi -r -s -Q`
```

If the user is logging in on the console, then the terminal type is automatically set to "ansi". If the user logs in on any other terminal, they are prompted for the terminal type:

```
TERM = (ansi) [ ]
```

If you want to "hard code" the terminal type to what has been set in the "/etc/ttytype" files, then this line should be changed to read:

```
eval `tset -r -s -Q`
```

Note that the terminal definition that is used is a function of the port and not who is logging in. Assuming the port that is used by the user has been set to "fos" for the Fortune terminal, then the following output occurs when the user logs in instead of the prompt shown above:

```
Terminal type is fos.
```

If the "eval" line is put in the "/etc/profile" file then it will not be needed in each user's individual .profile file since "/etc/profile" is executed for every user when they login.

9. The current directory is not included in the search path for root. Therefore, we suggest that you modify the "/.profile" file to include "." (which stands for the current directory) in the PATH variable. The PATH line normally reads:

```
PATH=/bin:/usr/bin:/etc
```

We change it to read:

```
PATH=.:/bin:/usr/bin:/etc
     ^
     |
```

Since we have added the ".:" to this line, the current directory is searched for any command that is entered before the other directories are searched.

Next year, we will complete our checklist. Until then, we hope you all have a safe and happy holiday.❑

*** New Product New Product New Product ***

Software For The Fortune 32:16 And Formula

A/R HISTORY LINK ($395.00) - this program provides the capability to keep invoice and payment history in BAS Accounts Receivable. It shows payment days, dollar days, average payment days and average dollar days. An inquiry screen and report is provided.

AUTOMATIC TAPE BACKUP LINK ($295.00) - automatic backup up of your system to tape at a specified time. Directory(ies) to backup and backup dates, times and frequencies are user specified. The user may also specify a backup based on files that have changed in a specified number of days. A user friendly menu system is provided. Automatically logs off users while backup is in progress.

W-2 LINK ($395.00) - designed for companies with over 250 employess who must report W-2 payroll information to the Social Security Administration (IRS) via magnetic tape or diskette. Automatically takes information in the Business Accounting System (BAS) Payroll module and puts it onto diskette in the format required by the IRS. Also available for PAC software. also.

DOS LINK ($395.00) - provides easy-to-use menus and programs that transfer data between any PC (including Laptops) running DOS and the Fortune system.

SPREADSHEET LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Multiplan or UltraCalc and back. For example, it could be used to send data from any of the BAS files (Chart of Accounts, Customer Master, Inventory Master, etc). Allows selection of fields to be sent and provides logical retrieval and key range selection.

RECORDS PROCESSING LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to Records Processing and back. For example, it could be used to take customer address data from the Customer Master and will automatically make the Records Processing List document for mail/merge. Allows selection of fields to be sent and provides logical retrieval and key range selection.

ASCII LINK ($295.00) - can pass data from BAS/IDOL/BASIC files to ASCII and back. Use to send data between machines or databases. For example, it could be used to send data from any of the BAS files (Customer Master, Inventory Master, etc). Allows selection of fields to be send and provides logical retrieval and key range selection.

TERMINAL/PRINTER LINK ($195.00) - provides capability to print data on a printer connected to a workstation. Can print BAS/IDOL/BASIC reports, Multiplan and Fortune:Word documents. BAS/IDOL reports can also be viewed before printing, converted to Fortune:Word format; accumulated for mass printing; backed up to diskette; printed on any system printer. An option to print BAS/IDOL reports on a **LASER PRINTER** is $50 extra. Many other options are included. Fortune:Word printing on a printer connected to a workstation is $50 extra.

TELEPHONE LINK ($295.00) - on-line telephone message, telephone directory and inter-office mailbox/menu system. Telephone message entry resembles typical pink slip. Telephone directory can search by name or company. Mailbox/message system can send and receive Fortune:Word documents or Multiplan documents. Does much more! Written in Business Basic.

CALCULATION LINK ($195.00) - provides programs for amortization, depreciation, loan repayment, averaging (with graph), linear correlation and breakeven analysis. Written in Business Basic.

KOMPACT PERSONNEL ACCOUNTING ($995.00) - provides for data capture of personal, wage/salary, job, education, salary/wage, appraisal training, dental, medical and life insurance data. Includes over 80 pre-defined reports/worksheets. Written in Business Basic/IDOL.

AUTOMATIC REPORT LINK ($195.00) - prints any number of IDOL defined reports automatically without having to select from a menu. User defined report frequencies.

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How To Create Exception Dictionaries in Fortune:Word

In this article we will discuss how to finely tune the spell-checking capabilities of Fortune:Word. We will do this by showing you how to use "Exception" dictionaries.

Let's begin by explaining what an Exception dictionary is. An Exception dictionary, as its name suggests, "is a regular Fortune:Word document containing words that are not in the Spelling Tools 80,000 word Proximity/Merriam-Webster Linguibase lexicon." (Fortune:Word Reference Guide, p. 2-83).

If you have availed yourself of the spell-checking capabilities of Fortune:Word, then you know that there are often words that will appear in your document that are not contained in the spell-check dictionary. You know very well that these words are spelled correctly but because they are not in the dictionary, Fortune:Word will think they are misspelled. What do you do? Well, you create an Exception dictionary, of course!

We will take you through various processes of using an Exception dictionary including creating one, adding words to one, changing them and even adding syllable points to words in the dictionary. The information for this article was gleaned from the **Fortune:Word Reference Guide** on pages 2-83 to 2-86.

Creating an Exception Dictionary

Making an Exception dictionary is incredibly easy and there are actually four different ways you can accomplish this task. Perhaps the most straightforward is to create a new Fortune:Word document and simply type the words into the document. The words must have at least one space between them or type each word on a separate line followed by a RETURN. When you are done, simply exit Fortune:Word just like you would with any other document. The first time you use this Exception dictionary it will be compiled.

Using Your New Exception Dictionary

To use this new Exception dictionary you will need to spell check a document. Choose "Document Processing Tools," then "Spelling Tools," then "Spelling Checker" and finally enter the name of a Fortune:Word document that you wish to spell-check. You will see the Spelling Checker screen and you should see in the lower left hand quadrant the Exception dictionary selection area. Choose "yes," then press EXECUTE and you will be prompted for the name of an Exception dictionary. Enter the name of the document you created and then press EXECUTE. Since this is the first time you have used this particular Exception dictionary, you will need to compile it, so hit EXECUTE to compile the dictionary.

Fortune:Word will compile your new Exception dictionary and then immediately begin spell-checking your document and every thing should run smoothly.

Adding Words To An Existing Exception Dictionary

There are two basic ways of adding new words to an existing Exception dictionary. First, you can edit the Exception dictionary in the same way you edit any Fortune:Word file. Just insert the new words in the manner described above in the section on creating a new Exception dictionary.

The second way is to add words "on the fly." You can add words to the Exception dictionary that you are using when you are spell-checking. When the spell-checker finds a word that it thinks is misspelled it stops and highlights that word and waits for you to do something with it. One thing you can do is to add it to your Exception dictionary.

To do this, simply press COPY (or SHIFT/COPY if you want to save specific capitalization). Fortune:Word will then tell you that it has saved that word in the Exception dictionary. One thing to note, however, is that this new word will not take effect until the *next* screen.

What Is A Word?

So far we have talked about adding words to an Exception dictionary, but we have not discussed what is considered a valid word. Certain special characters can be part of a word, such as "+" and "-" as in XP-45 or one+two. However, the following characters are not recognized as part of a word:

```
| / [ ] < > { }
```

and matched parentheses. If you use any of these characters in a word in an Exception dictionary, the word is still marked as an error by the spelling checker.

Continued on Page 20

/u/fortune *news* Survey

We are planning the content and direction of **/u/fortune** *news* for 1990 and we need your input. Please take the time to fill out this survey and send it back to us as soon as possible. We would very much like to produce a magazine which will be as helpful to you as possible - but you must respond. Please send completed surveys to: The Cambridge Consortium, Inc., 225 Crescent Street, Waltham, MA 02154

Name: _____
Address:
_____
_____
_____
_____
Phone: _____

1. Circle all types of Fortune computers you own:
   a. 32:16 b. 4000 or 8000
   c. 5286 d. 5386 (Fortune 5000)
   e. Other: _____

2. Please list, in order of importance, the five software programs you use the most (e.g., Fortune:Word, Mulitplan):
   1) _____
   2) _____
   3) _____
   4) _____
   5) _____

3. How well do you understand Unix?
   a. Not well at all b. Moderately well
   c. Well enough d. Very well
   e. I'm a Unix Guru

4. Would you like to learn more about Unix?
   Yes No

5. How well do you understand Fortune:Word?
   a. Not well at all b. Moderately well
   c. Well enough d. Very well
   e. I'm a Fortune:Word Guru

6. Would you like to learn more about Fortune:Word?
   Yes No

7. My spreadsheet program is:
   a. Multiplan
   b. Tactician
   c. Other: _____
   c. I don't own a spreadsheet program.

8. How well do you understand your spreadsheet?
   a. Not well at all b. Moderately well
   c. Well enough d. Very well
   e. I'm a spreadsheet Guru

9. Would you like to learn more about your spreadsheet?
   Yes No

10. How well do you understand system administration?
   a. Not well at all b. Moderately well
   c. Well enough d. Very well
   e. I'm a sysmgr

11. Would you like to learn more about system admin.?
   Yes No

Please circle any other topics you would like to see discussed in **/u/fortune** *news*:

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Please use this area to give us more ideas of what SPECIFICALLY you would like to see covered in /u/fortune news. This is your chance to let us know what information would be the most helpful to you. If you need more room, use an additional sheet of paper. All of your comments will be taken very seriously.

_____

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Index to /u/fortune *news*

Once again it is time for our annual index to /u/fortune **news**. We hope that it will prove useful for our readers. The format for each entry shows the name of the indexed item, the name of the article and the issue that contains the article. The issue is specified by the volume number and the issue number, follwed by the page number. The names of regular columns are abbreviated according to the chart at the bottom of the page.

BAS-The Basic Advisor	News-News from SCI/Fortune	MP-Multiplan
FW-The Fortune:Word Glossary	Help-/u/help	SA-System Administration
UD-The UNIX Directory	Disks-Software Disk Library Highlights	(6.6:11)-Vol. 6 Num 6, page 11

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Classified

This Classified section of **/u/fortune** *news* is designed to serve our subscribers and Fortune computer users in general. In order to help everyone use their Fortune hardware and software to its utmost, we are providing a forum for the selling and the buying of used equipment. We will be including this Classified section in each issue of **/u/fortune** *news* as long as there is sufficient interest. So, if you would like to find something for your Fortune or locate a buyer for your equipment, you should not overlook this valuable resource. If you are interested in a listing in this section of **/u/fortune** *news*, please call us at (617) 894-6900.

FOR SALE: 32:16 Package

Updated system with 70 meg Hard disk and tape backup. Includes 4 terminals plus console. Expanded memory and Fortune:Windows. Software includes Fortune:Word, Multplan and Guardian Calender program. Available in 30 days. Price: best offer. Call Judy at 319 234-5701

Fortune 32:16 System

30MB hard disk with 256KB, 800K flexible drive, 4 ports, console terminal plus 2 Fortune Intelligent Work Stations (12" monochrome display). Software: Fortune:Word, Multiplan and Sequitur, plus Hayes Smart Modem, 300 baud. Form more information, call Laurie at (602) 795-8870.

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SX 70 T

This unit has a 70 MB hard disk, 60 MB Tape streamer, 1MB of RAM and has For:Pro 2.0. THIS IS AN EXCELLENT OPPORTUNITY TO GET A TAPE AND UPGRADE TO AN SX! Call the friendly folks at **/u/fortune** *news* for a good deal - (617) 894-6900.

Fortune 32:16 with 20 Meg drive, 1 Meg of memory. Software: Multiplan, Business Basic, Fortune:Word, Multiuser and Thoroughbred BK, AP, AR and GL. Also includes NEC 7710 Spinwriter. System received light use, in excellent condition. Please call for details at **(203) 873-1459.**

Fortune 32:16 10MB

Hardware:
This system has 1 Meg of RAM, 10 MB hard disk, 4 port Comm-A, Hayes 1200 Modem, Console and one additional workstation, IDS 132 dot matrix and Brother letter quality printers, all cables and books.

Software:
Includes Fortune:Word, Multiplan, some business applications, ITE, Basic, Pascal, C,Development Utilities and disks from **/u/fortune** *news*.

Call **Jim** and/or leave message at (212) 724-8114 for more information.

Used Fortune Parts For Sale

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1 MB XP Mother Board
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20 MB Hard Disk (C20)
and more...

All components are fully functional, supplies are limited.

Please call **Jim** at **(203) 828-4811**

Fortune 32:16 System 20 w/keyboard and CRT, 768K memory, 800K flex disk drive, 20 meg hard drive, 4 port Comm A board and 3 Intelligent work stations. Installed software: For:Pro, Business BASIC, BAS Gen. Ledger, BAS Order Processing, Accounts Rec., and Payable, BAS purchase orders, Fortune:Word , Multiplan. Call **C. Laird McClure** at (215) 431-

Fortune 32:16
1 MB Memory
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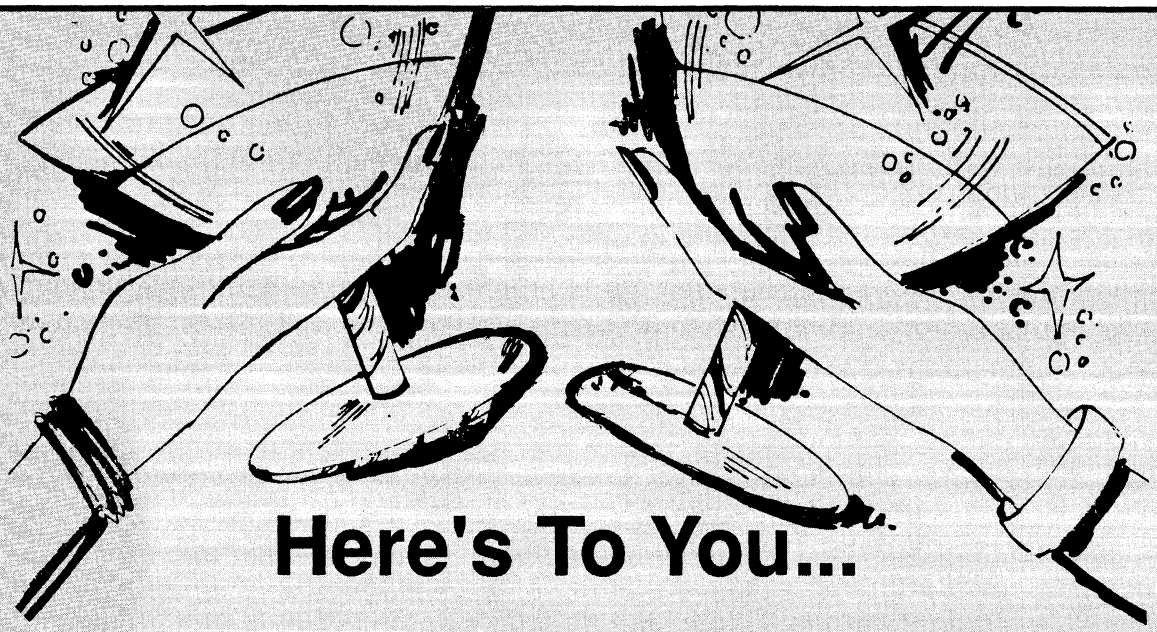
Fortune:Word
Will take best offer.
Call David at
(718) 965-9857

20MB 32:16 - Includes For:Pro 1.7.4.1, 768K RAM, console, 2 terminals, 4-port Comm A and a **20MB Tape Expansion Box.** Software includes: SMC BAS modules, Extended Fortune:Word, Developtment Utilities, and a C compiler. Purchased direct from Fortune, Hardly used, will take best offer. Call Gerry Armel at (508) 285-3040.



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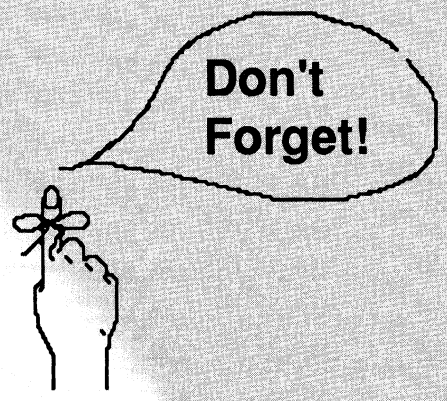

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New Address

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Kensington, CT 06037
(203) 828-9784
Jim Monterosso & Effie Procopiou

Exception Dictionary, *continued from Page 11*

The maximum length of a word in an Exception dictionary is 30 characters. When a word contains special characters, non-standard punctuation, or non-standard capitalization, the maximum length is 14 characters.

Changing Exception Dictionaries

Although you cannot change an Exception dictionary during hyphenation, you can change to a new Exception dictionary in the middle of the spell-check process. To do this, simply press "GO TO PAGE" and enter the name of a previously compiled Exception dictionary and then press RETURN or EXECUTE. The newly choses Exception dictionary will take effect on the next screen.

If you enter the name of an uncompiled Exception dictionary, then you will need to follow the instructions the Fortune:Word gives you. These instructions will be similar to what you have seen when you created a brand new Exception dictionary.

Using Exception Dictionaries To Hyphenate

You can use an Exception dictionary to hyphenate words during the hyphenation phase. To do this, you simply add syllable points to the words in the Exception dictionary. For example, suppose you added the following word to your Exception dictionary:

```
specification
```

If this word is typed into the Exception dictionary as is, then it will **not** help with hyphenation. However, you can add two types of symbols to mark syllable points. The pipe sign (|) indicates a preferred syllable point and the tilde (~) indicates an ordinary syllable point. Thus, if you entered:

```
spec|i~fi~ca~tion
```

then the hyphenation phase would be able to hyphenate "specification" correctly.

When you use an Exception dictionary that contains syllable point markers and a word is presented for hyphenation, the suggested syllable points are presented at the bottom of the screen as shown in the following example:

```
Syllable points: spec-i'fi'ca'tion
```

Putting It All Together

The spell-checking and hyphenation portions of the Fortune:Word word processor are convenient and time-saving. However, it would be impossible to include every known word in the built-in Fortune:Word spell-checking dictionary. So, Fortune:Word allows you to build your own customized lists of words called an Exception dictionary.

In this article, we showed you how easy it is to create a brand new Exception dictionary and add words to it. In addition, we showed you that it was as easy as pushing one button to add new words to an already existing Exception dictionary. And finally, the Exception dictionary is not only used to identify spelling mistakes, but when used properly it helps to hyphenate words as well.

All-in-all, the Fortune:Word Exception dictionary mechanism is an easy-to-use system for adding new words to the spell-checking and hyphenation capabilities of Fortune:Word.

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